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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JULY—DECEMBER

1852.

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OF THE
MEDICAL SCIENCES:

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A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL
BRITISH AND CONTINENTAL
IN THE PRECEDING
TOGETHER
SERIES OF CRITICAL REPORTS OF
THE COLLATERAL SCIENCE

BOOK NO.
1343

EDITED BY
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Apparatu nobis opus est, et rebus exquisitis undique et collectis, accessit, comparatis.
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Edinburgh Medical and Surgical Journal.
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Edinburgh Monthly Journal.
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Lancet.
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Zeitschrift für Rationelle Medicin.

ITALIAN.

Annali Universali di Medicina.

N.B. Every periodical here specified is consulted *directly* by the Editors and their Coadjutors.

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

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PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL PATHOLOGY.

(A.) RELATING TO THE AFFINITIES OF DISEASE.

ART. I.—*Relationship of Glanders to Acute Diffuse Inflammation.*

(From the *Dublin Quarterly Journal of Medical Sciences.*)

[The following remarks occur in the report of a case of glanders by J. T. Banks, M.D. M.R.I.A., King's Professor of the Practice of Physic, and Physician to the Whitworth and Hardwicke Hospitals; and we copy them as well worthy the attention of those who may be engaged in medico-philosophical investigations.]

“There are cases presenting all the phenomena of well-marked glanders, in which we fail, after the most searching investigation, to discover that the individuals so affected have ever come within the sphere of the poison. In illustration of this I may refer to the case of a policeman, who died in the Hardwicke Fever Hospital some time since. Of the many examples of glanders which I have seen, I never witnessed what appeared to me a more malignant and rapidly fatal form of the malady, pustules were scattered over the body, and surrounded by the *white areola*, a remarkable phenomenon, the presence of which, Dr. Hutton, I believe, first pointed out in the eruption of glanders. In this instance I noticed that the white areola became more distinctly visible after death than it had been before. The inability to trace the disease to communication with either horse or

man labouring under glanders, led me to practice inoculation with the matter taken from one of the pustules, in a horse procured for the purpose. The result was the animal's becoming affected with acute glanders, and dying on the tenth day; the morbid appearances in each being absolutely identical. If, in default of evidence, we admit that the disease in the policeman was not the consequence of the absorption of the poison of glanders, then we have unequivocal grounds for stating that a poison generated in the human body is adequate to the production of a disease in the horse *not distinguishable* from glanders.

"My friend, Dr. Frazer, has published in the 'Dublin Medical Press' a most interesting paper, in which his object is to prove the identity of glanders and diffuse inflammation; he reports cases of diffuse inflammation, which he observed while acting as my clinical clerk in the Whitworth and Hardwicke Hospitals, in which there existed the eruption with the white areola, considered to be pathognomonic of true glanders. Dr. Frazer, after stating the points of analogy between the cases of diffuse inflammation adduced by him and undoubted cases of glanders, asks:—'Are they not identical diseases?' The question is still an open one. Would the matter taken from one of these cases have produced glanders? Perhaps it would. This is an inquiry of much interest, and one which I shall prosecute when an opportunity presents itself."

ART. 2.—*Concurrent Variola and Vaccinia.*

(From several numbers of the *Lancet*.)

[The following cases are taken from different late numbers of the 'Lancet.' The first two possess very considerable interest from the *contemporaneous* evidence they afford of the reciprocally modifying influence of the two diseases, *especially in the immediate neighbourhood of the vaccinated part*. The third is not less interesting from the absence of this influence. The fourth is one in which the modification was confined to the variola. In the last two cases it may be doubted whether the smallpox was *concurrent* with cow-pox, or only *coexistent* with it; but this is a question of little practical importance.

The first two cases are by Dr. Robert Fowler, the resident medical officer of the Loughborough Dispensary. He writes:]

Case 1.—On March 31st last, I vaccinated Marianne W—, aged three years, a perfectly healthy child. When next seen, on April 7th, I was told that on the very day (April 1st) following vaccination she became very sick, vomiting frequently, and feverish. On the evening of the next day (April 2d) the mother fancied that there was a little redness about the chin, which, however, on the 3d of April, assumed the aspect of decided papulæ over the whole face, arms, legs, and body. I now ascertained that at the school to which the child had gone, up to the day of its being taken ill, two or three of the scholars had had the smallpox about a month ago, and had returned among the other children some few days back.

April 7th.—The vaccine vesicles (seventh day) are larger than the

variolous, very little elevated above the cuticle, irregular in shape, being not perfectly circular, but flattened and indented, and lobulated at the edges. There is evidently very little fluid in them, and no appearance of areola. The whole body is marked with distinct variolous vesicles, (fifth day,) having the same flattened aspect as, but smaller than, the vaccinia; and being so little elevated above the surface, they do not present that "shotty" feel so characteristic of variola, especially in its papular stage. Febrile action slight.

9th.—The variolous eruption (seventh day) is more turgid; that on the face is pustular, and a few of the pustules are beginning to scab; that on the arms is hemispheroidal, prominent, and pustular; that on the legs is opaque, but not distinctly pustular; the central depression still existing in some of the vesicles. The vaccinia (ninth day) is not more elevated, though the fluid seems more opaque; the vesicles are now about half an inch in diameter, but still present that irregular, indented appearance round their margin, external to which there is now an areola of about one line in diameter, as there is also around each variolous pustule. The variolous vesicles in the immediate neighbourhood of the vaccinia are much smaller and less opaque than elsewhere, neither are they so turgid or spherical as in other parts of the body. The mother attributes this to the child always lying on that side, (the right,) and certainly the left arm (which, however, by some oversight was not vaccinated,) presents well-filled vesicles; the eruption of the right leg also is somewhat less prominent than that on the left, though certainly there is not that marked difference observable in the vesicles of the two arms.

10th.—Variolous eruption (eighth day) entirely pustular, scabbing going on in the face. Areola of vaccine vesicles (tenth day) no larger, though the vesicles themselves are larger, and beginning to lose their indented margin. The variolous eruption around vaccinia is now pustular.

12th.—Scabbing progressing on the face, (tenth day,) and the pustules on the arms shrivelling up; no secondary fever. A scab perceptible (twelfth day) on each vaccine vesicle; no increase of areola; nor is there any surrounding induration.

14th.—Some of the pustules on the legs shrivelling, (twelfth day.) Vaccinia (fourteenth day) scabbing, the scabs being rather conical, and of a dirty light brown in colour; no increase of areola.

16th.—All the pustules of the legs shrivelling, (fourteenth day.) Scabs of vaccine vesicles (sixteenth day) have fallen off, leaving an irregularly circular, purple-red mark, larger, though otherwise similar, to the stains of the variolous eruption; the vaccine stains are perfectly flat and smooth, without the slightest indication of the small depressions and radiating lines characteristic of a good vaccine cicatrix.

19th.—The whole body presents purple-red stains.

[Dr. Fowler then goes on to say:]

Considering vaccinia as a disease *sui generis*, we have here two exanthemata coexisting in one person, and each by its presence modifying, but not superseding, the regular course of the other. That the vaccinia was modified, is shown by the irregular shape and

flattened condition of the vesicles, by the absence of the areola and surrounding hardness, by the shape and colour of the scab, by the duration of the eruption—the scab having fallen off on the sixteenth instead of about the twentieth day—and by the character of the remaining cicatrix. The size of the pustules and the absence of the secondary fever, notwithstanding the duration of the eruption, was not considerably shortened, indicate that the variola was of a modified kind. By those sceptical of the prophylaxis of vaccination, the above case will be greedily seized on; but are we not from past experience warranted in surmising, and even affirming, that although the discovery of Jenner was in this case incapable of arresting or superseding the progress of the poison already concocting in the blood, yet that to the coexistence of the vaccine virus this child owes the safety and mildness of its attack?

Case II.—On *May 10th*, I vaccinated Sarah Ann A—, aged six months, and saw her again on the 17th, when the mother stated that on the Thursday previous (the 13th) the child seemed as if it had taken cold, and she gave it a powder from a druggist; on the day following the child was very sick, and on the Saturday morning papulæ appeared on the face, extending, on Sunday, over the whole body.

May 17th.—The child is very restless; the eyelids œdematous and closed; the whole face swollen and marked with small vesicles no bigger than those of herpes, coherent, with central depression and surrounding redness; arms, legs, and body present these minute vesicles, some smaller than a pin's head, especially in the vicinity of vaccinia; vaccine vesicles flattened and lobulated at the edges, transparent, with the central depression, but no areola or surrounding hardness; pulse feeble and quick; tongue dry, and coated with a dirty ash-coloured coat. Ordered a calomel and rhubarb purge to be given immediately, and the following mixture:—Saline mixture, two ounces, syrup of poppies, two drachms; one drachm to be taken every four hours. As much farinaceous diet as it will take besides the breast.

18th.—Less restless; face less swelled, and interstices of eruption not so red; eruption, both variolous and vaccine, filling out.

19th.—Able to open the eyes a little; some of the vesicles on face becoming pustular.

20th.—Whole face becoming pustular; vaccinia and variolous eruption elsewhere still vesicular; very restless, knocking its muffled hands about, and continually trying to rub its face. Add four minims of tincture of opium to the mixture, and take one drachm every hour.

21st.—Died at 5, A.M.

The general progress of the disease, in this case, seems to have proceeded to its fatal termination uninfluenced by the coexistence of the vaccine virus, the nervous system of a child six months old being quite unequal to the overwhelming force of the poison; nevertheless there are one or two points of interest in the symptoms which do not deserve to be passed over in silence. Firstly. In this case, as in the one previously reported, the vaccinia was evidently modified, the vesicles, instead of being prominent and circular, were "flattened and lobulated at the edges," presenting the appearance as if studded round their margin with smaller adherent vesicles; but from carefully ex-

aming them I satisfied myself that they were not distinct and separate vesicles, but actual projections of the vaccine vesicle itself. Secondly. The smaller size of the variolous vesicles in the immediate neighbourhood of the vaccinia was also remarked, as in the previous case, where it was attributed by the mother to the child always lying on the vaccinated side; but in the present case the child was generally on its back, and the appearance was observed on *both* vaccinated arms, and not on the legs; therefore it seems probable, that although the incubation of the variolous poison in the blood was able to prevent the contamination of the *whole* system by the vaccine virus, yet the latter was enabled, by an extension, as it were, of its local influence, to modify the vesicles of the former in its immediate vicinity. This supposition would countenance the theory, that during the period of incubation of an inoculated poison, the virus lies dormant in the part, and that it is not until after the appearance and existence for a certain time of the eruption, that the system becomes contaminated with the protective or other influence of the disease; thus vaccinia would at first be a local eruption, and, indeed, all practical men know that though perhaps communicable during the first few days of the existence of the vesicle, the protective power of the virus cannot thus early be equally depended on; and probably Bryce's test would not succeed, even in true vaccinia, if employed in *less* than four or five days after the first vaccination. So, also, with the venereal poison; it being now pretty generally admitted that a chancre may be treated as a local sore a few days after its first appearance, without any fear of secondary symptoms.

[The next case is furnished by Mr. T. C. Beatty of Durham. He writes:]

On the 27th of October last I was summoned to visit Mrs. M—, who was in daily expectation of the birth of her first child. The symptoms which presented themselves were, headache, vomiting, and pain in the lumbar region, with "bearing down." Considering these symptoms as precursory of labour, I prescribed a little simple febrifuge anodyne mixture, and directed that I should be sent for if she should be any worse. On the following day, Mrs. M— was very poorly, and on the next (the 29th), at 6, p.m., was delivered of a daughter.

The case was a tedious and severe one, but requiring no especial comment, excepting the appearance on the neck, face, and arms of a plentiful crop of very suspicious-looking spots, becoming so much developed during the excited circulation of severe labour, that I had no difficulty in diagnosing them to be variolous. The following day there could be no doubt that my patient was the subject of variola in a *distinct* form, but of at least average severity. The disease went through its usual stages, and ended in perfect recovery, leaving, however, a few marks of its visitation. To give the infant a chance, she was carefully vaccinated on the morning of the fourth day after her birth. True vaccinia was the result; and yet, on the eighth day after she was vaccinated, when the vesicles were fully matured, the little patient was very ill, and showed signs of an eruption under the skin, which proved to be *confluent* small-pox, of which the little creature

died four days after. Several of my medical friends think the case unique; all consider it exceedingly interesting and instructive. If it sheds any light upon the *quæstio vexata* of the present day, I shall be rejoiced by its publication.

I see it has escaped me to mention, that after I had vaccinated the child, I enveloped the arm round the punctures with linen, securing it in situ with a bandage, to prevent any variolous matter being communicated from the mother through the punctures or abrasions of the cuticle.

[The last case is by Mr. Robert Tod, of Gilmore Place, Edinburgh. He thus mentions what is essential:]

Case iv.—On the 13th of April last, I vaccinated a healthy female child, aged five months. At the ordinary interval vesicles appeared, of a large size, and well filled with lymph. So far, and for several succeeding days, everything seemed most favorable to the patient's future exemption from variola. But on the ninth day after the maturation of the vaccine vesicles, I was suddenly called to attend the child, whom I found labouring under a mild but decided attack of variola. A large crop of small pustules gradually formed, and spread over the limbs and face particularly, attended with a considerable degree of constitutional secondary fever. The eruption presented all the usual characters, and pursued the usual course of modified small-pox. The patient had a good recovery.

(B.) RELATING TO ZYMOTIC DISEASE.

ART. 3.—On Cholera.

(1. *The Edinburgh Review* for October, 1852. 2. *Abstract of Report by James Wynne, M.D., on Epidemic Cholera as it appeared in the United States of America in 1849 and 1850, being Appendix C to the Report of the General Board of Health on Epidemic Cholera in 1849-50.*)

[The article which appears under the head of "*Cholera and Quarantine*" in the '*Edinburgh Review*' is an excellent embodiment of the views of the Sanitary Commissioners on the subject, though the ungracious tone in which it is written is much to be regretted. The object consequently is to show that "contagion is a vulgar error," and that the disease in question is a true product of the place in which it makes its appearance, akin to fever, and no more migratory in its character, and in this manner to explode the idea of quarantine.]

On reading this article we find three points on which it may be well to refresh the memory, now that cholera is again threatening to appear among us. The first is the endemic rather than the epidemic character of the malady; the second the gradual and progressive and not the sudden mode of onset; the third the remarkable success of early treatment.

1. The endemic and local rather than the epidemic character of the malady is put prominently forward in the following quotation:]

"As was anticipated and predicted, it returned to the same

countries, to the same cities and towns, and even to the same streets, houses, and rooms, which it ravaged in 1832. It was true that many places were attacked in the recent epidemic which had escaped in the former; but very few indeed that suffered then escaped now, except in some few instances in which sanitary improvements had, in the meantime, been effected. In some instances it reappeared on the very spot in which it first broke out sixteen years before. The first case, which occurred in the town of Leith, in 1848, took place in the same house and within a few feet of the very spot from whence the epidemic of 1832 commenced its course. On its reappearance in the town of Pollokshaws it snatched its first victim from the same room and the very bed in which it broke out in 1832. Its first appearance in Bermondsey was close to the same ditch near which the earliest fatal cases occurred in 1832. In Oxford in 1849, as in 1832, the first case occurred in the county jail. This return to its former haunts has been observed in innumerable other places. The same has been the case abroad. At Gröningen, in Holland, the disease in 1832, attacked in the better parts of the city only two houses, and the epidemic made its first appearance in these two identical houses in 1848. In numerous instances medical officers, who had attended to the conditions which influence its localisation, pointed out, before its return, the particular courts and houses on which it would seize. 'Before cholera appeared in the district,' says the Medical Officer of the Whitechapel Union, speaking of a small court in the hamlet, 'I predicted that this would be one of its strongholds.' Eighteen cases occurred in it. Before cholera appeared in the district the Medical Officer of Uxbridge stated that if it should visit the town it would be certain to break out in a particular house, to the dangerous condition of which he called the attention of the local authorities. The first case broke out in that identical house. In a place called Swain's Lane, in the healthy village of Highgate, near London, there is a spot that the medical officer felt so confident that the disease would make its appearance, that he repeatedly represented to the authorities the danger of allowing the place to remain in its existing condition, but in vain. In two houses on this spot, six attacks and four deaths took place; yet there was no other appearance of the disease during the whole epidemic, in any other part of the village, containing 3000 inhabitants. 'Before the appearance of the disease in this country,' say the Board of Health, 'we warned the local authorities that the seats of the approaching pestilence would be the usual haunts of these epidemics.' This conviction was founded on evidence to which subsequent experience gave the force of demonstration; for, as the Board had anticipated and predicted, the usual haunts of typhus and dysentery in ordinary seasons actually became, when the epidemic influence aggravated the form of divers diseases, and for the time banished almost every other form of disease, the chief abiding places of cholera." (p. 414.)

[The converse of the last position is also shown in many instances in which cholera was distinctly exorcised by a proper attention to cleanliness, ventilation, drainage, and the rest. The complete immunity from cholera of the inmates of the model lodging-houses and

of the prisoners in the newly-constructed prisons, are facts the meaning of which can hardly be misunderstood.

2. The endemic rather than the epidemic character of the malady appears also in the gradual and progressive way in which it makes its appearance in its several haunts. The outbreak may seem to be sudden, but in reality it is not so.]

"In every European city, as well as in the United States of America, the pestilence gave distinct evidence of its approach, and intimated, by signs not to be mistaken, the severity of the impending attack. An extraordinary prevalence and mortality of the classes of disease which have been observed usually to precede it, foretold its approach and intensity. At Moscow, at St. Petersburg, and other Russian towns, its outbreak was preceded by a general outbreak of influenza and intermittent fever, the latter in many continental cities taking the place of typhus in this country. Diarrhœa also was generally prevalent before the actual outbreak. At Berlin, intermittent fever, dysentery, but especially diarrhœa, were epidemic. The same diseases, but particularly intermittent fever, scarlet fever, and influenza, were prevalent at Hamburg. In London there had been, during the preceding five years, a progressive increase in the whole class of zymotic diseases, amounting to an excess above the average of 31 per cent.; while the mortality from typhus, which, in 1846, considerably preponderated over that of 1845, was still higher in 1847, and exceeded in 1848, by several hundred deaths, the mortality of any preceding year. The deaths from scarlet fever were also greatly above the average; and such was the mortality from influenza, that in 1847 and 1848, almost as many at the earlier periods of life perished by this disease as by the more terrible epidemic that followed it; but the malady which all along continued its course with the most steady progress was that which was the most nearly allied in nature to the approaching epidemic, viz. diarrhœa. The deaths from this disease, in the five years ending with 1848, amounting to 7580; whereas in the preceding five years there were only 2828; which taking separate years in this series, the deaths were in 1848 more than seven times greater than in 1839, and nearly five times greater than in 1841. All these circumstances indicated an epidemic force extending over the metropolis and steadily increasing, which justified the prediction of the Metropolitan Sanitary Commissioners, founded on their observation of the increasing crowding of the population, its state of filth, its low sanitary condition, and the actual prevalence among the people of the diseases that precede and give warning of the approach of the pestilence—that the impending epidemic would be more severe than that of 1832; and the event fully realised the prophecy." (p. 420.)

Again:—"It has long been observed that great epidemics are usually preceded by circumstances evidentiary of a change of condition in the health of the people, which is commonly regarded as constituting a predisposition or susceptibility to their influence some time before they make their decided and general attack. Thus it was observed by Sydenham, who has left a record of the epidemic that

prevailed in London in the middle of the seventeenth century, for a successive period of sixteen years, including the time immediately before and after the great plague, that a remarkable change took place in the character of fevers and other diseases, approximating the general type of disease in several striking features to the distinguishing characteristics of the pestilence at hand, some months before that dreadful malady assumed its distinct and proper shape, which it did at last quite suddenly.

"A similar observation was made and recorded by Dr. Southwood Smith with reference to the type of fever in London, six months before the visitation of cholera in 1832. During the six months immediately preceding the first appearance of cholera in this country, the character of fever in London so entirely changed, that typhus, which, for a long series of years, had been essentially an inflammatory disease, became a disease of debility so closely resembling cholera, that the fever, into which cholera patients commonly fall, could not be distinguished from the primary fever found in the wards of the Fever Hospital when cholera was, at its height, which had appeared there, for the first time, six months previously, but which has never disappeared since." (p. 421.)

[The actual mode of outbreak is also an argument in favour of the endemic, rather than the epidemic character of the malady. Thus:]

"The history of its progress from Asia to Europe, and through the several countries of Europe, shows that it advanced, not by a strictly continuous progression and uninterrupted course, but that, at one time, it sprang, at a single bound, over a vast tract of country, while, at another time, its course was retrograde. Its progress through a city was similar, there being in general no regular continuity in its course, but its progress consisting in a succession of local outbreaks." (p. 415.)

[This want of continuity in the period of outbreak is evident in regard to time as well as place.]

"For example, on its first outbreak in 1848, cases occurred on the same day at Lasserade near Edinburgh, Sunderland, and Hounslow; on another day at Falkirk, Tynemouth, and Chelmsford; on a third at Greenock, Præstin Kirk, Monkland, Blantyre, Thornhill, and Cambridge; and the like instances might be multiplied to a great extent." (p. 424.)

[From multiplied facts and considerations such as these, the Report of the Sanitary Commissioners is unfavorable to the establishment of *quarantine* for the prevention of cholera, and (as we think) rightly so. The local origin of the disease is established beyond a doubt, but still the old question of contagion is not altogether set at rest. It is quite possible, if not quite probable, that a disease, which has originated in this way, may propagate itself by infection, that is, by intensifying that foulness of the atmosphere which was the primary cause. And, as to the question of contagion, we may mention a recent fact which has some remote bearing on the matter, inasmuch as cholera is a member of the great class of fevers. The great Maternité Hospital at Vienna consists of two divisions, essentially similar to each other, the one devoted to the instruction of female, the other to that of male students. In the latter the mortality, from puerperal fever, was found to be so very much higher than in the former, as to call for the interference of govern-

ment. Some searching investigations were instituted, and the blame was attached to many things erroneously; but at length M. Semmelweis, one of the physician-accoucheurs to the institution, traced it to the dissection of the bodies of those who had died of puerperal fever, in which pursuit the male students exclusively engaged. An order was therefore made that the most scrupulous ablution should be performed, and the hands washed in a solution of chloride of lime, before the duties of the dissecting-rooms were exchanged for those of the wards; and the result was that the mortality became equal on both sides of the establishment, falling at once on the side in which it had formerly been so high, from ten or even fifteen to one per cent. This fact is mentioned in the 'Gazette Médicale' for January, 1851. (Vide 'Abstract,' vol. IX, p. 335.)

3. The third point of which the 'Edinburgh Review' serves to remind us, is the remarkable success of early treatment in cholera. Arguing from the gradual and not sudden outbreak of the disease, the sanitary commissioners very wisely organised a system of house-to-house visitation, the object of which was to seek out the incipient cases of the disease, and administer the appropriate remedies without any delay. This system was carried into effect with the precision of a military movement, by means of students and young practitioners in medicine, and with the most surprising results, as a quotation will serve to show.]

"At Dumfries, with a population of 10,000, before the visitation system was commenced, 147, and before it was in full operation, 250 of the townspeople had perished. On the first three days, during which the system was in partial use, the fresh attacks daily were respectively, 37, 38, 23, and the deaths 9, 6, 9; on the three succeeding days, when it was in full activity, the attacks diminished to 11, 14, 12, and the deaths to 7, 3, 6; and in the following three days the attacks sunk to 8, 4, 2, and the deaths to 6, 4, 5; in three days more the epidemic was at an end. At Charleston, a suburb of Paisley, when the system of visitation commenced, the fresh attacks amounted to 23 daily; on the 4th day after the system was in complete operation, they fell to 3 daily; and in a few days more the pestilence ceased. At the small village of Nordelf, out of a population of 150 souls, there had occurred no fewer than 50 attacks of cholera. At this point the visitation system was introduced, after which only 4 new cases occurred, and these were saved. Out of the large and peculiarly predisposed population of Glasgow, 15,000 cases of premonitory diarrhoea were promptly brought under treatment; of these, 1000 had already advanced to the stage of rice water purging, yet out of this total number only 27 passed into decided cholera. The results were still more striking in the Parkhead district of the Barony parish, Glasgow, where the system of visitation proved that the premonitory cases were to those of developed cholera in the proportion of 3000, 3300, 5900, and even 6000 per cent., and where tracking the pestilence by its invariable sign from street to street, and house to house, and room to room, it arrested its course, and prevented it from passing beyond the premonitory stage. The result was similar in the metropolis, in Manchester, Bristol, and other large towns." (p. 426.)

[Dr. Wynne's conclusions respecting the cholera, as it appeared in the United States of America in 1849-50, are in harmony with those of the Board of Health. He is no believer in pestilential contagion and quarantine establishments. He also thinks there is a striking resemblance between the causes of cholera and of malarial disease.]

"It appears," says Dr. Wynne, "upon a careful and minute examination of all the circumstances connected with the spread of cholera from place to place, that in no single instance is there any evidence furnished by first cases, when the disease could be most easily traced, to show its introduction by direct contagion or personal communication, but, on the contrary, all these circumstances tend to establish the existence of some other and more potent morbid agency.

"In forming an estimate of these facts, it must be taken into consideration that they are the accumulated experience of many observers, looking at the subject under different phases, and frequently with preconceived notions; yet, notwithstanding all this diversity of opinion which must necessarily have existed upon a disputable question, and which they have expressed in a manner too clear to leave room for conjecture, their united evidence, when summed up, goes to establish the fact that the spread of cholera is in nowise dependent upon contagion.

"Many of these observers are, to a greater or less degree, supporters of the theory of the contagiousness of cholera under certain circumstances, and all of them gentlemen of the highest standing in the medical profession. When, therefore, we find them all speaking the same language, we must admit the correctness of the position assumed. The question, as one of the gravest importance, has met with a corresponding share of attention. If the disease be contagious, no expenditure of money or labour can be too great to keep it from our ports, or confine it to particular localities if it unfortunately finds ingress; but if this be not a contagious disease, how much worse than useless would be the adoption of quarantine regulations to oppose its progress?"

"I have collected together, with much care, all the topographical and meteorological phenomena I could procure, in connection with the points in the United States where the disease prevailed, under the impression that they performed a considerable part in its spread. These facts, taken together, appear to establish the positions—1st, that cholera is decidedly amenable to temperature; and, 2d, that it is dependent upon the presence of certain agencies, whose prevention is as much under the power of human reason and industry as the means of preventing the evils of lightning and common fire."

"The disease appeared at New York and New Orleans during the month of December, 1848. Its attack at the former place was decided in its character, but was limited in its influence. From the 60 who were attacked at the quarantine-ground, and who must have been exposed to the morbid agency under which the disease was developed, it did not spread, although it is known that numbers escaped from the

quarantine and went into the city, and that a considerable intercourse was kept up between those who were within the enclosure and persons visiting them from without. In a filthy German boarding-house, containing about 200 inmates, huddled together in the most disorderly confusion, two cases occurred in individuals who had escaped from quarantine. The establishment was broken up, and the inmates scattered over the city, and yet the disease did not follow. A sharp frost intervened; the weather, though mild and temperate, became wintry, and the disease entirely subsided.

"In New Orleans, the month of December, although changeable, and although several white frosts had appeared, was for the most part very warm and damp. 'The streets were as muddy as possible, and the side-walks and walls were reeking with moisture. Heavy fogs overhung the city till late in the morning.' Cases of remarkable bowel affections occasionally occurred, showing, says Dr. Fenner, 'that the epidemic influence of cholera was gradually being matured in our midst.' Several days after these indubitable evidences of the existence of a peculiarly morbid phenomena had manifested themselves, the "Swanton" arrived at New Orleans, and the cholera spread with great rapidity. The temperature, so far from moderating, increased; so that from the 16th to the 22d of December the thermometer rose to 84°, and the air was so liberally charged with moisture as to impart a feeling of oppressive warmth, amounting almost to a stifling sensation. Under this condition of things, the cholera spread with great rapidity. Without entering into detail, let it suffice to say, that the facts in the preceding pages show that the increase and diminution of the disease maintained a strict uniformity with the rise and fall of the temperature; and that upon the appearance of a sharp frost the disease gradually subsided, to renew its attacks with the increasing heat of the following spring.

"In Memphis, from the 20th of October to the 29th of December, with the exception of two or three fair days, it had rained incessantly; the streams were swollen, and the ground saturated with moisture. Conjoined to this uncommon quantity of moisture, the temperature was unusually high for the season, and especially so at the time when cholera made its appearance. The disease was preceded by an epidemic of influenza.

"Although occasional cases occurred at St. Louis, Louisville, and Cincinnati during the winter months, yet it required the heat of summer to produce the elements necessary to develop the disease in all its intensity. In all these localities, and indeed in all of the places visited by cholera, it was found to maintain a remarkable subserviency to thermometric phenomena, increasing with the elevation of the temperature and diminishing with its decline.

"Nor was it apparently less under the influence of moisture than of heat. The reader of this Report has had frequent occasion to notice the combination of a high temperature and excessive moisture in the places visited by cholera; and so universally does this law appear to have prevailed, that he might almost fix upon the relative fatality of the disease in different places, by noting their thermometric and hygrometric conditions. The disease manifested far greater virulence in the

valley of the Mississippi than on the Atlantic coast, and in every place where observations were made it was found that the quantity of moisture was greater in this valley than on the Atlantic border. May not this conjunction of high temperature and moisture, together with the geological characteristics of this interior valley, account for the greater intensity of the disease there than on the Atlantic border?

"The disease usually followed the water-courses, and lingered about the lower grounds upon their banks, seldom extending to the more elevated and drier portions of the places where it prevailed. Its general law, from which there were but few departures, shows that wherever there existed an undrained and marshy or damp locality in a town visited by cholera, united with filth, there the disease was certain to take up its abode, and commit its greatest ravages. So local did it appear in its preferences, that a single street was frequently found sufficient to confine its spread, and in no instance that I am aware of did it prevail to any extent in high and dry positions.

"In all these circumstances, the adjuncts in the production of cholera are found to maintain a striking resemblance to those which produce malarial diseases. If the question was propounded to me—After the collection of all these facts, can you tell what is the nature of the cause that produces cholera? I should unhesitatingly reply that *I could not*. But I should give the same answer if I were interrogated concerning the nature of autumnal fever. It is true I might reply, in regard to fever, that it depended upon the presence of malaria. But what is malaria? It is the decomposition, under certain known circumstances, of vegetable matter. These circumstances are the presence of air, heat, and moisture. Whenever these elements unite in due proportion, fever is produced, but if either be wanting, malaria is not generated. Hence, during the cold of winter and the dryness of midsummer we have no fever, but with the decomposed vegetation of autumn, united with the heat and moisture of that season of the year, fevers prevail. Heat and moisture cannot produce fever; it requires decomposed matter, uncleanness, and filth. These are precisely the circumstances under which cholera makes its appearance, and the reader will have had frequent occasion to observe how much it is under the conjoint influence of elevated temperature and moisture, and how steadfastly it dwells among filth and uncleanness.

"I do not assert that the cause of autumnal fever and cholera are identical, but I do aver that the whole history of the epidemic, as it prevailed in the United States, proves that it cannot exist in the absence of those conjoined elements known to produce fever; and no facts more fully substantiate this position than those connected with its prevalence at the Baltimore almshouse, and its absence in the city as an epidemic. No person will fail to recognise, in the filthy condition in which this establishment was kept, a sufficient cause for disease, and no one can doubt the influence it exercised over the spread of cholera in this immediate locality."

If this position be fully substantiated, have we not the means in our own hands of arresting its desolating ravages? Does not this disease present itself as a teacher as well as a scourge? Every one must

admit the justice of the following observations of Professor Caldwell:—

“Cholera, though a fatal scourge to the world, will, through the wise and beneficent dispensation under which we live, be productive of consequences favorable alike to science and humanity. Besides being instrumental in throwing much light on the practice of physic, it will prove highly influential in extinguishing the belief in pestilential contagion, and bringing into disrepute the quarantine and sanitary establishments that have hitherto existed.”

“If these facts should prove to be true, and if they arouse the public authorities of large towns to the immense responsibility under which they hold their offices, these pages will not have been written in vain.”

ART. 4.—*On the Arrest of Typhus Fever by Cinchonism.* By ROBERT DUNDAS, M.D., Physician to the Northern Hospital, Liverpool.

(1. *Monthly Journal of Medical Science.* 2. *Dublin Quarterly Journal of Medicine.* 3. *Lancet.*)

[In our last volume (p. 258), we gave an account of Dr. Dundas's views upon the efficacy of large doses of quinine in continued fever, and of the reception they had then met with among the medical public; and now we recur to them in order to add the evidence which has accumulated since that time.

1. First of all, then, we find an article by Dr. Dundas in the ‘*Edinburgh Monthly Journal of Medical Science*,’ in which there is a quotation from a letter by Dr. Graves of Dublin, dated March 22d, 1852, the purpose of which is, that the treatment of fever by cinchonism had been tried in one of the Irish Hospitals at his (Dr. Graves's) request, and with success. After this follows a letter from Dr. Richard Kelly, Physician to the Drogheda Fever Hospital,—the gentleman who carried out Dr. Graves's wishes, which letter runs thus:]

“Drogheda; April 3d, 1852.

“With regard to your original treatment of typhus fever, I must acknowledge myself a convert, as I have treated eight cases of the most severe description with the happiest results.

“I shall, however, enter into details of one of the most severe cases under my care.

“A poor farmer, named Pentony, aged 55, was admitted into hospital 16th February, had been ten days previously ill. The pulse was 120; the tongue dry and brown; he had constant muttering delirium. The respirations were 40; the skin covered with maculæ; the temperature 90°. He had involuntary discharges, and subsultus tendinum.

“In two days after the administration of quinine (according to your directions) he was convalescent, and left the hospital in excellent health ten days after.

“In my opinion, such a happy result could not have been procured by any other treatment that I am aware of.

"In three of the fore-mentioned cases, four members of the families died in the houses from which my patients were removed; and in one case, the patient had been afflicted with chronic bronchitis for years, but it did not militate against the treatment.

"Trusting that such an invaluable improvement may be adopted by the members of the profession, and that my humble testimony may be of service in the trial of it, I remain, &c. R. KELLY."

"To Dr. Dundas, Liverpool."

[In this article, also, Dr. Dundas gives an extract from a letter from Mr. T. B. Gildersleeves, Union Medical Officer of Liverpool, in which the particulars of three successful cases are related.

2. In the next place, we find an article in the 'Dublin Quarterly' by Dr. John M'Evers, from which we shall borrow freely. Dr. M'Evers thus writes:]

"Immediately after having become acquainted with Dr. Dundas's views on this subject, several persons labouring under bad maculated typhus were admitted into our hospital, which gave me opportunities of testing the value of his opinions; and I must confess that I pursued the inquiry with much doubt, as I looked on some of the cures related by him to be of too marvellous a kind to justify my adoption of this treatment without further confirmation of its value; however, I have now tested the remedy in nine cases, and, with the exception of one, it has been signally successful. The first of these cases was the following, the notes of which I take from the daily reports of the hospital.

"Pat Ryan, aged 28, a labourer, was admitted into the hospital on the 1st of January, 1852, from Hop Island. His urgent symptom is headache; pulse 100; tongue foul; skin hot; had taken purgatives at home, and was treated since admission in the usual way with salines, ablutions, &c., until the thirteenth day of his illness, when the usual symptoms of bad typhus became apparent. On the previous day his skin was mottled, and now the entire surface has assumed a dusky hue. Pulse 112, feeble; tongue parched, with sordes on the teeth and lips; no sleep; bowels free; some general fulness of abdomen, with epigastric tenderness; kidneys acting; headache increased, and raves a good deal. He was ordered to take ten grains of sulphate of quina every second hour, and to have broth and four ounces of port wine.

"The changed condition of this patient at my next visit was most remarkable; the pulse was considerably reduced; the tongue was moist and cleaning, in fact it had lost the dark colour and parched appearance it presented the day before. The man slept; there was less abdominal fulness and tenderness; the kidneys acted well, and the bowels were free. He took sixty grains of quina without its having produced dizziness or tinnitus aurium. The medicine was given in the form of mixture with a little sulphuric acid,—the two or three last doses sickening him a little. I then ordered it in the same dose in the form of pills, repeating it every three hours, which he bore without sickness. On this day he took forty grains, and on the following day he was convalescent. It is remarkable that the father of this patient, who was admitted a few days before, passed through

the same type of fever, treated in the ordinary way, and died on the fifteenth or sixteenth day of his illness.

"The second case was that of a young man, aged 19, admitted on the 14th January, for some days under my care, whose urgent symptom was headache, with great prostration of strength. On the eighth day his breathing became very much hurried, unattended, however, with cough, nor did the stethoscope elicit any abnormal sound; the man being remarkably pallid, except during two short exacerbations which occurred in the twenty-four hours. I ordered him aromatic spirit of ammonia mixture, with a small quantity of wine, and a sinapism to his chest. The following morning, on examining the chest, I discovered a purple patch occupying the part to which the mustard had been applied. His respiration was improved, but he complained of intense headache. Pulse 108, and feeble; no sleep. The purple patch induced me to a careful examination of his body, and on turning him in the bed I observed the lower portion of the back and the nates covered with purple maculæ. The case I looked on then as well adapted for the administration of quina, and, accordingly, I ordered ten grains every two hours, together with broth, and two ounces of port wine. The third dose produced violent headache, with tinnitus aurium, when the medicine was discontinued. At my next visit, on the following morning, all his symptoms were improved; the tinnitus aurium left him in a short time after the medicine was laid aside, and the headache was greatly mitigated; he slept, and expressed himself much better. I placed him again on the quina, when the third dose produced the same results as yesterday; but there was so great an amelioration of all his symptoms that I considered him proceeding to convalescence, and gave him only two grains of quina three times a day, after which he rapidly recovered.

"The next two cases were females, both of whom presented unfavorable symptoms, and in whom the remedy was equally successful.

"The fifth case was one of great interest, exhibiting other symptoms of an unfavorable nature, in addition to those enumerated in the preceding.

"John Eames, aged 55, a smith, was admitted on the 23d of January, with bad typhus, having been discharged from hospital on the 3d inst., cured of ordinary fever with bronchial complication. On the ninth day of his second attack he became mottled and talked incoherently; on the tenth day he was not improved; he had no sleep; the tongue was parched and dark, and protruded with difficulty; stools involuntary; pulse 120, and feeble. He was ordered to take ten grains of sulphate of quina every second hour, and to have broth and two ounces of port wine.

"Half-past 9, P.M.—The quina was commenced at 1 o'clock; he has taken fifty grains, and appears improved in every respect; he is more collected and speaks with less difficulty; he has had two large voluntary evacuations from the bowels; the medicine was directed to be continued.

"On the 11th day, I found that he had taken sixty grains since my last visit; and although he did not sleep much, and had some singultus

in the night, he was much improved in other respects. The pulse had come down to 100; the tongue was still parched and brown, but he was perfectly conscious; he was very deaf, and the maculae were improved in colour. On this day he took only four doses of quina, it having been omitted on account of the 'buzzing,' as he expressed it, which the remedy produced.

"12th day.—Pulse 96; tongue moist and cleaning; bowels open, and he passes water freely; to take five grains of sulphate of quina every fourth hour.

"13th day.—Pulse 84; tongue clean; skin cleaning and scaly; convalescent.

"I will not occupy time with the details of all the cases in which I have tried this remedy, but will content myself with the recital of one more case, which occurred within the last few days, and which I consider in every way worthy of observation.

"Mary Delany, aged 22, admitted from Ballincollig on the 10th of March; 9 days ill; headache; petechiae; pulse 120, and very feeble; tongue parched; got the usual aperient of the hospital.

"10th day.—One stool; pulse 130, feeble; tongue parched and split; great thirst; respiration hurried; had no sleep; she is often flushed, and in the intervals deadly pale; countenance anxious, with the appearance of suffering; great fulness of abdomen, with tenderness on pressure, especially at the epigastrium; maculae of a dark brown. She was ordered ten grains of sulphate of quina every second hour, and to have broth and two ounces of red wine.

"11th day.—Bowels not open; tongue moist and cleaning; pulse 100; kidneys acting.

"12th day.—At 8, p.m. last evening, this girl became very stupid; 'did not know what to do with her head,' as she expressed herself; she also became deaf, and had tinnitus aurium; this state continued until midnight, with occasional sleep, when she became 'lighter,' and afterwards slept well; the kidneys have acted, but there is no discharge from the bowels; she now presents a totally different appearance from that of yesterday; she is free from headache, her respiration is natural, the tension and fulness of belly have disappeared, but there is still some slight epigastric tenderness; some of the maculae have disappeared, and the remainder are of a lighter colour. The sulphate of quina to be continued every fourth hour.

"13th day.—No stool; tongue clean and moist; pulse 84; belly natural; slight epigastric tenderness. The quina to be omitted; broth and wine to be continued; to have a domestic enema.

"14th day.—Convalescent."

3. [In the third place we have an article in 'the Lancet,' by Mr. J. W. Hayward, of Liverpool.]

"In a practice, private and parochial, (writes Mr. Hayward,) of which I have had charge for some time, at the south end of this town, I made particular observations on eighty successive cases of fever of the typhoid type; and I found the first symptom, in twenty of them, was diarrhoea; in twelve, diarrhoea and vomiting; in seven, vomiting alone; the rest began with pain in the head. All had pain in the head afterwards; sixty-six describing it as 'lightness,' fourteen as

'heaviness.' All had tenderness of abdomen—nine to a great extent. Seventy-one complained of soreness of the flesh over the whole body—some to such an extent that their impression was that they had rheumatism. Seventeen had considerable inflammation of the sub-maxillary glands. Seventy-three had delirium, twenty-one of which were very severe. In all, the tongue became very dry, brown, hard, and cracked; the first crack was generally a deep, longitudinal one down the centre of the tongue, (even whilst it was clammy and velvety in appearance, and of a milk and water colour,) extending from the base to nearly the apex; then many transverse and oblique ones. In twenty-four, the skin became rough and brown, with petechiæ observable. In all, the thirst was intense; and the other symptoms of fever were not less evident; therefore suffice it to say, they were well marked cases of fever of the typhoid character.

"In twenty-seven the treatment was commenced in the 'first stage;' in fifty-three, in the 'second stage.' Three were fatal. All the rest recovered more or less quickly.

"The principal treatment in all except one was the use of disulphate of quina,—so much recommended by Dr. Dundas, of this town,—of course modified according to the predominating symptoms. Thus, if I found the pulse quick, weak, and thready; the tongue cracked, brown, and dry, (rough or smooth;) great thirst and delirium; no appetite; tenderness of abdomen; soreness of flesh, &c., I put the patient upon disulphate of quina, in solution, at once; four or five grains every two hours. If great restlessness, and no sleep, I added three or four minims of tincture of opium to each dose. If general sinking of vital powers, some wine or brandy, with beef-tea. If the solution of quina were vomited, it was given in an equal quantity of wine, or wine and water. If the patient continued sinking, I increased the quantity of quina, but never had occasion to extend beyond seven grains per dose. When ringing in the ears occurred, the quantity was decreased, but still kept up till there was a good appetite. If the delirium was intense, the pain in the head described as heavy, (which were always strong subjects, whose bowels were confined,) with strong pulse, a dose of chloride of mercury, and sometimes a blister to the nape of the neck. If tenderness of abdomen was great, a few leeches, or sinapism. If vomiting, a sinapism over the stomach. If diarrhœa, a little calomel and opium, or diacetate of lead and opium; though this symptom sometimes required nothing more than the tincture of opium given with the quinine.

"In seventy-nine cases marked improvement was observable in the course of twelve hours; the pulse was the first to improve, then the delirium to give way, then the pain in the head, the thirst, the soreness of flesh, tenderness of abdomen, dryness of tongue, and the appetite to improve. A pulse of 120, small and thready, would become 90, softer and fuller; and in the majority of the cases the pain in the head and delirium ceased entirely in the same period, and a rapid improvement followed; with the small exception of two cases of children ten and eleven months old, neither of whom had the medicine regularly, and both were complicated with bronchitis. The eightieth case was that of a woman, in which quina was not used. These three

died, evidently from typhus. If the typhoid symptoms were allowed to become well marked, and the patient to sink much, his recovery was slow, and he required wine or brandy. I feel confident, from personal observation, that were the disulphate of quina to be used promptly, and to cinchonism, the mortality even of typhus itself would be very small.

"P.S.—The practice alluded to is that of Dr. Whittle, who wishes me to make this communication to you."

[4. On the other hand, Professor Bennett has taken up the subject, and read a paper at the Edinburgh Medico-Chirurgical Society, in which he expresses opinions unfavorable to Dr. Dundas's views. He had tested these views in eight instances. In seven of these, the quinine was given, until its physiological action was well marked without cutting short the progress of the typhus, or ameliorating the symptoms; in the eighth, the effects were positively injurious by aggravating the cerebral symptoms. In the discussion which followed the reading of this paper, Dr. Robertson stated that he also had tried *cinchonism* in eight cases, and with the same want of success, and Dr. Christison said he had failed in a single instance in which he had tried it.]

ART. 5.—*On the Employment of Common Salt in the Treatment of Intermittent Fever.* By W. P. LATTIMORE, M.D., U.S.

(From the *American Journal of Medical Sciences.*)

[In this paper Dr. Lattimore tells us that he has seen seven cases of intermittent fever under the care of M. Piorry, in which the cure was rapidly brought about by the administration of common salt,—and three cases of failure. In two of these failures quinine was tried, successfully in the one and not in the other; in the third it was not tried. Dr. Lattimore seems to entertain no doubt as to the beneficial efforts of this plan of treatment, but is wishful that more evidence should be accumulated on the subject.

The plan practised by M. Piorry is to give half an ounce in a cup of thin soup during the apyrexia and fasting, and to repeat the dose the next day, and then a third time after an interval of a day. He tells us, however, that the remedy will be inefficacious if there is not a perceptible diminution in the size of the spleen immediately after the first dose—a rule more readily given by M. Piorry than followed by those of ordinary ears and fingers.*]

ART. 6.—*A compendious History of Smallpox, with an Account of a Mode of Treatment, constitutional and local, which renders the Disease comparatively harmless, and prevents those Deformities occasioned by Ulceration of the Skin.* By HENRY GEORGE, Esq.

(London: John Churchill, Princes Street, Soho.)

[Mr. George complains that his views have not received the attention they are entitled to, and, we think, rightly so, though it does not

* Salt was originally proposed as a substitute for quinine in a memoir presented to the French Academy of Medicine in June 1830, by Dr. Scelle Montdezest.

do to be over-sensitive in these matters. His views, indeed, as to the asthenic character of the constitutional symptoms in the majority of cases, and the consequent unsuitability of depleting and depressing measures, meet with our entire concurrence; and if we do not so warmly assent to this plan of combating the cutaneous mischief by calamine, or by cotton wadding well sprinkled with powdered camphor, it is only because we seem to have a more effectual and more convenient resort in the local application of collodion, (first suggested by Dr. Ranking,) or gutta-percha. Mr. George's views, however, are well deserving of attention; and we gladly afford our aid to give them publicity, referring to his book for all detailed information.

The following quotation will afford such information as our space allows:]

"In confluent smallpox," says Mr. George, p. 79, "I believe it to be fraught with dangerous consequences to characterise the constitutional disturbance as fever, as I consider that antiphlogistic remedies are, from the commencement, positively contraindicated, that the action of the arterial system in this disease requires to be sustained in order to its being equalised, and that any increased excitement in the progress of the malady is to be combated upon this principle, and not encountered by the use, or any modification in the use, either of the lancet or its equivalent. I cannot be understood to say, if called upon to attend a case of smallpox at its commencement, in which I found the pulse strong and contracted, &c., together with other marks of the existence of an inflammatory diathesis, that I would not bleed; such cases I should regard as exceptions to the general rule, and, I believe, seldom, if ever, to be met with; but even in such instances I should still proceed with the utmost caution, and keep a clear remembrance in mind of the general character of the disease; for brief, very brief, in my opinion, are the moments in which we can, with any degree of safety, have recourse to evacuants of any kind.

"On the comparative merits of different medicines, I have not pretended to have arrived at any positive conclusion; those which I selected are mentioned in the cases detailed at the end of this work; and that others might be chosen from the same class, which would be found equally, if not more efficacious, I am willing to acknowledge; that to cover the surface of the body, on the commencement of the disease, is to prevent the painful tumefaction of the common integuments, and in no trifling degree to control the violence of the local inflammations; that when the pustules are fully ripened, you may, by partially destroying the cuticle of each, completely heal them,—the attached cuticle shrivelling, and in a few days falling off, leaving the skin perfectly smooth; that unless the surface is again covered with the powder, an incrustation forms on the site of each pustule, which, on being removed, exposes a slight depression, that I have strong reason to believe in time wears away; that where from neglect of this practice at the commencement large portions of exposed cutis are to be met with, they also may be healed in the space of a few hours, or at least completely deprived of their sensibility, by this application."

[This local treatment, according to Mr. George, calms present suffering, averts secondary fever, and prevents ulterior deformity.]

ART. 7.—*On Belladonna as a Prophylactic in Scarlatina.*

(1) By Dr. ANDREWS, U. S., and (2) Dr. PORCHER, U. S.

(1. *American Journal of the Medical Sciences.* 2. *Charlestown Medical Journal.*)

[Dr. Andrews's communication appears in the 'American Journal of Medical Sciences.' It is as follows:]

"The efficacy of belladonna, as a prophylactic in scarlatina, has been the subject of a good deal of controversy, and the following facts may therefore be interesting, as a contribution towards the settlement of this question.

"The scarlet fever manifested itself here in November last for the first time, as an epidemic, for twelve years. There was therefore no lack of material for its ravages. The general experience was, that in the families in which it manifested itself, few members who had not previously been subjects of attack, and especially few children, escaped. When the epidemic was at its height, I commenced the use of the English extract of belladonna, in the manner recommended by Dr. Mitchell, in the 3d vol. of the Transactions of the American Medical Association; I prepared a considerable quantity of the mixture, and at once distributed it to some eighty children, including all those properly belonging to my diocese, who could probably be exposed to the infection. Of these *one only was attacked with scarlatina*. Among the noticeable circumstances attending this trial, it is proper that I should mention two or three.

"Sarah S— aged 11 years, the case just now excepted, had commenced the use of the belladonna but about four days before her seizure. The period of incubation of scarlatina is said to range from two or three to twelve or fourteen days. It is altogether supposable that the poison was already in possession, when she commenced the use of the prophylactic. Her constitution is a decidedly scrofulous one, she having suffered severely and protractedly at different times with strumous ophthalmia, ozæna, otitis, and glandular enlargements. Her attack, however, was an unusually light one. Her brothers and two sisters, with two other children residing close by, and whose frequent visits rendered them almost as of the same family, continued the belladonna, and all escaped.

Sarah Dunn, aged 12, was taken from the county almshouse into the family of Mr. S—, on the seventh day of the convalescence of Sarah S—. Hitherto she had not been exposed to the infection. The use of belladonna was neglected in her case, and in about two and a half days after her entrance into the house, she was seized with scarlatina, and removed to the county house. There were at this time six children in the house, whose ages ranged from 2 to 7, and from the crowded state of the establishment, all attempts at isolation were useless. I placed all of them immediately upon the use of belladonna, and though constantly in the vicinity of the patient, not one was attacked.

"Mr. M—, the father of four children, had the symptoms of incipient scarlatina, and the children at once commenced the use of belladonna. The father had a moderately severe attack, but all the children escaped.

"This is my mite towards the settlement of this vital question; it is a vital question, and *may be* settled. I am aware of the difficulties which surround the full and complete establishment of almost any fact in therapeutics; of the fallacies which environ medical experience and observation; and especially of the capriciousness evinced by scarlet fever in regard to the subjects of its attack; but I would respectfully submit that the inestimable benefit which would follow the establishment of this fact, if fact it be, would amply repay for the outlay of time and labour bestowed upon it. As regards the above, it is true that 'one swallow does not make a summer,' neither does one fact establish a general principle, yet a careful collation of cases in which an undoubtedly pure article was used, by the profession generally, would soon set this matter at rest. No authority, however high, should deter from such experiments by the promulgation of the dogma that 'no experience of a merely negative character can be regarded as of much weight when contrasted with such positive experience as is on record.' The carrying out of such a principle into practice would throw us back upon medical prophylaxis as it was 100 years ago, and the world would again be desolated by variola.

"P. S.—The epidemic has fully subsided in this vicinity; and I beg to add the following item as completing the lesson which I have learned during its progress, in reference to the prophylactic powers of belladonna.

"The family of the Rev. Mr. S— visited some friends in this village, just as the scarlatina was taking its leave. In a few days after their arrival, two of their three children were brought down with the prevalent disease. The family of Mr. C—, which they were visiting, had already been on the use of ex. belladonna, and the youngest to the production of scarlatinoid eruption. Segregation was impossible, and so it was scarcely and only at first attempted. The children, five in number, with ages ranging from 9 months to 17 years, were freely and fully exposed, every day, excepting, as before stated, a very short time at the first, and then most imperfectly. Every one escaped.

"The—to me—interesting point in this case is the seemingly permanent character of the prophylaxis. The children of Mr. C— had not taken the extract for some four weeks preceding, and did not resume its use when the danger seemed thus imminent."

[Dr. Porcher's paper appeared in the 'Charleston Medical Journal,' and its substance is thus abstracted in the 'British and Foreign Medico-Chirurgical Review.']

"In this paper Dr. Porcher presents his readers with an analysis of the various opinions which have been published upon this subject, (the influence of belladonna in scarlatina,) since they were summed up in the 2d vol. of 'Bayle's Bibliothèque de Thérapeutique.' This survey has necessitated the survey of some hundreds of volumes; and Dr. Porcher believes that a dispassionate consideration of the subject necessarily leads to a conclusion decidedly in favour of the prophylactic power of this substance. 'However some may consider the evidence of a negative character, and therefore unworthy of confidence, yet from its cumulation, from the careful way in which

some observers conducted their inquiries, and from the possibility of failure being owing to the use of an inferior or badly-prepared drug, we cannot but conceive that to discard it as utterly indecisive, would be indulging a spirit of irrational incredulity, leading to the rejection of any amount of merely presumptive proof."

(C.) RELATING TO DISEASES OF THE BLOOD.

ART. 8.—*New Researches on Hæmatology.*

By MM. A. BECQUÉREL and A. RODIER.

(*Gazette Médicale de Paris.*)

[The following are the conclusions of a long series of observations upon morbid changes in the blood, which have been recently communicated to the Academie des Sciences, and reported in the above-named journal.]

1st. In the majority of chronic maladies, and in various other unhealthy conditions, there is some increase or diminution in the normal proportions of the three principal elements of the blood—the globules, the fibrine, and the albumen, and this in a single, double, or triple order.

2d. The *globules* diminish in number in the course of most protracted chronic disorders, and especially in organic affections of the heart, the chronic form of Bright's disease, chlorosis, marsh-cachexy, hæmorrhages of various kinds, excessive bloodlettings, the last stages of tubercular disease and the cancerous diathesis. The globules disappear equally in those who are sunk in the depths of poverty, and exposed to the conjoined evil of bad and insufficient food, and of dark, damp, and ill-ventilated dwellings.

3d. The *albumen* of the serum of the blood diminishes, among other instances, in Bright's disease, the marsh-cachexy, advanced heart disease, great symptomatic anæmia, and in the state of ill health induced by cancer and by poverty.

4th. The proportion of *fibrine* is unaffected, or slightly augmented, in acute scorbutus; but diminished in the chronic malady, especially in that symptomatic form which often complicates permanent heart disease.

5th. In all the cases already mentioned the quantity of *water* contained in the blood is considerably augmented.

6th. The more prominent signs of a diminution in the number of the globules are the following:—discoloration of the skin, palpitation, dyspnœa, *bruit de soufflet* at the base of the heart during its first sound, an *intermittent bruit de soufflet* in the carotids, and a *continuous one* in the jugulars.

7th. A rapid, though slight, *diminution in the quantity of albumen*, is marked by acute dropsy. A more gradual diminution is followed by the same symptom, but in this instance the loss must have been much more considerable than in the former one. Dropsy, in fact, is the characteristic sign of a blood deprived of its natural amount of albumen.

8th. A diminution in the normal proportions of *fibrine* is followed by hæmorrhage of one kind or another—mucous or cutaneous.

9th. In the *anæmia* which is symptomatic of copious hæmorrhage, starvation, or exhausting discharges, the blood is less dense and more watery than natural, the globules are diminished in number, and the albumen and fibrine unaffected, or the former slightly wanting.

10th. In *chlorosis*, which is an affection distinct from anæmia, the blood may be unchanged. If it is changed, it has fewer globules and more water, and a natural or somewhat augmented proportion of fibrine and albumen.

11th. In *acute Bright's disease*, the globules and fibrine remain unaltered, and the albumen is wasted. In the *chronic* affection the globules, as well as the albumen, are deficient, and not unfrequently the fibrine also, though to a less extent than the others.

12th. Most of the idiopathic *dropsies* are due to a want in the normal quantity of the albumen of the blood.

13th. In *fatal diseases of the heart* the blood progressively becomes more and more impoverished in its three elements of fibrine, albumen, and globules, while at the same time it is rendered much more watery.

14th. In *acute scorbutus* the blood presents no appreciable alteration. In the *chronic* affection the blood is notably deficient in fibrine, while the globules are, sometimes at least, considerably increased.

15th. These facts should exercise a great influence in practice, as we possess the means of acting upon the element which may be wanting or changed. A tonic plan of treatment will be required when each of the three elements is deficient, combined with quinine, steel, or acids, according as the deficiency may be in the albumen, globules, or fibrine—one reason of the indication of acids in the latter case being the presence of free soda in the blood when the fibrine is deficient.

ART. 9.—*Increase of Blood Fibrin not always indicative of Inflammation.*

By M. F. HUTIN.

(*Gazette Médicale de Paris.*)

In 1840 M. Hutin read a paper before the Academy des Sciences, one of the objects of which was to show that increase of blood fibrine is not always indicative of inflammation; and again in the present year, he makes a second communication to the same learned body, pointing out how his previous conclusions are confirmed by the recent researches of MM. Becquerel and Rodier.

These researches go to prove that in chlorosis and anæmia, which are the very opposites of inflammatory affections, the fibrin is increased in the one to 5.01, in the other to 5.82. They go to prove, also, that there is a similar increase in passive dropsies to 5.55, and in chronic Bright's disease to 6.50, while at the same time it is mentioned that in acute Bright's disease, where there is often much febrile and inflammatory disturbance, there was no increase of the fibrine. An increase, independent of inflammation, is also noticed in pregnancy.

The absence of inflammatory symptoms in all these cases is remarked upon by MM. Becquerel and Rodier, as if ignorant of M. Hutin's observations.

[The facts which M. Hutin originally cited in support of his opinion were gathered from the history of scrofula, phthisis, and gout. His evidence, therefore, was imperfect until it was fortified by that derived from MM. Becquerel and Rodier's recent investigations, for any one disposed to be sceptical might readily ascribe the increase of blood-fibrin in scrofula, phthisis, and gout, to the inflammatory troubles which often complicate these affections. Hence, we suppose, the little attention which has been paid to M. Hutin previously.]

ART. 10.—*On the Distinctions existing between Chlorosis and Anæmia.*
By MM. BECQUEREL and RODIER.

(*Gazette Médicale de Paris.*)

[In their investigations in Hæmatology, which have been alluded to in a preceding article, MM. Becquerel and Rodier enter at considerable length into the distinctions existing (as they suppose) between chlorosis and anæmia. These distinctions are set forth under the following heads:]

1. *Causes.*—Chlorosis is an affection peculiar to the female between the age of 15 and 25, and its ultimate cause is altogether unknown. Anæmia, on the contrary, affects either sex indiscriminately, is confined to no particular time of life, and is always the consequence of one or other of the many causes which exhaust and debilitate the vital powers.

2. *Mode of Development.*—Chlorosis appears mysteriously, and without assignable cause; not so anæmia.

3. *Symptoms.*—Chlorosis is infinitely more marked by nervous derangement—perverted and otherwise disordered feelings, movements and sensations—than anæmia.

In chlorosis the skin is of a greenish-yellow tint,—in anæmia it is pale and blanched.

In chlorosis the catamenial function is almost invariably deranged; in anæmia (except in those cases which originate in uterine disease) this is by no means the case.

In chlorosis, as a general rule, palpitation and dyspnœa are far less marked than in anæmia.

4. *Physical Signs.*—The distinctions between the various cardiac and vascular bruits of chlorosis and anæmia are by no means clear. Still it would appear that the bruits at the base of the heart and in the course of the large arterial trunks, which are always present in anæmia, are not so in chlorosis; while, on the other hand, venous murmurs and musical bruits are more frequent in chlorosis than in anæmia.

5. *Composition of the Blood.*—In marked cases of chlorosis, the blood has fewer globules and more water, and a natural or somewhat augmented proportion of fibrin and albumen; in confirmed anæmia the blood is more watery, the globules diminished, and the albumen and

fibrin unaffected, or the former slightly wanting. In chlorosis these changes are *not* always in relation to the intensity of the general symptoms; in anæmia they always are so related.

6. *Progress and Duration.*—Chlorosis is more uncertain and obstinate in its course than anæmia.

7. *Treatment.*—Chalybeates are indispensable to the cure of chlorosis, but to the cure of anæmia all that is wanted is the suspension of the exhausting influence, and the supply of good food and other natural measures.

ART. 11. — *On the Use of Manganese as an Adjuvant to Iron, by M. PÉTREQUIN, followed by some Formularies for its Administration, by M. BURIN DUBUISSON.*

(*London Journal of Medicine; and Bulletin Générale de Thérapeutique.*)

M. Pétrequin quotes various authors to prove that manganese is a normal constituent of animal and vegetable tissues, and believes that wherever iron is present in appreciable quantity, manganese coexists with it. Hence iron alone will not always succeed in blood-diseases. M. Pétrequin has observed many cases of chlorosis, which have resisted iron as obstinately as anæmia, connected with cancer or organic degeneration. Other cases again, after deriving a certain amount of benefit from iron, remain stationary. Others again appear cured by iron, but the cure is not permanent. The remedy required in these cases M. Pétrequin finds to be manganese. He does not give it or iron alone, but combines them.

It is especially in *diseases of the blood* that ferro-manganic medicines are useful. They have a special action on the vascular apparatus, on the formation of the blood, and on the circulating fluid itself. They do not act merely as tonics or astringents; but are regenerators of the blood. They have succeeded admirably in anæmia following hæmorrhage, operations, polypi, metrorrhagia, &c.; also in the chlorosis attending puberty, which is a more common disease than is generally supposed, and occurs even in males. M. Pétrequin has also frequently found the combinations of iron with manganese of benefit in the diseases of women at the critical period. He has often seen, in these subjects, *metrorrhagia*, accompanied with an aspect of the surface which would lead to the suspicion of organic uterine disease: the hæmorrhage, however, was but a complication, and the patients, apparently in a hopeless state, have recovered under the use of ferro-manganic preparations, conjoined with tonics and ergotine.

In *amenorrhœa* and *dysmenorrhœa*, the patients often imagine that they require to be bled; but care must generally be taken not to comply with this request. M. Pétrequin has more than once seen cases of amenorrhœa with severe chlorosis, in which it has not been desirable to hasten the appearance of the catamenia,—the consequent loss of blood aggravating the disease. The general state of health must here be carefully attended to. Oedema of the lower limbs sometimes occurs in these cases; but it is a less severe complication than when it attends

metrorrhagia. It often disappears, as the patient recovers, under the use of iron and manganese.

These medicines are no less efficacious in the treatment of *anæmia* resulting from prolonged intermittent fevers, prolonged suppuration, strumous, syphilitic, or cancerous affections, phthisis, &c. Pills and the syrup of the iodide of manganese and iron are preferable in these cases.

In all these cases, the ferro-manganic preparations do not merely act on the stomach and nervous system, but they are absorbed, and assist in the formation of hæmatosine and new blood-globules, so as to restore the blood to its normal condition. Their effect in this way is greater than that of iron alone.

In the *functional affections of the heart* connected with chlorosis and anæmia, and which must not be mistaken for organic disease, a combination of iron and manganese, with digitalis and other moderators of the heart's action, is advantageous. The same remark applies to the *functional disorders of the lungs*, attending the same constitutional states.

Disordered states of the nervous system are intimately connected with those of the blood. M. Pétrequin has found that the ferro-manganic preparations succeed well in these, even though uncomplicated with chlorosis. He, as well as M. Gubian, has observed that iron is here better tolerated when combined with manganese. He has also seen benefit from the use of iron with manganese in many cases of *dyspepsia*, *gastralgia*, and *gastro-enteralgia*. Nervous affections of the digestive organs are often the result of chlorosis; and, where stomachics and cinchona have failed, iron has often been found (especially the carbonate, by some English physicians,) to be of service. *Gastrodynia* complicating chlorosis has often yielded to the use of ferro-manganiferous water, and to pills of carbonate of iron and manganese.

In *nervous affections connected with exhaustion* from venereal excesses, onanism, rapid growth, &c., as well as in leucorrhœa, diabetes, &c., M. Pétrequin has a high opinion of these medicines. He is continuing his researches on their action in certain cases of sterility from asthenia, and in some hyposthenic affections of the scalp, such as early baldness, alopecia, &c.

M. Pétrequin has confined his observations to a limited number of the ferro-manganic preparations; and has made many observations before publishing the formulæ which he finds most useful. Having found, even at an early period, that the medicines were liable to adulteration, he has availed himself of the assistance of competent pharmacutists. Since the publication of his first memoir, in 1849, these medicines have been extensively used in the south of France and in foreign countries.

The formulæ are few, and correspond to the preparations of iron generally used in France. They are: 1, *Pills* of carbonate of iron and manganese, or of iodide; 2, *Lozenges* of lactate of iron and manganese; 3, *Syrups* of lactate or of iodide of iron and manganese; 4, *Ferro-manganic chocolate*; 5, *Effervescing solution* of iron and manganese.

It has been observed that manganese not only preserves water, but

purifies that which has undergone change (Martin-Lauzer). Ferromanganic waters (of which there are many in France and other parts of the continent) can be preserved and carried to a distance;—which cannot generally be done with simple ferruginous waters.

M. Pétrequin commences by giving the powder of iron and manganese, with some vinous drink; he then administers two pills, daily, one before breakfast and one before dinner, replacing them soon by the lozenges. The syrups and chocolate complete the treatment. He gives the medicines at meal time. The syrup he gives before breakfast, in doses of a teaspoonful; and he finds it useful to administer directly after it some infusion of centaury, or of camomile flowers and orange.

Large doses are unnecessary and useless; for they are liable to produce irritation of the stomach and exhaustion of the nervous system; and the reparation of the blood is slow and progressive, and cannot, even were it desirable, be effected rapidly. Besides, the iron and manganese are not absorbed in any greater quantity, if large doses are given.

PREPARATIONS OF MANGANESE AND IRON.

M. Burin-Dubuisson, of Lyons, who prepared most of the ferromanganic combinations used by M. Pétrequin, has published an interesting *brochure*, in which he gives the necessary details relating to the subject. The following formulæ are extracted from it.

Powder for Effervescing Solution of Manganese and Iron.—Take of coarsely powdered bicarbonate of soda, 20 parts; tartaric acid, 25 parts; powdered sugar, 53 parts; finely powdered sulphate of iron, $1\frac{1}{2}$ part; finely powdered sulphate of manganese, $\frac{1}{2}$ parts: mix carefully, and keep in well-stopped bottles. A teaspoonful is mixed with each glass of wine and water drunk during meal time.

Pills of Carbonate of Iron and Manganese.—Take of pure crystallised sulphate of iron, 75 parts; pure crystallised sulphate of manganese, 25 parts; crystallised carbonate of soda, 120 parts; honey, 60 parts; water, a sufficient quantity. Pills of 20 centigrammes (3 grains) are made; they keep easily, without becoming oxidised, in well-closed vessels. From two to four are given daily.

Ferromanganic Chocolate. One part of carbonate of iron and manganese is first mixed with four of sugar, and divided into large lozenges; of these, 100 parts (grammes) are mixed with 500 of chocolate paste, in the preparation of which 100 parts of sugar have been left out. This will make 800 lozenges, each of which contains about 3 centigrammes (nearly half a grain) of carbonate of iron and manganese. The chocolate decomposes the hydrated carbonate of manganese and iron of the saccharate into hydrated sesquioxide of iron and manganese; there is no metallic taste.

Syrup of Lactate of Iron and Manganese.—Take of lactate of iron and manganese, 4 parts; powdered sugar, 16 parts; rub together, and add of distilled water, 200 parts; dissolve rapidly, and pour into a matrass over a water-bath, containing 384 parts of broken sugar: filter the solution. This syrup contains about 15 parts of lactate of

iron and 5 of lactate of manganese in 3000 parts. One or two spoonfuls are taken daily.

Lozenges of Lactate of Iron and Manganese are made by adding 20 parts of the lactate to 400 of fine sugar, with a sufficient quantity of water. The mass will make 840 lozenges; of which six or eight are taken daily.

Syrup of Iodide of Iron and Manganese.—M. Burin-Dubuisson forms a solution of iodide of iron and manganese, in the proportion of one part by weight to two of water: the proportion of the salts is about three of iodide of iron to one of iodide of manganese. Six parts of this are mixed with 294 of simple syrup; of this, M. Pétrequin gives one or two spoonfuls daily.

Pills of Iodide of Iron and Manganese.—Take of the official solution prepared by M. Burin-Dubuisson, 16 parts (grammes); honey, 5 parts; some absorbent powder, 9½ parts. Divide into 100 pills. The honey and the solution are first mixed, and evaporated at first rapidly, then more slowly, to 10 parts. Then add the powder, and divide the mass into four parts, which must be rolled in powder of iron reduced by hydrogen; each of these must then be divided on an iron plate into 25 pills, and again rolled in the iron powder. Finally, they are covered with a layer of tolu, according to M. Blancard's process.

All these preparations must be made very carefully. M. Burin-Dubuisson has ascertained that the commercial salts of manganese frequently contain copper, and even arsenic; he hence insists on the necessity of calcining the sulphate of manganese, twice, or more frequently, at a dark red heat, and of carefully testing the solution.

(D.) RELATING TO ACCIDENTAL PRODUCTIONS.

ART. 12.—On Fatty Degeneration.

(1. *The Lancet*. 2. *Schmidt's Jahrbuch*.)

[Mr. W. Frederick Barlow has been publishing in full in the pages of the *Lancet* the paper on Fatty Degeneration, which he read at the Medical Society of London, at the beginning of the past year, and the abstract of which will be found in p. 269 of our last volume. We would gladly have reprinted these views in the more extended form they have thus received, but we are obliged, for want of space, to content ourselves for the present with the report referred to.

In *Schmidt's Jahrbuch*, also, we find in abstract a long inaugural dissertation by B. S. Shultze, entitled *De adipis genesi pathologica*, and this we have looked over in the hope of finding something which would throw new light upon the interesting problem of fatty degeneration. But we have been sadly disappointed. It is minute and mechanical enough, but, so far as we can see, barren of a single spark of the philosophical spirit which shines throughout the papers of the last-named writer.

More light is to be got from a surgical case of Mr. Erichsen's, in which, on amputation, there proved to be fatty degeneration of the muscles of the leg. This case, it will be seen, quite accords with the

idea that this state is truly one of *degeneration*, for we see, among other things, that the part which had undergone the diseased change was insufficiently supplied with blood and had been long disused—both of which circumstances are of course inimical to its healthy growth and life. We copy the case as exhibiting more than one point of interest in relation to the concomitants of fatty degeneration.]

Eleanor Coles, aged 48, a married woman, of leuco-phlegmatic habit and delicate constitution, began to suffer, in 1838, from a series of abscesses in the right foot. The first formed under the great toe, and, after a time, healed; when others in various parts appeared, and went through a similar course, leaving, however, several sinuses, which did not heal. In June, 1850, a piece of bone came away for the first time, and since then, numerous small portions of the tarsal and metatarsal bones have necrosed and been expelled. Latterly, the condition of the foot has become much worse, the inflammation has extended to the ankle joint; she has suffered very severe pain, which, for the last month, has quite confined her to her couch. During this long illness, extending over twelve years, she has always previously been able to move about, more or less, though she has often spent a whole year without going out of the house. The pain has often been very great, and a constant profuse suppuration has been kept up. The disease has however had many periods of alternate improvement and relapse.

Admitted July 13, 1852.—The whole foot and ankle are much swollen, and the skin exhibits in parts an erysipelatous redness, while in others it is of a dusky and livid hue. There are several unhealthy ulcers, the sinuses connected with which lead down to diseased bone. The foot is extended, and, when forcibly flexed, a grating sensation is produced between the bones of the ankle-joint. She is pale, feeble, and much out of health. Mist. Quin. ℥j; ter. die sumend. Full diet, with porter.

21st.—Her general health has improved since admission, and the degree of inflammation around the ankle has somewhat subsided; but, as there appears no probability of a cure ever being effected, it has been decided to remove the leg. Mr. Erichsen accordingly performed a double-flap amputation in the usual manner. Previous to the operation, it had been observed that her calf was not nearly so much wasted as is usual after long disease; and, on cutting through it, the muscles were found to have lost nothing of their healthy size and contour. The appearance of their section was, however, very peculiar: instead of the red brown colour of muscular tissue, it presented a pale fawn-coloured, and almost waxy aspect. This change was the most complete in the large superficial muscles,—the deeper ones still exhibiting some traces of their original structure. But little hæmorrhage took place, and few ligatures were required. Six hours after the amputation the stump was dressed with sutures and plaster as usual.

24th.—She has been allowed a nutritious diet, with four ounces of wine daily, and is progressing favorably. The flaps have not united by the first intention, but granulations are now freely forming, and there is healthy suppuration. The posterior flap is slightly inflamed.

28th.—There is less of inflammation present, and the amount of discharge is diminished; the process of healing is proceeding very favorably.

29th.—In the night an attack of hæmorrhage, to about two ounces, occurred; it was however easily checked by the application of cold, and no recurrence took place.

August 12th.—During the last fortnight she has progressed very satisfactorily. Her general health has much improved, and the stump almost entirely healed. Her appetite is good, tongue clean, pulse of good volume.

In examining the foot after removal, the bones composing the ankle-joint were found to be denuded of cartilage, and in a carious condition; the whole tarsus was also extensively diseased. The superficial muscles of the sole of the foot exhibited the same peculiar appearances as those of the calf had done. A careful microscopic inspection confirmed the opinion at first formed, that their condition was one of advanced fatty degeneration. The bones of the leg did not appear to possess any peculiarity of structure.

In this case the long disuse of the member had doubtless occasioned the condition in which the muscles were found; yet why it should have produced this peculiar degeneration of structure, and not a simple atrophy, it is difficult to say. The patient's constitution has probably had a share in this effect; she is one of those stout and flabby persons whose tendency, as old age advances, is to "degenerate in quality" rather than to "diminish in quantity." The disease, however, does not yet appear to have affected the tissues generally, as the circumference of the cornea is perfectly clear, and the heart's impulse tolerably forcible.

The presence of the arcus senilis, it is well known, offers no obstacle to the performance of the operation for extraction of cataract, and the above instance affords another proof, that structures in a state of fatty degeneration heal, when wounded, just as readily as more healthy ones.

ART. 13.—*New views concerning the Nature and Causes of Tubercular Deposits.* By MATTHEW TROY, M.D. (U.S.)

(*American Journal of Medical Science.*)

[According to Dr. Troy, "defective action of the skin is the precise cause of tuberculosis. In tuberculous subjects there is a peculiarity, a cognisable anatomical difference of structure from the healthy skin. It seems to be this, that the skin is harsh and dry. Let its texture be fine and white, or coarse and dark, it is uniformly dry and inelastic. It is easily washed clean; dirt does not closely adhere to it. In a word, the *sebaceous secretion is deficient.*"

Hence the sebaceous matter accumulates in the body, and this sebaceous matter is nothing more or less than tubercle.

Dr. Troy employs the usual arguments for showing, that a faulty action of the skin has much to do in the matter which he has taken in hand; but upon the vital question of the identity of sebaceous matter and tubercle, which is to be solved by mechanical and not speculative

evidence, he has less to say than were to have been desired. Upon this question, he says:]

The sebaceous secretion of the skin has not been analysed with sufficient accuracy to determine its precise nature: "It is oil, but not oil alone;" and as little is known of the nature of the solid constituents of the other secretions of the skin. It is, therefore, impossible to demonstrate chemically their identity with tuberculous matter. But enough is known to show a very strong probability of this identity.

Tubercle consists for the most part of minute granules, which either consist of, or are very easily converted into, fatty matter.

"Every gradation may be found between euplastic and aplastic deposits; the cells and fibres which are the representatives of organisation, diminishing in number and completeness, and the material becoming more granular and amorphous, or abounding in fat *globules* in proportion as the deposit is degraded, until in opaque, crude, or yellow tubercle it is altogether aplastic, *consisting of a mere aggregation of granules and fat globules*, with mere traces of the remains of cells."—(William's 'Principles of Med.,' p. 300.)

Here at least we see one of the constituents of this secretion in the deposit; and it is the only one that is known with certainty. It is very probable that this constituent of the sebaceous secretion can at any time be detected in the blood of physical patients:

"The fibrine of the blood presents under the microscope a predominance of *granular matter and fat globules*."—*Id.*, p. 113.

[Dr. Troy afterwards states his views succinctly in the following summary, and this we append in order that he may, as far as possible, carry his own meaning in his own words.]

"I think," says he, "I have shown that the nature and importance of the secretion of the skin are sufficient to give rise by its deficiency of suspension to the accumulation of tuberculous matter in the blood; that in those individuals in whom consumption is hereditary, there is often a congenital deficiency of the sebaceous follicles; that the disease can at any time be produced or aggravated by causes which depress their action; and prevented or relieved by causes which exalt it; that the only well-ascertained product of the secretory action of these follicles is found in large amount in tubercle; and that it is deposited in precisely such situations as we would be led to suppose, upon general principles of physiology, that the retained secretions of the skin would be."

SECT. II:—SPECIAL PATHOLOGY.

(A.) DISEASES OF THE NERVOUS SYSTEM.

ART. 14.—*On the Medical Treatment of Insanity.*

By Dr. FORBES WINSLOW, F.R.C.P.E.

(*The Lancet.*)

[The following extracts from Dr. Winslow's second Lettsonian Lecture exhibit a clear sketch of the practice of the lecturer in the medical treatment of insanity:]

"It is necessary that we should, before being able to appreciate the effect of medical treatment, entertain just and enlightened views as to the CURABILITY OF INSANITY. I now speak from a somewhat enlarged experience, from much consideration of the matter, and I have no hesitation in affirming that, if brought within the sphere of medical treatment in the earlier stages, or even within a few months of the attack, insanity, unless the result of severe physical injury to the head, or connected with a peculiar conformation of chest and cranium, and an hereditary diathesis, is as easily curable as any other form of bodily disease for the treatment of which we apply the resources of our art. It is a lamentable error to suppose, and a dangerous, a false, and unhappy doctrine to promulgate, that the disordered affections of the mind are not amenable to the recognised principles of medical science. I again declare it to be my positive and deliberately formed opinion, that there are few diseases of equal magnitude so susceptible of successful medical treatment in the incipient form as those implicating the normal action of thought. The vast amount of incurable cases of insanity which crowd the wards of our national and private asylums, is pregnant with important truths. In the history of these unhappy persons—these lost and ruined minds—we read recorded the sad, melancholy, and lamentable results of either a total neglect of all efficient curative treatment at a period when it might have arrested the onward advance of the cerebral mischief, and maintained reason upon her seat; or of the use of injudicious and unjustifiable measures under mistaken notions of the nature and pathology of the disease. In no class of affections is it so imperatively necessary to inculcate the importance of early and prompt treatment as in the disorders of the brain affecting the manifestations of the mind. I do not maintain that our curative agents are of no avail when the disease has passed beyond what is designated the 'curable stage.' My experience irresistibly leads to the conclusion that we have often in our power the means of curing insanity, even after it has been of some years' duration, if we obtain a thorough appreciation of the physical and mental aspects of the case, and perseveringly and continuously apply remedial measures for its removal; but I cannot dwell too strongly upon the vital necessity of the early and prompt exhibition of curative means in the incipient stage of mental derangement:

* Principiis obsta: sero medicina paratur
Cum mala per longas convaluēte moras.—OVID.

"In 90 per cent. of the cases of acute mania there is found in the brain and its meninges a state of sanguineous congestion, particularly of the hemispherical ganglia, combined with alterations in the grey nervous matter. In forming an opinion of the actual pathological condition of the cerebral substance, we should remember that, particularly in public asylums, it is a rare occurrence for recent cases to be admitted; that the acute and sub-acute active cerebral conditions have subsided, and the disease has assumed a chronic form before the patient is examined and placed under treatment; consequently many deductions recorded by pathologists have been based upon the study

of chronic, and not of acute, mania. A large per centage of the cases, before admission into our national asylums, have passed through the primary and acute stages, and have probably been subjected to medical treatment. This fact must never be lost sight of in forming our opinion, not only of the nature of the disease itself, but of the medical treatment necessary for its cure. In private practice the acute forms of insanity are often met with; but even with the advantages which the physician can command, of investigating the earlier stages of deranged mind, he often discovers that the mental affection has been allowed to exist and slowly progress for a considerable period, no treatment, either medical or moral, having been adopted for its removal. In the incipient form of insanity, particularly when it manifests itself in plethoric constitutions, had been sudden in its development, is the result of physical causes, and is connected with the retrocession of gout, or is rheumatic in its character, there can be no doubt the nature of the changes induced in the brain is more allied to that of inflammation than that of nervous exhaustion. The attacks from the slow and insidious operation of moral causes, are less likely to be accompanied by active symptoms. In many instances the maniacal excitement is *asthenic* or *atonic* in its character, resembling the delirium of the last stages of typhus fever.

“In regard to the treatment of acute mania, the important and much litigated question at issue among practitioners of all countries, is that relating to the propriety of depletion. Need I direct your attention to the conflicting and contradictory opinions entertained by eminent writers on this important and much-vexed therapeutical point? Whilst some practitioners of great repute and enlarged experience fearlessly recommend copious general depletion for the treatment of insanity, and refer to cases in which this practice has been attended with the happiest results; others, equally eminent, and as much entitled to our respect, denounce the lancet as a most fatally dangerous weapon, and shudder at the suggestion of abstracting, even locally, the smallest quantity of blood. In avoiding Scylla, we must be cautious of being impelled into Charybdis. The error consists in a vain effort to discover a uniform rule of treatment, and attempting to propound some specific mode of procedure adapted to all cases. He who maintains that bloodletting is never to be adopted in the treatment of mania, without reference to its character, its origin, the peculiar constitution of the patient, and the existence of local physical morbid conditions, which may be materially modifying the disease, and giving active development to delusive impressions, is not a safe practitioner. Neither would I confide in the judgment of the physician who would, in every case of violent maniacal excitement, attempt to tranquillise the patient by either general or local depletion.

“In attacks of insanity, when the symptoms are acute, the patients young and plethoric, the habitual secretions suppressed, the head hot and painful, the eyes intolerant of light, the conjunctivæ injected, the pupils contracted, the pulse rapid and hard, and the paroxysm sudden in its development, *one* general bleeding will often arrest the progress of the cerebral mischief, greatly facilitate the application of other remedies, and ultimately promote recovery. In proportion as the

symptoms of ordinary insanity approach those of phrenitis, shall we be justified in the use of general depletion. Although it is only occasionally, in instances presenting peculiar characteristic features—cases occurring in the higher ranks of life, where the patient has been in the habit of living *above par*, and is of a sanguineous temperament—that we are justified in having recourse to the lancet, there is a large class of recent cases presenting themselves in the asylums for the insane, both public and private, in the treatment of which we should be guilty of culpable and cruel negligence, if we were to omit to relieve the cerebral symptoms by means of the local abstraction of blood. It is, alas! the fashion and caprice of the day to, recklessly decry the application of cupping-glasses or of leeches in the treatment of insanity, in consequence, I think, of the slavish deference shown to the opinions of a few French pathologists of eminence, who have, by their indiscriminate denunciation of *all depletion*, frightened us into submission, and compelled us to do violence to our own judgment. The local abstraction of blood is, in the hands of the discreet and judicious practitioner, a powerful curative agent; and yet it is the practice of some men—and men, too, of position—to discard altogether the remedy.

“ I will briefly refer to the kind of case in which the local abstraction of blood will be found most beneficial, if proper regard be had to the temperament, constitutional condition, and the local circumstances modifying the character of the attack. In insanity, when the exacerbations occur at the menstrual period, *ceteris paribus*, leeches to the vulva and thighs, with the use of the foot-bath, and the exhibition of aloetic purgatives, will be attended by the most favorable results. In irregular and obstructed menstruation, the local abstraction of blood will be very serviceable. In suppressed hæmorrhoids, leeches to the neighbourhood of the sphincter ani will greatly benefit in unloading the hæmorrhoidal vessels, and relieve the brain of undue excitement. In cases of nymphomania, leeches to the vulva are indicated, and have been known to greatly benefit. In cases of intermittent insanity, the paroxysm may often be cut short by relieving the overloaded state of the vessels of the head by means of cupping, or the application of leeches. In some instances, I have tried Dr. Wigan's plan, and have applied leeches to the Schneiderian membrane, particularly for the treatment of insanity of early life, and connected with conduct evidently the-effect of cerebral irritation. I have seen this mode of procedure of essential benefit in persons of plethoric constitution and of sanguineous temperament. Occasionally the insanity is found to be associated with active visceral disease, or with hypertrophy, and other affections of the heart. Under these circumstances, when there exists great tenderness over the region of any of the visceral organs, and we are satisfied, by a careful stethoscopic examination, that hypertrophy of the heart is present, leeches applied over the seat of the local mischief, conjoined with other appropriate treatment, will materially aid us in subduing the maniacal affection. In cases of illusions of hearing or of vision, it will often be necessary to apply leeches behind the ears, or over the superciliary ridges. I have known this practice entirely remove the morbid allusions which had been embittering the person's life.

“But apart entirely from the local affections to which I have referred, for the treatment of idiopathic insanity, apparently without any complications, or modified by any of the associated diseases, the careful and temperate local abstraction of blood, when general depletion is inadmissible, will often materially shorten the duration of an attack of insanity, and restore the mind to a healthy condition. I am anxious to record my favorable opinion of this mode of treatment, because I have witnessed so many sad results from an opposite timid and reprehensible neglect of the means placed within our power for the treatment of the varied forms and degrees of mental derangement. Sad consequences have undoubtedly followed the indiscriminate use of depletory measures; the presence of violent mental excitement has occasionally led the practitioner to the conclusion that the disease was of an active character; and in the attempt to allay the undue cerebral excitement by means of antiphlogistic measures, the patient has sunk into incurable and hopeless dementia. But whilst recognising an *anæmic* class of cases, where great excitement is often associated with loss of nervous and vital power, we must be cautious in permitting serious disease to be creeping stealthily on in the brain, no effort being made to relieve the congested cerebral vessels or inflamed tissue, until serious disorganisation has taken place in the delicate structure of the vesicular matter, and the patient is for ever lost. In the treatment of acute mania, the remedy next in importance to cautious depletion is that of *prolonged hot baths*. To Dr. Brierre de Boismont, of Paris, at whose excellent institution I first witnessed the application of this remedial agent, the profession is indebted for reviving a practice which had long fallen into disrepute. In treatment of acute mania, the prolonged hot baths will be found of the most essential service. Dr. Brierre de Boismont has recorded the history of 61 of 72 cases that were subjected to this mode of treatment. Three fourths of this number were cured in a week, and the remainder in a fortnight. The patients remain from eight to ten, and fifteen hours in warm baths, whilst a current of cold water is continually poured over the head; the temperature of these baths is from 82° to 86° Fahr.; the effusions 60° Fahr. Among the therapeutic effects of these baths, Dr. Brierre de Boismont reckons a diminution of the circulation and respiration, relaxation of the skin, alleviation of thirst, the introduction of a considerable quantity of water into the economy, an abundant discharge of limpid urine, a tendency to sleep, a state of repose. This mode of treatment is said to be ineffectual in cases of periodic intermittent mania, in mania beginning with great mental impairment, or associated with epilepsy or general paralysis. The result of my own experience of this plan of treatment has produced a very favorable impression upon my mind, and I think it is entitled to a fair trial in all our public asylums where they admit acute and recent cases.

“In some forms of acute mania it is desirable, as a substitute for depletion, to diminish the activity of the circulation by the exhibition of nauseating doses of the tartrate of antimony; it may be serviceably combined with the tinctures of digitalis and hyoscyamus. This remedy, however, requires careful watching, as it often has been known to suddenly reduce the vital powers to a low ebb, and extinguish life.

It will be found beneficial in proportion to the recent character of the case, and the positive activity of the cerebral circulation. The tincture of digitalis was formerly in great repute as an anti-maniacal remedy; the experience of late years has not encouraged us in administering it in the doses prescribed by some of the old writers; nevertheless, it is a useful agent, and occasionally proves a valuable auxiliary in the hand of the practitioner who carefully watches its operation.

“For the cure of the acute forms of insanity the douche bath has been much lauded; but this remedy is now rarely used in British asylums. I have occasionally seen benefit derived from its exhibition, but it requires great caution in its use. A patient has been subjected, whilst in a paroxysm of acute delirium, to the douche bath, and has sunk almost immediately into incurable idiocy! The physical shock has occasionally been known to produce a good moral impression. For illustration: a patient imagined himself emperor of the world, and would not allow any one to address him by any other title. The immediate application of the douche bath destroyed his idea of royal dignity, and he was willing to admit that he had never been, nor was at any time, a regal personage. A few hours subsequently the delusive impression returned in all its original force; the douche bath was again had recourse to, and a second time the morbid impression vanished; by a series of baths he was restored to sanity, and after his complete recovery, when the particulars of his case were placed before him, he observed, ‘Why did you not whip me, and beat this nonsense out of my head? I wonder how you could have borne with my folly, for I have been guilty of such contemptible arrogance and obstinacy.’ As a substitute for the douche, the shower bath is often used with great benefit, particularly in certain forms of melancholia, associated with nervous depression and general debility. In cases of melancholia, or other kinds of chronic insanity connected with a congested state of the liver, the nitro-muriatic bath will occasionally do much good. In a few instances I have noticed marked benefit from the use of Bertolini’s sedative bath, composed of henbane two pounds, and equal parts of hemlock, and cherry-laurel leaves, well infused in a sufficient quantity of hot water. But the simple hot bath in certain conditions of the nervous system, particularly in some forms of suicidal mania, is of the utmost benefit. A warm bath a short period before retiring to rest, bathing the head at the same time with cold water, particularly if the scalp be unnaturally hot, will often ensure a quiet and composed night when no description of sedative, however potent its character and dose, would influence the system.

“In the early stage of insanity, and throughout its whole course, the bowels are often in an obstinately constipated condition. The concentration of nervous energy in the brain appears to interfere with that supply which should proceed to other structures; consequently there appear to be a want of healthy sensibility in the mucous membrane of the bowels, and an interruption to the peristaltic action of the intestinal canal. There is no class of agents which act so certainly and effectually in relieving the mind when under the influence of depressing emotion, as cathartics. The ancients considered hellebore as a specific in certain forms of melancholia. In the hands of

modern practitioners it has not been found to merit the high encomiums which have been passed upon it. It is important in every case of insanity, but particularly in the acute stages of mental derangement, to act powerfully upon the bowels by means of a succession of brisk cathartics. The bowels are often found gorged with fecal matter, and immediate relief often follows the administration of two or three doses of calomel and colocynth, or of croton-oil. It will often be necessary to assist the operation of the cathartics by means of enemata. In hysterical and some other forms of insanity there is always a disposition on the part of the patient resolutely to resist the calls of nature, and, knowing this peculiarity, we must carefully watch the condition of the bowels, otherwise serious mechanical obstructions may ensue, followed by intractable diseases of the rectum. Insanity is often associated with gastric and intestinal disease, with an irritable condition of the mucous membrane of the alimentary canal; and, in such cases, although it is important to relieve the bowels and prevent them from being constipated, we must bear in mind that the injudicious exhibition of irritating drastic cathartics may aggravate the mental disease, by increasing the gastric and intestinal irritation, and thus do permanent and irremediable mischief. Much injury may arise from the indiscriminate and injudicious administration of cathartics. In insanity associated with menstrual obstructions, it will be necessary to exhibit the class of purgatives known to act specifically upon the lower bowel; consequently aloetic cathartics, such as the compound decoction of aloes, are found of most service in these cases. In plethoric habits, when there is a marked determination of blood to the head, no medicine will relieve so speedily as active doses of the compound powder of jalap.

"In the treatment of insanity, the class of medicines termed *sedative* play an important part. If exhibited with judgment, the most gratifying results often follow *their continuous and persevering administration*. The sedative treatment of insanity is a subject of itself, and I quite despair of touching even upon the confines of the many interesting and important points involved in the consideration of this division of my lecture. In insanity unassociated with active cerebral circulation, congestion, or paralysis, or after the head symptoms have been relieved by the local abstraction of blood and the administration of appropriate medicine, the exhibition of sedatives will be followed by the most beneficial results. In recent cases they are generally inadmissible, except in delirium tremens and preperal insanity, and other forms of derangement analogous in their pathological character and symptoms to these affections. In chronic insanity, in melancholia unconnected with abdominal repletion, or visceral disease, the persevering use of sedatives in various combinations will often re-establish sanity, when no other course of treatment is likely to be successful in dispelling the illusive impressions, or raising the drooping and desponding spirits. Battley's solution, the tincture of opium, the meconite, acetate, and hydrochlorate of morphia, the preparations of hyoscyamus, conium, stramonium, camphor, hops, aconite, ether, chloroform, hydrocyanic acid, Indian hemp, are all of great and essential service if administered with judgment and sa-

gacity. In suicidal insanity, when local cerebral congestion is absent, and the general health and secretions are in good condition, the meconite and hydrochlorate of morphia often act like a charm, if *uninterruptedly and perseveringly given* until the nervous system is completely under its influence. I have witnessed the most distressing attacks of suicidal mania yield to this treatment, when every other system has failed. I could cite the particulars of numerous cases of this form of insanity radically cured by the occasional local abstraction of blood from the head, the administration of alteratives, the warm bath, and sedatives. In the use of this powerful curative agent, our success will often depend upon a *ready adaptation of the kind of sedative to the description of case in which it may be deemed admissible, and a judicious combination of various kinds of sedatives.* I do not think we pay sufficient attention to such combinations. I have often seen an apparently incurable and unmanageable case yield to several kinds of sedatives combined, when it resisted the operation of any one or two. The extract of conium is often of service in cases of insanity combined with epilepsy; conjoined with mineral tonics, conium is occasionally of benefit, particularly in melancholia connected with chronic disease of the digestive organs and with neuralgia. In cases of uterine irritation, I have seen great good result from the combination of hops, camphor, and hyoscyamus. In illusions of vision, belladonna, commencing with quarter-grain doses, will be found a useful remedy. In insanity complicated with dysmenorrhœa, the combination of camphor with hyoscyamus, opium, or conium, may be given with great advantage. The hydrochlorate of morphia, in union with dilute hydrochloric acid, is said to be useful in cases where the sedative treatment is desirable. I am often in the habit of exhibiting sedatives and tonics in a state of combination, particularly conium with iron, opium with quinine, or with the infusion or compound decoction of cinchona. In debility, with irritability of the nervous system, accompanied by restlessness, Battley's solution, with the preparations of cinchona, will often prove of great benefit. The tincture of sumbu I have occasionally administered, and I think with advantage, in paroxysmal or convulsive forms of insanity. I have given to the extent of one to two drachms for a dose. In hysterical derangement, the tincture of Indian hemp will occasionally allay the excitement, and produce sleep more rapidly than any other form of sedative. The valerianate of zinc has not answered the expectations of those who have spoken so highly of its medicinal virtues. Tincture of opium with camphor, and the tartrate of antimony, is an excellent combination in cases of doubtful cerebral congestion. Tincture of hops in doses of from one to four drachms, it will be necessary to give when no other formulæ are admissible. As a mild form of sedative, compound ipecacuanha powder is occasionally recommended; but a good substitute for Dover's powder is a pill composed of opium, ipecacuanha, and soap.

"In treating the more chronic forms of insanity, particularly melancholia, it will be essential to bear in mind that they are difficult of cure, because, owing to the slow, obscure, and insidious character of the disease, the mental affection has been of some duration before the

attention of the practitioner has been directed to its existence. As this form of derangement generally exhibits itself in trifling perversions of the affections and propensities, leading to little acts of extravagance and irregularity of conduct, associated with great depression, we often find the attack has existed some years before a necessity is felt for any medical advice or treatment—perhaps a suicidal propensity has manifested itself, this being the first apparent overt act of the insanity.

“It is necessary, before suggesting any course of treatment in melancholia, to ascertain whether any latent visceral disease be present. Occasionally the local irritation will be found either in the liver, the stomach and bowels, and in women the uterine functions are frequently disordered. In the religious and other forms of melancholia in females, the delusive ideas are often associated with uterine irritation; and under such circumstances, if actual physical derangement of an active character exists in this organ, the best treatment will be, the application of leeches to the neighbourhood of the uterus, combined with warm hip-baths, sedatives, and mineral tonics. In cases of melancholia, the digestive functions are often much vitiated, the circulation languid, the skin cold and flaccid, and these symptoms being conjoined with a general loss of physical tone. Such patients require generous diet, good air, gentle exercise, and occasional stirruli. When dyspeptic symptoms are combined with an inactive state of the bowels, I have often administered the compound tincture of guaiacum with great benefit. It is important to watch the particular features in these cases, and to improve the general health by the exhibition of mild alteratives and vegetable tonics, with alkalis. I have occasionally administered, with success, in this form of insanity, apparently associated with an abnormal condition of the nutrition of the brain, cod-liver oil, with preparations of iron.

“My time will not admit of my submitting for your approval the treatment best adapted for those forms of mental disease associated with an atrophied or softened condition of the nervous matter. I think more is to be done for the cure of these cases than the writings of medical men would lead the student to suppose, particularly if the disease be seen and subjected to treatment in the early stages. I have recorded the details of several instances of cerebral disease, exhibiting all the legitimate features of ramollissement, and yielding to the persevering administration of the preparations of iron, phosphorus, zinc, and strychnia, combined with generous living, and the occasional application of a leech behind the ear, should indications of cerebral congestion be present.” I have also derived benefit in these cases from the use of the milder forms of mercurials, associated with cinchona. In cases of impairment of the mind, loss of memory, defective power of attention, occasional paroxysms of *mental* paralysis, unconnected with lesions of the *motor* power, I have found a solution of the acetate of strychnine, and a solution of the phosphate of strychnine, of great advantage.

“In some chronic forms of insanity, in dementia, and persistent

* “In the year 1830, twenty-two years ago, my first observations on ‘*Ramollissement of the Brain*’ were published in the ‘*Lancet*.’”

monomania, connected, as it was supposed, with morbid thickening of the dura mater, and with interstitial infiltration of the membrane, as well as with exudations upon its surface, I have occasionally had the head shaved, and have perseveringly rubbed over the scalp a strong ointment of the iodide of potassium combined with strychnine. In other instances I have kept the head painted with the mixture of iodine. I have seen marked benefit from this mode of treatment. In several cases where the mental symptoms were supposed to be associated with effusions of serum, I have ordered the iodine to be applied externally, at the same time exhibiting minute doses of calomel, or mercury-with-chalk, to slightly affect the system: this, conjoined with occasional tonics, diuretics, and stimuli to support the vital powers, and enable the patient to undergo this treatment, is occasionally productive of considerable benefit, in cases apparently placed quite beyond the reach of improvement or cure.

"I have only briefly spoken of two distressing and often unmanageable forms of insanity—viz., of suicidal mania, and of those cases where the patient obstinately refuses to take either food or medicine. In insanity associated with suicidal tendencies, it will be important to ascertain whether any cerebral congestion exist, as such is often the case. A few leeches applied to the head, followed by an active cathartic, will relieve the local irritation, and often dissipate the idea of self-destruction. In the absence of any positive active cerebral symptoms, the prolonged hot bath, and the persevering exhibition of some form of sedative, is the best treatment to be adopted. I have seen the suicidal impulse removed after the administration of a few doses of belladonna; but the meconite and hydrochlorate of morphia, if given for a sufficient length of time, will, in the great majority of cases, distinct from actual incurable visceral or cerebral diseases, effect a cure. Occasionally the shower-bath, and counter-irritation in the vicinity of the head, will aid us in re-establishing health. Cases sometimes present themselves where the patient determinately refuses to take either food or medicine. This character of case gives those who have the care of the insane much anxiety. The refusal of food may be connected with the determination to destroy life, or it may be associated with delusive impressions. I am inclined to believe that, in the majority of these cases, the symptom is the result of some local mischief remote from the brain, and sympathetically affecting the organ of thought. Upon examination we often find, in these cases, great gastric derangement, obstinate constipation, considerable tenderness upon pressure in the epigastric region, hepatic disease, the tongue foul, breath offensive, and other symptoms of derangement of the chylopoietic viscera. The determination to resist nourishment arises, under such circumstances, from a *positive loathing of food—a want of all inclination for it*. I have seen cases of this description, where it has been deemed necessary, in order to prolong life, to introduce food forcibly into the stomach, speedily cured by the adoption of means for improving the state of the general health and digestive organs. Mild alteratives, vegetable tonics, blisters over the region of the stomach, if the patient complain of pain in that region upon pressure, the warm and shower bath,—is the most successful treatment to adopt in cases connected with obvious

visceral derangement. Instances sometimes occur, where the refusal of food is clearly traceable to a delusive impression—an hallucination of taste, which makes everything appear to the patient bitter, disgusting, and poisonous. The unhappy patient imagines that he is commanded, either by good or evil spirits, not to eat. These unhappy persons must be treated upon general principles, and the remedies be adapted to the peculiar character of each individual case. Under such hallucinations of taste, patients often swallow the most extraordinary articles. The case of a lunatic is recorded, who imagined that his stomach required to be strengthened with iron. He was seized with inflammation of the œsophagus, of which he nearly died. He then confessed that he had swallowed the blade of a knife. After his death, there were found in his stomach seven oxidated lath nails, each two inches and a half long; thirty-three nails, two inches long; forty-nine smaller iron nails and rivets; three pieces of wound-up iron wire; an iron screw, an inch long; a brass image of a saint; part of the blade of a knife; and other articles, amounting in number to 100, and weighing about twenty ounces. It will be necessary, in cases like those to which I have been referring, to ascertain whether the determination not to eat is the effect of such perversions or hallucinations of taste.

“The time will only admit of my alluding generally to the importance, as a principle of treatment, of the administration of tonic remedies, active exercise in the open air, and to good and generous living. It is rarely necessary, in the treatment of insanity, to deprive the patient of animal food. Individual cases occasionally come under our notice, in which it is necessary, for a time, to enforce a farinaceous diet; but such is not often our duty. Among paupers, insanity is frequently cured by the free use of good animal food, and a generous supply of porter. Even when we are satisfied of the necessity of local depletion, it will often be necessary to give wine, and allow the patient a generous diet.

“There are many other essential points in connection with this important, this vast subject, which I am reluctantly compelled to pass entirely over.”

ART. 15.—*On the employment of Opium in Mental Disease, and some allied conditions.* By Dr. FRIEDZ ENGELKEW, of Oberneuland.

(*Journal of Psychological Medicine; and Allgemeine Zeitschrift für Psychiatric, &c.*)

It will be interesting to our readers, to learn the views of our German brethren upon a practical point, which has particularly engaged attention in England. The author introduces his remarks by a few general observations upon the empirical misuse of medicines; and in the next place gives an historical sketch of his subject. The use of opium for mental maladies, among the ancients, Dr. Engelkew observes, is very doubtful, since we have no written record thereof, and their theories of this class of diseases would be opposed thereby. The first distinct mention of its employment in mental diseases, he informs us, is to be found at the beginning of the eighteenth century, by Dr. Cullew. By Tralles and Wepfer it was given in increasing

doses until sleep was produced. The views of Reil, the author remarks, coincide with those which guide the administration of opium in insanity by the best practitioners of the present day, as seen by the following quotation from that writer's treatise on fever. "In asthenic mania with crethism, not proceeding from any material (organic?) cause, opium administered in full doses from one to four grains, is of most essential service; it diminishes excitement, quiets the undue action of the brain, and causes sleep. Further, it is of great utility in cerebral disturbance from cold, accompanied with pain and spasms."

The writers, whose names we next meet with, are those of Fribourg, Pargeter, Chiarugi, and Friedrich; the latter ranges the authorities into two classes, those opposed to and those in favour of the use of opium in insanity; among the former he enumerates Prichard, Haslam, Hasper, Cox, Neville; in the latter, Chiarugi, Reil, Burfows, who have not, according to the author, sufficiently indicated the contra-indications of its employment. Friedrich's indications for its use are excitement in a depressed state of the cerebral vitality, and the necessity for the production of a soothed state of mind. The influence of Brown's views, Dr. Engelkew remarks, was to hinder the use of opium in the cases now spoken of, and despite the commendations of Sydenham, its use was prohibited, and the treatment of mental disease was, by so much, prejudiced during part of the present century. Opium, Dr. Engelkew observes, was formerly regarded as the common representative of all narcotics, but later researches have shown that its narcotic properties are unlike others of the class, while in value it surpasses all others: The mode of action of opium, advocated by the author, is that of those physiologists who consider it to have a twofold action, one local on the nerves of the stomach, the other remotely, on the nervous centres, by absorption into the blood.

In illustration of the effects of opium, the author quotes Reineke's description (in 'Blumenbach's Medic. Bibl.,' *bd. 11, § 340.*) of the Persian and other oriental opium eaters, and observes thereon, that we may thence learn that opium may be administered in large doses, and for a longer continuance, than is generally admitted. In support of this opinion, Dr. Engelkew cites several of his own cases, in which from one to three grains had been given with benefit once or twice a day, for periods of three or four years, and in one instance, with two short intervals, for a period of twenty years. We may observe, however, upon the supposed beneficial result in these instances, that time must be regarded as an important element in the cure. Dr. Engelkew has often administered this remedy for three months, and longer, in different forms of mental disease, without having perceived any ill effects to have resulted; on the contrary, the appetite has improved, the entire frame has been benefited besides the marked and decisive amelioration of the mental malady. It has seldom been found requisite to give so large a dose as four grains. Medium doses have usually been combined with other means; regardless of the primary excitement, the use of the drug has been persevered in, limited to once or twice in the twenty-four hours.

The general influence of opium, the author divides into positive and negative, determined by the amount of the dose; thus, he describes

small (*e. g.* half grain) doses as producing augmentation of the rapidity of the circulation, and of the quantity of the secretions; if the dose be raised to a grain, or a grain and a half, the actions of the brain are increased, with diminished susceptibility to external impressions. Thoughts are developed more rapidly and with greater clearness, the association of ideas is more varied, and imagination more active. A larger dose, *e. g.* from three to ten grains or more produces the well-known phenomena of stupor, &c. The author further observes, that taken altogether, the primary and secondary effects of opium are excited upon the nervous system, producing, in general, a diminution of excitability, and an increase in the capability of action in the mental endowments.

Dr. Engelkew enumerates the following as the chief points to be considered in the employment of opium:—the bodily constitution, the nature of the disease, the contra-indications for its employment, the history of the disease.

The changes which time has introduced into our manners, customs, habits, &c., have had their influence in producing a greater development of certain feelings and passions, with their corresponding morbid conditions, and by their frequent repetition, induce a preponderance of the nervous constitution. Opium, the author states, is more suitable for those forms of hypochondriasis which most nearly approach to melancholia, as the former can, in many cases, be more closely traced to disorder of the visceral ganglia than of the brain itself, to which the morbid state applies more strictly in melancholia. In neither form, however, does the author look for great benefit from its use. In general insanity, the utility of this medicine is observed when there is a degree of excitement; its continued use is then frequently of much service. In mania its employment is not required in the early stages, which are marked by more or less of inflammatory or sub-inflammatory action. This state having been in some measure subdued, the author administers opium in doses of one or two grains, gradually increased to four or six grains combined with calomel and digitalis. Warm baths and corresponding regimen being enforced at the same time.

Puerperal mania the author recognises as a disease of nervous excitement, with debility occurring in a peculiar inflammatory state, and a form of mania in which the best effects are obtained from opium. In idiocy and dementia the author finds opium of no service.

Dr. Engelkew recognises an asthenic and a sthenic form of delirium tremens, the former in his experience being more frequently met with, in nine out of eleven cases. He administers opium in doses of from two to four grains with or without digitalis.

Chorea is a form of nervous disease, in which the author also states that he has witnessed the most decided benefit from opium. He gives it in increasing doses of from one quarter of a grain to one grain, with children of from 10 to 15 years of age, and continues its use for from two to eight weeks.

The contra-indications for the use of opium in mental disease mentioned by the author, are much the same as in other cases; *e. g.* 1. In insanity depending upon inflammation, with or without synochial

fever. Besides inflammation of the brain, of which delirium is a symptom, there are many other distinct forms of disease, which, in the acute stages, are attended by delirium, and for which an antiphlogistic, rather than a sedative, treatment is adapted. 2. In congestive conditions in the arterial (sanguine?) temperament, opium is injurious; whereas on the contrary, in the nervous and venous (lymphatic?) temperament, opium will, in the majority of cases, remove the congestion, especially when the exciting cause is to be sought in violent mental emotion.

With disease of the mind occurring in the asthenic state, the greatest caution is required in the use of opium.

With regard to the repetition of the doses of opium, Dr. Engelkew points out that this must be determined by the constitution of the patient, and the effects of the previous administration.

The author also observes upon the error of regarding all narcotics as equally useful in mental diseases; and repeats his remark that they are not to be regarded as they were formerly, specifics for insanity.

ART. 16.—*New Researches on the Curability of Softening of the Brain.*
By Dr. DURAND-FARDEL.

(*London Journal of Medicine; and Archiv. Gén. de Med.*)

Dr. Durand-Fardel observes that recovery from cerebral hæmorrhage, and from softening of the brain, are well-ascertained facts. There is, however, a difference in the progress of the two diseases. In hæmorrhage, if the effused blood does not soon destroy life, cure, or reparation commences by the absorption of the blood, the formation of a membrane, &c. The disease has attained its greatest development, and begins to diminish. The tendency of softening, on the other hand, is at first to increase; and its cure or decrease is only after a succession of changes, of which hæmorrhage offers no examples. Softening sometimes, indeed, simulates the rapid development and the decreasing progress of hæmorrhage; but this is due to the general congestion which often at first accompanies it.

When softening has passed into the chronic stage, the symptoms which attended it are connected, as in hæmorrhage, with destruction of a portion of the cerebral fibres,—due in one case to sudden laceration, and in the other to gradual disorganisation.

Dr. Durand-Fardel relates several cases, which lead him to the following conclusions:

Cerebral softening, when arrived at the chronic stage, may undergo cure like hæmorrhage effusion—by a process of limitation and absorption of the softened matter, analogous to the absorption of a clot. But this absorption, which at last produces ulcerations of the surface of the brain and cavities, or large losses of substance in the interior of the organ, succeeds to transformations, of which the most important are, *yellow patches* on the surface of the brain, and *cellular infiltrations* in the medullary substance.

With regard to the symptoms, patients have, during life, presented symptoms of severe disease, from which they have entirely recovered,

or of which they have retained traces exactly similar to those which attend the cicatrisation of hæmorrhagic clots. On *post-mortem* examination, we find softening, which sometimes seems to have remained stationary for a longer or shorter period, sometimes is transformed, and presents marks of reparation or cicatrisation. Sometimes, again, the nature of the anatomical change is confirmed by the symptoms; sometimes, the origin of the symptoms is proved by the nature of the change.

The cases in which life has continued for years with slight paralysis, as if from a cured hæmorrhagic clot, or those in which all symptoms have disappeared after an uncertain period, prove, whatever be the character of the lesions subsequently found, that cerebral softening has not that fatal progress which is commonly attributed to it; that the prognosis usually formed ought to be modified; that, in an individual affected with cerebral softening, the symptoms may entirely disappear, or, more frequently, diminish and become limited.

The author, in concluding, acknowledges that he is not the first who has pointed out the possibility of recovery from cerebral softening: this has already been done by Andral, Cruveilhier, Lallemand, Carswell, and Dechambre.

ART. 17.—*On the Treatment of Chorea.* By Dr. SÉE, of Paris.

(*British and Foreign Medico-Chirurgical Review.*)

Speaking of this affection, Dr. Sée enters into a critical examination of the various modes of treatment, and makes some very interesting observations upon the employment of gymnastic exercises and sulphureous baths. Gymnastic exercises, suggested long since by Darwin and Good, have been recently employed at the Hôpital des Enfants with the most marked success; and as the subject is of great interest just now, when we are commencing the establishment of children's hospitals in this country, we may state the general results of their introduction into that of Paris to a much later date than M. Sée's essay refers to. They were first employed there in 1847, under the guidance of M. Laisné, gymnastic professor at the Polytechnic School, their effects being first tried on serofulous children. Commencing with simple movement of the legs and arms, accompanied by appropriate songs, the children's progress was so rapid, that they were soon able to employ the orthopaedic ladder, the parallel bars, and other machinery, in succession. By the twentieth lesson they were exercised in wrestling, and afterwards in running, special exercises being devised for the lame. From the first lesson the children became fired with emulation, and movements which seemed impossible were soon executed with ease and pleasure. A marked amelioration was speedily observed, their countenances becoming animated, their flesh firm, their voices stronger, their appetites keener and more regular; glandular swellings which had long resisted all treatment, were resolved, and fistulous sores that had been open for years closed up. The lessons, one hour each, were given three times a week; and in the intervals the children amused themselves by repeating such of them as did not require machinery. The entire appearance of the wards was changed. In

place of the children sitting or lying about listlessly, they were now seen practising their marches to their songs, running, wrestling, and trying to surpass each other, the girls nowise yielding to the boys. The beneficial agency of such activity imparted to these naturally indolent and apathetic subjects, may easily be conceived. These favorable results led to an enlargement of the sphere of the experiment, and the treatment was extended to nervous affections, partial paralysis, rickets, and especially *chorea*. Since 1847 there have been ninety-five children suffering from *chorea*, sometimes so obstinate as to have resisted the most varied treatment, cured either by this means alone, or by its conjunction with other means; and during the four years no accident whatever has resulted from the employment of the exercises. Dr. Sée states, that in applying them to *chorea*, care is taken to graduate them according to the severity of the case; and that they are repeated daily, but not for more than from fifteen to twenty-five minutes, so as not to induce fatigue and palpitation. Improvement is sometimes seen after the first lesson, and at latest after the fifth or sixth; so that at the end of a week we can judge whether the means is likely to prove efficacious, and if manifest improvement has not then taken place, it is doubtful whether the cure will be thus effected, or if it is, it will be so only after a long time. The worst as well as the slightest cases have reaped equal benefit, the cure in the favorable ones only requiring a mean of twenty-nine days, and old or relapsed *chorea* being more amenable than recent. Dr. Sée has found that when other remedies are conjoined with the gymnastics, the proportion of cures is less, and the period of their attainment later; and he recommends no other adjunct to be employed than good diet.

Sulphureous baths, as devised by M. Baudelocque, is another valuable means, fifty-eight rapid and definitive cures having been obtained in sixty-five cases. Thirty drachms of sulphuret of potash are added to each bath, which is employed for at least one hour daily, at a temperature of 91 degrees. Generally amelioration occurs after the second or third bath, but sometimes not until after twelve or fifteen days, a mean of twenty-two days having served for the cure of fifty out of fifty-seven cases. Where the cure is retarded, it ordinarily depends upon the patient's powers being lowered by other remedies or insufficient diet, upon irritation of the skin induced by the bath, or upon acute irritation of the internal serous membranes; circumstances contra-indicating the baths while they continue. The conjunction of other remedies retards rather than aids the cure. Deducting the cases in which the bath was improperly used under the above circumstances, there remain but nine true failures in eighty-one cases, these being almost all recent or rheumatic *choreas*.

ART. 18.—*Chloroform in Convulsive Affections*:—(1) *In Infantile Convulsions, and other Spasmodic Diseases*, by Prof. SIMPSON, of Edinburgh; and (2) *In Delirium Tremens*, by Mr. BUTCHER, of Dublin.

(1. *Monthly Journal of Medical Science.* 2. *Dublin Medical Press.*)

[These papers are interesting, from the light they throw upon the

modus operandi of the remedy, as well as for the evidence they afford of its therapeutical value. In Dr. Simpson's case, depressing measures are tried without success—then chloroform is tried successfully, and, ergo, a presumption that the remedy has acted, not by *depressing* the vital powers, but by rousing them. In Mr. Butcher's case, likewise, we arrive at the same conclusion, from the fact, that the treatment of delirium tremens, to be successful, must be stimulant. There is nothing in the composition or affinities of chloroform to prevent this supposition, when the remedy is given *in moderation*.

[1. Dr. Simpson's case, and the remarks to which this case gives rise, are to be found in the 'Monthly Journal of Medical Science.' He proceeds thus:]

Case.—The Viscountess — was confined on the 7th of October. On the 17th of the same month, the child was observed by the nurse to have two or three times, during the day, twitchings in the muscles of the face. On the two following days these increased in frequency and extent; on the 20th, the convulsions became far more violent in their character, were more prolonged in their duration, and were repeated with much greater frequency. They continued with little change, and no abatement in their intensity or frequency, for the next fourteen days. Sometimes they affected the right side of the body much more severely than the left. In the meantime, Dr. Scott and I tried a great variety of means for their relief, but all in vain. The bowels were well acted upon with mercurials, magnesia, &c.; and every separate function attempted to be brought as near as possible to the standard of health. A new wet nurse was procured, lest the milk might perchance have been proving, as it sometimes does, the source of irritation. The child was placed in a larger and better ventilated room. Ice and iced water were occasionally applied to the scalp. At one time, when the fits became unusually prolonged, and were not only accompanied but followed for a time by much congestion in the vessels of the scalp and face, and an elevated state of the anterior fontanelle, two leeches were applied. Liniments of different kinds were used along the spine. Musk, with alkalies, was given perseveringly for several days as an antispasmodic; and small doses of opium, turpentine enemata, &c., were exhibited with the same view. All these, and other means, however, proved entirely futile.

As I have already stated, it was on the 20th of October that the fits first assumed a severe character, and they continued without any amelioration for about fourteen days from that period, recurring sometimes as frequently as ten or twelve times in an hour. At last the child, who had hitherto maintained wonderfully his strength and power of suction, began to show symptoms of debility and sinking; and during the fifteenth and sixteenth days of the attack, the fits became still more violent, and more distressing in their character. They were now accompanied with moans and screams that were very painful to listen to; symptoms of laryngismus and dyspnoea supervened towards the termination of each fit; and in the intervals the respiration, as well as the pulse, continued much quickened.

During these last two days of the disease, the exhaustion became so great, the dyspnoea, in the intervals, so distressing, and the fits so very

violent and constant, (seventeen were counted in one hour,) that Dr. Scott and I gave up all hopes of the possible survival of the infant. We had exhausted all the usual means of relief. Ultimately, but much more with the view of abating the screaming, laryngismus, and other distressing symptoms under which the little patient was suffering, than with any great hope of permanent relief and cure, I placed the child, on the forenoon of the 5th of November, for about an hour under the influence of the inhalation of chloroform. During this hour there was no recurrence of the fits; but in a short time after the withdrawal of the action of the anæsthetic, the convulsions recommenced with their old violence and frequency. The benefit, however, was sufficient to encourage a longer repetition of the remedy; and from 4 to 8 o'clock in the afternoon of the same day, my assistant, Mr. Drummond, placed and kept the child again under the influence of chloroform, a few inhalations, from time to time, of a very small quantity of the drug, sprinkled upon a handkerchief, and held before the face of the infant, being sufficient for this purpose. It was specially applied at any threatening of the recurrence of a fit, and during the four hours in question, all convulsions were in this way repressed. When the child was allowed to waken up at 8 o'clock, it took the breast greedily, and continued well for upwards of an hour, when the convulsions again began to recur. At last, about 12, P.M., it was again placed under the inhalation of chloroform, and kept more or less perfectly under its action, for upwards of twenty-four continuous hours, with the exception of being allowed to awaken eight or ten times, during that period, for the purpose of suction and nourishment. During most of this period it was carefully watched by Mr. Drummond, and at last the nurse was intrusted with the duty of adding the few drops of chloroform to the handkerchief, and exhibiting them at any time the child was offering to awaken or become restless.

"After this long continuation of the chloroform, the child, on being allowed to waken up, as usual, drank greedily at the nipple, and immediately fell back into a quiet and apparently natural sleep. The chloroform, and all other formal medication was, in consequence, discontinued; and from this time there was subsequently no recurrence whatever of the convulsions. In about ten days the infant was removed with the family to the country. I have within the last two days (December 18) seen the child as it was passing through Edinburgh. It was strong, plump, and well grown for a child ten weeks, and was, in fact, revelling in the best of health.

"In exhibiting the chloroform to this infant, ten ounces of the drug were expended; but of course a very large proportion of this quantity was lost by evaporation, in consequence of the mode in which it was employed.

"I have known the inhalation of chloroform similarly useful in other cases in arresting infantile convulsions; but I am not acquainted with any instance in which the patient was so young as in the above instance. In the adult also, especially in cases of puerperal convulsions, I have now repeatedly seen the inhalation of chloroform as signal and satisfactory in its antispasmodic power over the convulsive fits, as it was in the little patient whose case I have described. Tetanus and

epilepsy have been temporarily arrested and controlled by it; and, perhaps, it will yet be found one of our most certain and beneficial therapeutic means in the functional forms of those different convulsive or spasmodic diseases that are produced, either by an undue excitability of the true spinal system, or by distant morbid irritations acting through this, the excito-motory system. Such reflex convulsive or spasmodic affections are, as is well known, particularly common in infancy and childhood. I have seen its use arrest laryngismus, colic, hiccup, &c.; and cases have been detailed to me of its occasional successful use in asthma, spasmodic urethral stricture, &c. But there is one common and too fatal spasmodic disease, almost confined to the period of childhood, in which I have seen anæsthetic inhalations successful in arresting and controlling the paroxysms, and where probably a more extended and persevering use in the employment of them would be found to be attended with beneficial effects. I allude to hooping-cough. I have known chloroform inhalations greatly abate the irritability of the cough attendant upon phthisis, &c. But with others I have scrupled to use chloroform inhalations in hooping-cough, under the fear that they might possibly increase the great predisposition, which exists in this affection, to pneumonic inflammation, or aggravate that inflammation if it were already present. This, *à priori* reason, however, against the use of chloroform inhalations as an antispasmodic in hooping-cough, has been of late set aside by the observations and experience of different German physicians. In a paper, containing some remarks relative to the medical uses of chloroform, published in the 'Monthly Journal' for December, 1847, in addition to its employment as an antispasmodic, anodyne, &c., I suggested the possibility of the drug acting as a contra-stimulant in some inflammatory diseases, and particularly those of a painful kind. Latterly, we have had records published of its employment in upwards of 200 cases of pneumonia in German practice. Out of 193 cases of pneumonia treated with chloroform inhalations by Wachern, Baumgärtner, Helbing, and Schmidt, 9 patients died, or the mortality amounted to $4\frac{1}{2}$ per cent. Dr. Varrentrapp has given chloroform in 23 cases of pneumonia in the Frankfort Hospital. One of these 23 patients died. The detailed results in the other 22 cases seem to have been sufficiently satisfactory. At all events, the effects of the chloroform inhalations upon the cough, expectoration, &c., and upon the general course of the disease, would appear to show that we need have no fears of deleterious effects from it, as far as regarded the chance or existence of pulmonary inflammation; whatever advantages we may derive from it in relation to its prevention of that inflammatory state by allaying the cough, keeping the lungs in a relative state of quietude, and abating or restraining the succession of characteristic spasmodic attacks. I speak, of course, of the more severe cases of pertussis; for the milder forms of it require care merely, rather than actual treatment."

[2. Mr. Butcher's case is in the 'Dublin Medical Press.' It is as follows:]

"The following very aggravated case of delirium tremens was admitted into Mercer's Hospital, under my care, and treated most suc-

cessfully by the *internal* administration of large doses of chloroform. I am not aware of the remedy having been used in England, and I thought I was the first who had tried it in this country; but from a recent conversation with Dr. Neligan, it appears he employed it some months ago also in a case of delirium tremens, to subdue extreme maniacal excitement which was present. The practice, however, comes recommended from America ('American Journal of Medical Sciences,' January, 1852,) and so far as a single case can speak, mine confirms the favorable report given of it, and still further goes widely to proclaim the powerful agency of the medicine over this inexplicable derangement of the nervous system.

"William Magrath, aged 26, a powerful young man, by trade a wine-porter, was admitted into Mercer's Hospital, June 25, 1852. During the last four years he has been in the habit of consuming large quantities of spirits of various kinds—wine, whiskey, porter, &c., seldom to that extent as to produce stupid intoxication, but constantly keeping up for days together a state of the greatest nervous excitement. A day scarcely ever elapsed without a large quantity of stimulus being taken. About a fortnight before his admission, he commenced to drink more freely than before, and, as I am informed by his wife, came home drunk every night for a week. He then, through the interposition of friends, was arrested in this career, and promised to abstain from ardent spirits altogether. His stomach became very irritable; nothing in the way of food would rest upon it. He was depressed, and sunk into a state of temporary inaction or collapse. This condition did not last for more than forty-eight hours, when violent reaction of the nervous and vascular system was fully established. Medical assistance was sought, but no medicine would stay upon the stomach, so that the symptoms gained ground. When such was found to be the case, the patient's friends had him removed to the hospital. When admitted, four days had elapsed from the time of his giving up the stimulus, and he had no sleep during that period. A train of symptoms consonant with the highest nervous irritation was present. His countenance was particularly anxious, with a wild expression; the pathognomonic symptom, tremor of the hands and tongue, fully established. His speech was hurried and uneven; he was quite irrational and wild, constantly looking around, apprehensive of some imaginary danger; pulse 120; surface of the body hot and burning, while his face was covered with perspiration, and his hair drenched in sweat. He was put into bed, but would not remain quiet, got up, and kept constantly walking up and down the ward and corridor. He was ordered two grains of calomel and a grain of opium in pill, to be taken every third hour. He had taken three, but each was vomited almost immediately after being swallowed. I then tried morphia in combination with creosote and camphor; a grain of morphia, two drops of creosote, and an ounce of camphor mixture, given every third hour. The draughts were likewise rejected. If the patient only took a sup of cold water to moisten his parched mouth and lips, it was instantly vomited.

"On the following morning, the 26th, his condition was a great deal worse. He never stopped quiet for a moment, from the time of his

admission, at 10 o'clock on the previous morning, up to this time, a period of twenty-four hours. He was walking about all night with a keeper in attendance. His countenance was more wild; the eyes starting from his head; he was more delirious and more haunted with illusory apprehensions of a frightful nature; the tremor of the tongue was greatly increased, and now the lower extremities participated in it more violently than the upper.

"The case at this period was a very serious one. From the irritability of the stomach, opium in any form could not be got to rest upon it. As for the idea of administering repeated small opiate enemata in this powerful, restless, and uncontrollable young man, the practicability of it could not be entertained for a moment, though sanctioned by the high authority of Dupuytren. It may be said the object could be attained by force, but that I could not sanction. All through, it may be observed, I permitted the man to walk about the ward at will, closely watched. I have the greatest possible aversion to restraint in this disease. (I separate altogether from the present question the treatment of traumatic delirium after fractures.) I have seen a man in delirium tremens, from being held down and overpowered, thrown into epileptic convulsions, and I have seen a man die exhausted from ineffectual efforts to shake off and liberate himself from the strait-waistcoat. From the satisfactory issue of the two cases reported in the periodical already referred to, I determined on a like practice—the internal administration of chloroform.

"At 10 o'clock this morning (26th), I administered one drachm of pure chloroform in two ounces and a half of water. In an hour after swallowing it, the patient became comparatively tranquil, and could be persuaded to lie in bed. When in the recumbent posture, the spastic short contractions of the muscles of the lower extremities, as well as those of the upper, were as marked as in the erect position.

"11 o'clock.—He began to get drowsy, and slept for periods of ten and twelve minutes at a time. At a quarter before 1 o'clock, he became fully affected by the medicine, and fell into a quiet steady sleep; and on visiting him at 2 and 4, P.M., he was still in profound sleep, and continued so until 7 in the evening. During this long sleep of six hours, he was calm and quiet, his pulse fell from 120, which it was in the morning, to 96, at which it remained; his respirations were between 16 and 20 in the minute, and not louder than natural; the temperature of the body was exalted. All along heat was maintained to the feet, and a pure current of air circulating around him, the windows being kept open. On his awakening, he was nearly quite sensible, and I took advantage of this pause to administer a full stimulant cathartic, consisting of six grains of calomel and ten of camphor, not only with the intention of freeing the bowels of accumulated matter, but likewise to guard against congestion of the brain. Orders were left, in case he should not sleep before 10, to administer half a drachm of chloroform in two ounces of camphor mixture.

"27th, 10, A.M.—The patient went to sleep almost immediately after swallowing the bolus on last evening, so that he did not require the chloroform draught. His bowels were opened three times very freely during the night, and his condition is in every way greatly improved.

He is quite rational, and answers every question sensibly; his pulse 96, considerable volume; skin cool; after being interrogated, he quietly turned on his side and went to sleep.

"3, P.M.—His bowels have been several times opened since morning, yet his pulse has risen to 110; the temperature of the body is also increased; he is hot and burning; altogether he is excited, and the fear of horrible objects around him has returned. On the presence of those symptoms I at once repeated the full chloroform draught. Shortly after, he took a large drink of tea, which was inadvertently left beside his bed, which produced vomiting immediately; however, I was satisfied to let him remain without any further medicine until evening.

"9, P.M.—Since my last visit the patient has slept, at short intervals, for one and two hours at a time; pulse still up to 110. Ordered the chloroform draught, one drachm to two ounces and a half of camphor mixture, to be repeated.

"28th.—After the patient had taken the draught last night, he fell into quiet sleep, which continued uninterrupted until eight o'clock this morning. He awoke quite collected and rational; his pulse 80; skin cool; his tongue and extremities quite free from tremor, and he feels in every respect well; his appetite is returned, and all food is retained on the stomach. Ordered a grain of morphia, in an ounce of mixture, to be given at night.

"29th.—This morning the patient is quite restored; he is sitting up eating his breakfast heartily in bed; in short, he is quite convalescent, and only requires a little nourishment to remove the debility consequent upon so severe a struggle.

"In reference to the administration of the chloroform in the foregoing case, there is one point which solicits our closest attention—namely, the remarkable lowering of the pulse, when the perfect effect of the medicine was produced; the pulse, in fact, might form the index to direct the practitioner as to the propriety of a repetition of the dose. Again, as a precautionary measure, I consider it desirable to keep heat to the feet and a current of pure air circulating around the bed and through the apartment in which the patient lies."

ART. 19.—*Two Cases of Hydrophobia, in which the Sufferings of the Patient were mitigated by Chloroform; by (1), Dr. LAWRIE, of Glasgow; and (2), by Dr. SANDWICH, of Beverley.*

(1. *Monthly Journal of Medical Science.* 2. *Proc. Med. and Surg. Journal.*)

1. [Dr. Lawrie's case, which is to be found in the 'Monthly Journal of Medical Science,' differs somewhat from ordinary cases, in the lesser prominence of the convulsive symptoms. It occurred in a young and ardent girl, *ninety-eight days* after the bite. There were no premonitory symptoms relating to the wound, nor had *fear* anything to do in the matter, for the girl had no suspicion of the nature of her illness, and no dread of dogs. The following extract will explain the general character of the symptoms, and their peculiarity.

"I have heard," says Dr. Lawrie, "experienced surgeons assert, that

hydrophobia so much resembles tetanus that they are in reality the same disease. It has been my misfortune to see too many cases of tetanus, and only this one case of hydrophobia; but symptoms more dissimilar than those of traumatic tetanus, and the sufferings endured by this unfortunate girl I have never witnessed. It much more resembles acute hysteria. The globus and incessant tossing were well marked; but although the desire to move was irresistible, the motions had no appearance of being involuntary, or associated with insensibility. The attempts at swallowing brought out symptoms such as I have never before seen, and which appeared to me quite diagnostic between this and any other form of disease. The constant discharge of froth from the mouth was also a very peculiar symptom. My first impression was, that the girl was poisoned."

The case itself is thus told:]

"On Wednesday, 9th June, I got a note from my friend, Mr. Hislop, of Renfrew, requesting my immediate attendance, as he feared he had met with a case of hydrophobia. I instantly obeyed the summons; but, before detailing the symptoms which I observed, I would call your attention to the following statement, with which Mr. Hislop has most kindly furnished me, and which I give nearly in his own words:—

"On Tuesday, 8th June, Mr. Hislop was hurriedly called, about mid-day, to see Miss M. M.—, a robust healthy-looking girl, of 20. He was informed that on Monday, 7th June, she had consulted Dr. Robertson for symptoms which appeared to him to be hysterical. Dr. R. prescribed a saline laxative, which did not relieve her. Next morning, the character of the symptoms appearing unchanged, the aromatic spirit of ammonia was ordered in repeated doses. The girl complained to Dr. Robertson of depression of spirits, and general uneasiness, but especially of globus, and a feeling of suffocation. The only peculiarity, hardly noticed at the time, was that she said,—'I cannot swallow the medicines.' In fact, difficulty of swallowing did immediately occur during her attempts to take each dose of the aromatic spirit, and, with accompanying spasms in the throat, had so much increased, that when she was offered her mid-day dose, she threw the glass from her, rushed down stairs, and casting herself into her aunt's arms, exclaimed she was dying. It was then that, in consequence of Dr. Robertson's absence, Mr. Hislop was hurriedly summoned, and saw her for the first time. He found her in considerable distress, imploring relief from a ball of wind in her throat, which she every moment expected would suffocate her. She made frequent efforts 'to break the ball,' and occasionally succeeded, after much retching, in getting rid of a little flatus. Along with this she had distinct spasmodic paroxysms, occurring perhaps every five minutes, during which she clutched her throat with both her hands. She seemed much excited. Pulse 120; bowels very constipated, no stool for eight days; catamenia quite regular. The opinion Mr. Hislop formed coincided with that given by Dr. Robertson, that the case was one of acute hysteria. He immediately put gr. jss of tartar emetic into a teaspoonful of water, and with considerable difficulty persuaded the young woman to swallow it, which she did with a peculiar snap, and some effort. In ten minutes he repeated the dose, and remained with her three quarters of an hour. She

did not vomit, but her pulse fell, and the spasms were quieted. He ordered a purgative enema, and left her. During this lengthened visit a circumstance occurred, which is worth mentioning. The girl was engaged to be married; her intended called, and remained with her about twenty minutes. Immediately before he entered the room she was complaining very much of the spasms in her throat; but no sooner was she aware of his presence than she seemed to forget her ailments, and talked, laughed, and jested, as if she were quite well. No sooner, however, did he leave her than her symptoms returned. Mr. Hislop called at 8 in the evening, and found her much better; the enema had acted freely, and during its operation she had vomited a quantity of bilious matter. She was in good spirits, and attributed her illness to constipation and 'cold.'

"June 9th.—At one o'clock in the morning Mr. Hislop was roused by a loud and urgent summons to visit his patient. He found that, although she had been comparatively quiet in the early part of the night, she had not slept. The spasms had returned, and been much aggravated by an attempt to drink some ginger beer. They were now almost without intermission, and so violent, that when they came on she would spring suddenly out of bed, and cling to those beside her in an agony of despair. Her pulse was 150, and very full. She was still making constant efforts 'to break the ball in her throat,' and complaining of pain, which he attributed to these efforts in the regions of her heart and stomach. He resolved to bleed her, and with some difficulty, on account of her constant change of posture and unsteadiness, took fully $\bar{x}xxiv$ of blood. The spasms subsided to a slight occasional sigh, and she seemed much relieved. She soon complained of thirst; the offer of water seemed to produce a spasm, which was renewed by her attempting to swallow it, but she appeared to get over a mouthful with some difficulty. She next said she was hot. Mr. Hislop lifted his hat, and began to fan her face gently; but each impression of the air on her face brought back the spasms. The suspicion of hydrophobia now for the first time crossed his mind. At this juncture he had some conversation in another room with his patient's aunt, with whom she resided. No other person being present, he took the opportunity of asking if her niece had ever been bitten by a dog. She seemed surprised at the question, and, after enjoining him to secrecy, said, that her favorite dog, Neptune, 'had set upon her, the day before he died, and scratched her back.' On returning to his patient he found her much easier, and left her at 4 o'clock, with directions that she should have a purgative enema at 6 o'clock, if awake.

"At half-past 8, A.M., Mr. Hislop was again hurriedly summoned. The enema had come off, and brought with it *only a little blood*,—since which, the paroxysms had gone on increasing in frequency and violence, and the mere idea of swallowing seemed to induce them. She had occasional vomiting of bilious matter. Turpentine was applied to the back and chest, mustard to the feet, and a blister to the back of the neck,—all without benefit; indeed the vapour of the turpentine proved a source of great annoyance. By 11, A.M. the vomiting had become almost constant, and soon assumed the appearance of 'coffee-grounds.'

"I saw her about a quarter to 1, P.M., and was much struck with

what I witnessed. On entering the bedroom, I saw a robust, fine-looking young woman in bed, seemingly under great suffering. She turned her head towards me as I entered, with a sudden movement, and I shall not soon forget her wild expression as she gazed at me for an instant, and threw herself back on her pillow. I especially remarked the following particulars:

“(a) The flash of her eyes—wild, excited, half-hopeful, half-defiant—such as I had never remarked in a sane patient before.

“(b) Her great suffering. Her constant cry was,—‘Oh! what I’m suffering! Oh! what suffering! What have I done that I should suffer thus?’

“(c) *Her restlessness and strength.* She was never for one moment at rest. She moved with ease, and any attempts to restrain her movements were difficult, and required considerable effort on the part of the attendants.

“(d) *Salivation.* A frothy saliva was constantly collecting in her mouth and between her lips. With her left hand she wiped this saliva from her lips, and rubbed it on the edge of the bedding. I particularly remarked that, when her left hand was unoccupied, she did not spit, but cleared away the saliva with her thumb and fore-finger, rubbing it on the bedding, or spattering it about, regardless of where it fell. When her left hand was held, and she was not vomiting, she was unceasingly spitting, and such was the quantity discharged, that, before I was many minutes beside her, my hands and dress were spattered over with the white froth which issued in profusion from her mouth.

“(e) *Vomiting.* This was, perhaps, her most distressing symptom. It was almost constant, difficult, painful, and straining. The quantity of matter discharged was not great, but was slimy, and of a ‘coffee-grounds’ appearance.

“(f) *Thirst—desire for liquids—and power of swallowing.* She complained of urgent thirst, with burning in her mouth, throat, and stomach. She did not appear to have any dread of liquids, nor did she exhibit any horror when it was proposed that she should drink to quench her burning thirst; on the contrary, she freely discussed what would be best for her, asked if she might have ginger-beer; and showed no annoyance when her aunt tried to jest with her on the love she had shown for so vulgar a beverage as gin and water. When liquid was actually brought to her, the following circumstances were well marked. She would not allow any one to put it into her mouth, but sat up in bed and, most reluctantly, and at last with a quick movement, seized the glass. She held it for an instant with a convulsive grasp, her hand quivering and spilling a portion of its contents, and then threw (pitched) the remainder into her mouth. Having emptied it, she cast the glass from her, regardless where it fell, and convulsively clutched her throat with her hand. A rapid, violent, convulsive movement of the throat and neck followed, and the fluid was jerked out by a motion not unlike that by which it was pitched in. The attempt to swallow increased the irritation of the stomach, and she immediately threw herself across the edge of the bed, and renewed her painful straining and vomiting. It was very doubtful if she *swallowed* any liquid,—a convulsive closure of the pharynx seemed to

arrest it, and eject it with an irresistible and powerful effort. Her existence at this time may be described as consisting of an unceasing round of tossing, complaining, salivating, vomiting, with convulsive movements in her throat, and a sense of suffocation from a never absent indestructible ball, to relieve which she clutched her throat with her hands, as if she would tear out what she could not otherwise rid herself of.

"(g) Her pulse was at least 150, regular, but not strong.

"(h) The intellectual faculties seemed unimpaired. She moved her tongue and jaw with perfect facility, and articulated quite distinctly and with great volubility. There was no appearance of mania or furor—not the slightest disposition to hurt herself or any one near her; on the contrary, her manner to her attendants was kind. There was no peculiar sound of her voice, nothing which could at all be likened to the barking of a dog.

"(i) She did not appear in the slightest degree to connect her illness with the bite of her favorite dog, or to have the least suspicion of the nature of her disease. She was early impressed with the idea that she was to die, and told her aunt that her 'doctors did not know what was the matter with her, and she wished that her body might be opened after her death.' This was said on Tuesday forenoon, before her medical attendants were at all alarmed as to the issue of her illness. She showed no fear of dogs. On the forenoon of the day on which she died, a terrier having come into her bed-room, her aunt ordered it to be put out. She seemed sorry when it left her, and, looking after it, said, 'Poor Jack!'

"Such, so far as I can recollect, are the principal circumstances which I remarked in this poor girl.

"The vomiting of coffee-ground matter, with burning heat in her throat, and extreme suffering, being very prominent symptoms, I confess that the suspicion immediately crossed my mind that the case was one of poisoning. I therefore gave directions that the matter ejected should be carefully preserved. I took a part of it with me to Glasgow, and gave it to Dr. R. D. Thomson, who, with great inconvenience to himself, but with that desire to oblige, and to make his high chemical attainments of use to his less qualified brethren, for which he is so much distinguished, immediately ascertained that it contained no acrid inorganic matter. I thought it necessary to communicate my suspicions to the girl's aunt, as well as to her medical attendants, and some circumstances being mentioned which rather seemed to corroborate my views and to implicate our patient, I, with their sanction, indeed at their express desire, stated them to the poor girl herself. She gave them a distinct, emphatic, and circumstantial denial, but showed no anger or irritation that I should entertain them. Her answers and her manner satisfied me on two points already adverted to—that her intellect was quite entire, and that there was a total absence of furor or mania. In a word, that the peculiar symptoms which I witnessed arose from overwhelming bodily suffering, and not from mental aberration.

"I remained with her for fully two hours, during which she had two large opiate enemata, and hydrocyanic acid by the mouth. As I have

already said, she did not refuse to attempt to swallow, but I doubt very much if any liquid reached her stomach. The medicine was pitched into her mouth, and the glass thrown from her hand in the manner I have already described.

"I had chloroform with me, and after the first opiate enema I proceeded to try it in the usual way. Great difficulty was experienced in getting her to inhale it. Not one instant was she at rest. Her hands being held, and her head steadied, I held the napkin before her face; but her gurgling breathing and livid countenance soon warned me that I must desist. Had I persisted, I am satisfied she would speedily have been suffocated.

"I sat beside her, watching the symptoms, for an hour; and seeing that ʒij laudanum by enema had no effect, and that the exhibition of medicine by the mouth was hopeless, I determined to try the chloroform again. Having laid her upon her back, with her head raised and steadied, and her hands forcibly held, I kept the napkin well saturated with chloroform opposite to, but two or three inches from, her face. She was soon gently under its influence, but never to complete insensibility. The effect on the symptoms was that the vomiting completely ceased, and the restless jactitation disappeared, or was easily controlled; but she did not cease hardly for one instant to speak in the most energetic voluble strain, and the froth continued to issue in considerable quantities from her lips. Her pulse varied, but frequently fell to little above, sometimes even below, 100. I continued to hold the napkin and watch the effect of the chloroform for about an hour, and having satisfied myself that, whatever the ultimate result might be, the inhalation was alleviating her sufferings, I left her, suggesting to Dr. Robertson and Mr. Hislop the propriety of continuing the chloroform as long as they thought they could do so with safety. I returned in the evening, and found that shortly before my arrival she had been relieved by death from her terrible sufferings. Mr. Hislop informed me that the chloroform had been continued with great relief till about half-past 4 o'clock, when the vomiting and spasms returned, and the pulse became so feeble that it was deemed prudent to omit it. The difficulty of swallowing continued to the last. "About twenty minutes before her death," says Mr. Hislop, "she complained of thirst, and I offered her a glass of gin and water. On taking it in her hand she became violently agitated, and in attempting to carry it to her mouth spilt it on herself and her attendants. She said it was the gin which prevented her swallowing, and I gave her pure water. The result was the same, and I do not think she swallowed a drop of the fluid. She sank rapidly from 5 o'clock, and died rather suddenly at 7 in a violent spasm, which seemed to suffocate her in an instant."

[The appearances disclosed after death accorded with the symptoms which had been most distressing during life—the painful choking and the vomiting.]

"There was a slightly increased vascularity of the membranes surrounding the upper part of the spinal cord, chiefly in the dorsal region and vicinity of the brachial plexus of nerves. This vascularity was accompanied in some places with a slight extravasation of blood on the

outer surface of the membrane, and this extravasation was more particularly evident about the middle of the cervical region of the cord. . . . The papillæ on the back part of the tongue were much enlarged, and the whole of the pharynx, along with the epiglottis and larynx, as far down as the vocal cords, were much congested, and covered with a tenacious frothy mucus, tinged with blood. On removing this tenacious mucus from the cavity of the larynx, its surface was here and there observed to be dotted over with little swellings, about the size of pins' heads, projecting from the surface. Examined microscopically, they seemed to consist of accumulations of little cells, varying in size from that of a human blood corpuscle to a pus corpuscle; all of them were more or less granular, and some of them nucleated. . . . The contents of the stomach consisted chiefly of a fluid, resembling in appearance coffee grounds; the granular and more solid particles appeared under the microscope to be made up of coagulated blood, more or less changed. Similar contents existed throughout the rest of the tube. The mucous membrane of the stomach presented a very much congested appearance, and more especially large patches near the cardia, where in many places streaks of blood could be seen extravasated on the mucous surface. Similar highly congested patches occurred in many places throughout the small intestine, with similar extravasated streaks of blood. These patches varied in size from three to four or even five inches in extent, and in the midst of them, both in the stomach and intestine, air was so abundantly extravasated as to inflate the submucous areolar tissue, and raise the membrane into the form of little air-vesicles, resembling in appearance the texture of the lungs in emphysema. All other organs were healthy."

[Dr. Lawrie's reflections upon the employment of chloroform, and upon treatment generally, are the following. "Great caution," he says, "is necessary in using anæsthetics in this disease. If carried so far as to prevent expectoration, the copious secretion of frothy saliva is almost certain to suffocate. As exhibited in this case, chloroform gave great relief, but as a curative it was powerless. I have tried it freely in tetanus with the same effect. It diminishes pain, but cannot cure; indeed, I fear its tendency is rather to shorten than prolong life. After my experience in this case, I should consider all attempts to treat hydrophobia by medicines given by the mouth as worse than useless. If we look upon the disease as a morbid poison, acting in an unknown manner on the nervous system, our indications will be to allay the consequent irritation, and fight against death with the hope that the poison may exhaust itself before life is extinguished. In this view strong soup, wine and brandy, given by the rectum, with free doses of sedatives exhibited in the same manner, would constitute the most rational treatment. We must not despair of discovering some medicine (possibly some well-known medicine applied in a novel manner, as ether by inhalation,) which will prevent death until the disease exhaust itself. Perhaps anæsthetics, *early* begun, before the stage of acute spasm and exhaustion have set in, may be of use. All treatment, whose effect is to diminish strength, should be discarded."]

2. [Dr. Sandwith's case agrees with that of Dr. Lawrie in the evidence it affords of the beneficial influence of chloroform in miti-

gating the sufferings of hydrophobia. It may be mentioned, also, that the remarks upon the hydrophobic state, and the alliances of that state, agree with our own published opinions on the subject.* Dr. Sandwith proceeds as follows:]

"Whether chloroform will prove to be an antidote for hydrophobia remains to be seen, and is an event rather to be desired than expected; but that it will procure an euthanasia is certain. In order to prevent speedy death from the exhausting effects of the spasms of the throat, and allow time for the elimination of the morbid poison in hydrophobia, it has been proposed to open the trachea. It would, however, appear from the following case, that all the advantages that could be derived from tracheotomy may be obtained from chloroform, and these in a manner far more agreeable to the patient as well as the medical attendant.

"Wm. Warden, aged 42, was attacked by a strange dog, and one of the fingers of the left hand was wounded, about six months prior to the outbreak of the symptoms of hydrophobia. The dog was immediately destroyed, and the wound healed so quickly that in the course of two or three days he was able to resume his occupation as a labourer in a tan yard. On the 4th of October he applied to one of the medical officers of the dispensary, on account of a pain in the left side, which was supposed to be rheumatic, and was treated accordingly. In the evening of that day symptoms of hydrophobia made their appearance, and the following morning he was visited by another medical man, who bled him from the arm to a moderate extent. The paroxysms increasing in frequency and violence during the day, in his struggles the bandage became loose, and he lost a very large quantity of blood. By this untoward event, and the exhaustion produced by his struggles to recover his breath, when nearly strangled by the spasmodic contractions of the muscles of the larynx, his strength was greatly reduced. His struggles during a paroxysm were said to be terrific, and it required the strength of four men to keep him down in bed.

"Through the kindness of Mr. Brandon, jun., I saw this patient at 8 o'clock, P.M., and remained at his bedside some hours. He was raving like a maniac, and was in a state of extreme debility. The face was pale, and the skin covered with a cold clammy perspiration; the pupils of the eyes completely dilated; the corners of the mouth retracted; the breathing hurried; the pulse 120 in a minute, thready and vermicular; and the paroxysms produced by the spasms of the throat terrible to behold. The head was on these occasions drawn backward, and he made the most vehement efforts to get out of bed, foam issuing from his mouth profusely.

"Some chloroform had been administered during the afternoon. I recommended it to be repeated, and had the satisfaction of witnessing its effects, which were almost magical. He was no sooner under the influence of this potent spell than his respiration became perfectly tranquil; some colour returned to his cheeks; the pupils contracted; the pulse became calm, and, considering his weak state, well developed,

* See 'Comments on Convulsive Diseases;' Churchill, 1851.

the number of pulsations in a minute not exceeding 84; and he lay in a state of happy delirium. A more pleasing transition from extreme agony to tranquil ease I never witnessed before. The effect of the remedy was maintained during the night by the occasional use of small doses; but he died the following morning, without pain or agony.

"It must be admitted that this was not a favorable case to test the power of chloroform as an antidote. The unhappy patient had lost so much blood as almost to induce me to believe that his death must be set to the account of phlebotomy, rather than to hydrophobia. But, on the supposition that we are not yet in possession of a specific for this frightful malady, which is too probable, it must be a gratification to every humane mind to know that it is in our power to alleviate the dreadful sufferings peculiar to hydrophobia, and render the last hours of an unhappy patient tranquil, and free from pain.

"In the case of hydrophobia related by Mr. Hunter, he says:—'The pulse in the beginning was not quick, nor was the skin hot, and there was none of the muscular debility so remarkable in fever;' and Dr. Currie, of Liverpool, who saw five cases, says:—'In none was there any sense of animal heat.' It is clear, therefore, that the disease is not inflammatory, and bloodletting is contra-indicated. There appears, indeed, to be an affinity between this disease and its congeners—hysteria, mania, and tetanus, in none of which is there an increase of animal heat. Galen calls mania the 'delirium sine febre;' and, according to Dr. Beddoes, 'it is certain that tetanus exists without increased heat,' which conclusion is supported by the experiments of Dr. Currie, whose remarks on the impropriety of bloodletting in tetanus are equally applicable in hydrophobia. 'It is deeply to be lamented,' says this able pathologist, 'that this disease should ever have been considered as of an inflammatory nature, and that there are, even now, physicians who treat it by venesection. It is in my mind decisive against this supposition, that though the general system is so powerfully affected, the animal heat is not increased, which it uniformly is in all cases where there is an inflammatory affection of the system, whether originating or terminating in local phlegmonic inflammation.'

Opium has always failed to give relief in hydrophobia. I cannot think favorably of large doses of arsenic, as recommended by Dr. Billing. We may, however, hope that as we have obtained a remedy for the painful symptoms of this distressing malady, an *antidote* will yet be discovered.

ART. 20.—*A singular case of Epilepsy, ending in Intermittent Spasms of the muscles of the left calf, and cured, after a duration of ten years, by the application of Ice, with remarks.* By S. G. CHUCKERBUTTY, M.D. Lond., M.R.C.S., &c.

Case.—Bechuram Doss, æt. 24, an inhabitant of Sibpore, a village near Calcutta, a weaver by caste, and married for ten years, was admitted under me into the Medical College Hospital, 31st December,

1850. He had a short neck, low stature, slender build, wiry constitution, and bilio-lymphatic temperament. His dwelling-house was situated in the immediate neighbourhood of an extensive marsh, which made it very damp; and as to habits, he had been very sober, never drinking intoxicating liquors of any description, and indulging only moderately in the use of tobacco, which he smoked,—his food generally consisted of rice, fish, pulses, and fresh vegetables.

In respect of his family he affirmed none of his relatives had ever been afflicted with this malady, and that both his parents were dead—the mother of fever, and the father of some obscure disease. As to himself, he stated that he could not recall to his mind any affection of importance before the occurrence of the present complaint, but that in the course of it he had had an attack of fever, which lasted for two months, and enlargement of the testicles for the last five years.

His present malady commenced about ten years ago (*i. e.*, soon after his marriage.) One day, while walking with some of his friends, he made a sudden pause on the road, and said that he felt giddy; almost immediately he fell flat on the ground, perfectly senseless, and violently convulsed. The men who had accompanied him forthwith hurried him home; but, after a few hours his consciousness returned, and he talked with them on what had befallen him. They told him that soon after the fall his whole body was violently convulsed, and that his mouth was full of foam and froth. In another hour and a half he had a second fit, precisely the same in character with the first, but with this peculiarity, that it left behind it a distressing headache and drowsiness, which lasted the whole night. For eight days subsequent to this he experienced no inconvenience whatever, when he had a third attack, preceded by an involuntary tendency to laughter, and a queer sensation mounting from the left leg to the head. On this occasion it came on while he was enjoying his night's rest, his consciousness remained unaffected; but there being convulsion of all the voluntary muscles, foaming at the mouth, dyspnoea, turning up of the eye-balls, and protrusion of the tongue. Henceforth the paroxysms recurred daily, at first once, latterly fourteen or fifteen times in the twenty-four hours. Having suffered in this manner for a whole year, he placed himself in the hands of a Mohammedan woman, celebrated in the neighbourhood for her power of curing such affections. Under her treatment, it seems, a stop was put to the recurrence of the paroxysms in three days. For a year after this, he enjoyed a complete immunity, and thought that he had at last got rid of the enemy. This hope, however, was not destined to be realised. Exactly after a pause of twelve months, a relapse of all his former symptoms took place, with this difference, that the fits now generally occurred during the hours of sleep, or when he lay in bed. Once more he applied to the same person who had cured him on the last occasion, but this time her treatment was found to be quite ineffectual. Seeing that all her ingenuity proved unavailing, he sought the advice of several native practitioners or kabeerajes: they, too, could do nothing for him. These repeated disappointments damped his spirits so much, that he said he felt his intellect and memory suffering with the length of the malady. He now abandoned all hopes of cure, and, in his despair, abstained from all further medical treat-

ment. In this state he remained, more or less, for nine years, when, his case being brought to the notice of a European gentleman, he was forthwith despatched to our hospital.

On his admission, he was seen by the house-surgeon, who administered a dose of comp. jalap. When seen by Dr. Chuckerbutty the next morning, the following account was noted down:

January 1st, 1851.—Chest well formed, right shoulder a little higher than the left, nose straight, commissure of the mouth straight, tongue also straight,—does not deviate either to the right or left, moist, clean at the tip and edges, and covered with a little fur, arranged in a honey-comb form in the centre and posteriorly; pupils of natural size, and naturally contractile on exposure to light; skin of the body generally natural. On percussion of the spine, a little pain is felt on a level with the spine of the scapula; bowels moved twice from the purgative he had last evening; appetite good; thirst moderate. The fits he had been subject to for the last ten years are felt mostly in the left leg; they occur, without any regularity as to intervals, many times in the twenty-four hours, and consists chiefly of a painful spasmodic contraction of the muscles of the left calf and thigh, the left half of the body generally being likewise convulsed, though not to the same extent as the left leg. The right half moves merely from the motion of the left, its own muscles not being in the least involved. The patient sweats profusely during the seizures, and shrieks out from pain; but there is no foaming at the mouth, and no loss of consciousness. In the intervals of these attacks he has a peculiar weary aching sensation in the left calf, but no involuntary movements.

R Hydrarg. c. cretâ, gr. ijss, ex. hyoscyami, gr. ij. Ft. pil. ter die sumend. Rep. pulv. jalap. co. Diet rice.

2d.—Had about twenty fits yesterday, fifty last night, and two this morning; bowels moved five times; tongue as yesterday; no sleep on account of the great frequency of the paroxysms; no headache; appetite good. Continue pills and diet. Make an issue to the left of the lumbar spine.

3d.—Gums sore; fits the same in frequency and violence as yesterday; bowels not opened. Diet and medicine continued.

4th.—Feels a little better this morning; has had about forty fits since last visit; soreness of the gums more marked. Omit. pil., continue diet.

R Quinæ disulph., gr. ij, acidi sulph. diluti, ℥ij, aquæ puræ, ℥j. Ft. h. ter die sumend.

R Pulv. jalap. co., ℥j, stat. s.; gargarisma aluminis sæpè utend.

7th.—The fits come on very often; gums and mouth still somewhat painful; fetor of the breath exceedingly offensive; salivation profuse; tongue moist, covered with a white fur on the surface; no appetite; pulse pretty good. Omit. mist. quin., rep. pulv. jalap. co., cont. garg.

R Argenti nitratis, gr. ss, ext. hyoscyami, gr. ij. Ft. pil. ter die sumend.

8th.—Thirty-two fits in the last twenty-four hours. Cont. med. and diet.

9th.—Sixty fits since last visit; bowels open. Cont. med. and diet.

10th.—Mouth much better; fits less. Cont. med. and diet.

11th.—Thirty fits since last report; fetor of the breath nearly gone. Cont. med. and diet.

12th.—Nineteen fits; bowels open; slept better; soreness of the gums very little; appetite good. Cont. med. and diet; apply ice to the left calf.

13th.—Says that he felt some relief from the application of ice, but that when there was no more of it to be applied, the fits returned with greater frequency and violence than before. Cont. med. and diet; repeat the ice; attend to the issue.

14th.—Fits less frequent than before, which the patient ascribes to the ice. The abdominal muscles, however, are now affected in addition to those of the left lower limb; countenance brighter than before, but rather dark; urine somewhat red; a little soreness of the gums continues; tongue moist, clean, but still pitted. Cont. med., diet, &c.

15th.—Thirteen fits. Cont. diet, med., &c.

16th.—Twelve fits, less violent than before; the peculiar sensation complained of in the left leg much less; secretions natural; a white honey-combed fur on the tongue. Diet, med., and ice cont.

17th.—Had only one fit yesterday, and two last night. Tongue looks more healthy; appetite as before; slept very well; bowels opened once; urine less red; slight soreness of the gums. Cont. diet, med., and ice.

18th.—Has had no fit since last report; felt a little of the same peculiar sensation in the left calf as before, without its passing into cramps. Tongue much the same; complexion a little darker than formerly; complains of inappetency and weakness; slept well; bowels open. Cont. diet, med., and ice.

R Olei ricini, ζ ss, stat.

19th.—No return of fits since the day before yesterday. Tongue tolerably clean and moist; was feverish last evening; appetite bad; bowels opened four times from the castor-oil. Cont. pil. and diet; omit ice.

R Quinæ disulph., gr. x, half an hour before the expected return of fever.

20th.—Has had a little quivering in the left calf, but no cramps or fits; fever less. Diet and pills cont. Repeat quinine.

21st.—Feels very weak; bowels moved ten times; stools soft, *æculat*, yellowish, and slightly slimy, and passed with considerable straining; complains of a griping pain now; there was no fever yesterday; the peculiar sensation in the left calf continues, but there has been no cramp or fit for the last five days; the honey-comb fur of the tongue is completely gone; appetite good; body generally greatly reduced. Cont. diet and pills. Omit quin.

R Mist. cretæ, ζ j, tinct. catechu, tinct. opii, \bar{a} \mathfrak{N} xx, haust. ter die sumend.

22d.—Has been to stool four times; the peculiar sensation in the left calf is still felt; tongue almost clean; slept sound. Cont. diet, pills, and mixt.

23d.—Three scanty motions; issue discharges freely; otherwise the same. Omit mixt., cont. pills.

R Ol. ricini, ζ ss, stat.

24th.—The quivering sensation less; issue painful, and prevented sleep; four motions from the oil. Cont. pills. Take out the issue, and apply a poultice to the sore.

25th.—Four motions, soft, feculent, dark; no good sleep; quivering diminishes. Cont. pills and diet.

℞ Mist. cret., ʒj, tinct. catech., ʒss; tinct. opii, ʒss. Ft. h. bis die sumendus.

Same dressing to the issue sore.

27th.—One motion, smooth and hard. Omit chalk mixture.

28th.—Bowels regular; issue healing; quivering less; scrotum painful. Apply tinct. iodid. to the scrotum.

31st.—Has been uninterruptedly improving since last report; a very slight quivering remains; issue discharging freely, and contracting at the edges; testicles smaller than before; slept well. Cont. diet and pills, and resume the application of ice to the left calf; poultice the sore.

February 1st.—Quivering much less from the ice; two motions; pain in the abdomen, felt more especially when the stomach is empty; appetite good; no sleep last night. Cont. pills, ice, and diet.

℞ Olei ricini, ʒj, stat.

5th.—Had a slight quivering only once yesterday; complains of a burning in the legs; sweats at night; sleeps badly; appetite good. Cont. diet, pills, and ice, and dress the issue with the sulphate of zinc lotion.

9th.—Feels a deal stronger than before; has had three stools, apparently natural, but passed with straining; some pain continues still in the abdomen; there is now scarcely any quivering in the left calf; appetite very good; sleep sound. Cont. diet, pills, ice, and lotion.

℞ Olei ricini, ʒj, stat. s.

11th.—Has had no quivering whatever since yesterday's visit; complains, however, of much pain in the left iliac and lumbar regions; complexion darkened; tongue quite natural; testicles smaller; issue healing. Omit pills. Cont. diet, ice, and lotion.

℞ Zinci sulph., gr. ij, ext. hyoscyam., gr. ijss. Ft. pil. ter die sumend.

He now progressed satisfactorily in every respect until the 15th instant; when the sore of the issue suddenly assumed a phagedænic action, its smell becoming highly offensive, the face puffy, and tongue furred, &c., on account of which he was transferred, on the 16th inst., to the surgical ward. Here he remained for about a month for the healing of the sore, during which there was no return either of the quivering or cramps. Some weeks after his discharge, he came back to thank us for his cure, and subsequently presented himself before the gentleman who had sent him to the hospital, in order to express his sense of gratitude to him, and to bless him for his recovery. More than a year has elapsed since then, and there is no reason to believe that the disease has returned.

The history of this case reveals that the disease set in at a comparatively tender age, (*i. e.* fourteen years,) and soon after his marriage. It might thence be suspected, that the weakness caused by this premature marriage was the immediate cause of the malady, seeing that there was no hereditary taint in the family; and the author has no doubt a suspicion of the kind might be plausibly entertained in Europe, where, at the time of this event, the female is fully developed for immediate cohabi-

tation. It is different, however, in this country; here the wife at this time is seldom more than nine or ten years of age, and, therefore, sexual intercourse with her is a matter of impossibility. Hence this source of debility could not have been the cause of his complaint. Leaving aside, then, hereditary predisposition, and change of condition, were there no other debilitating agents which might have given rise to it? As to food, he had always plenty of it; so it could not have originated in inanition. His occupation, too, was active; he was a weaver, and generally pursued his business in the open air, the yarn being spread under a shady tree, or in a court-yard, according to the custom of those of his calling, and the weaving conducted by manual labour. Although it does not appear in the history of this man, it is still a melancholy truth, that the habit of masturbation obtains to a very great extent among the natives of this climate; nothing is more pernicious than this habit, and nothing more predisposing to epilepsy. When the vice is so general, it is scarcely to be doubted that it existed in this patient, although it would have been more satisfactory if we had had more direct evidence of this fact. In addition to this presumed habit, we find him first assailed by the disease in the middle of a walk; therefore, it is not at all improbable that the influence of the sun had a large share in calling it forth.

With regard to the nature of the malady, his description was too precise to admit of a doubt that at first it was epileptic. Its subsequent course was exceedingly singular; the muscles of the left lower extremity seemed to be principally affected, and his consciousness was not lost during the paroxysms. The disease gave way for a year, and then recurred with all its former symptoms. Might it not, then, be a case of chorea? The spasmodic character of the later seizures, and their confinement to one set of muscles, would certainly favour such an hypothesis. His age, too, was that at which it is to be generally expected, (*i. e.* from nine to twenty-seven,) according to Dr. W. S. Kirkes's observations. The intermittent character possessed by these fits might have been impressed upon them by the marshy atmosphere in which he resided.

The most curious part of the case was the treatment. He had at first gentle mercurials, with purgatives, with a view to correct his secretions. He had scarcely followed this plan for two days, when salivation supervened, and we were obliged to give it up. Next, an issue was tried, equally unsuccessfully; then he had the nitrate of silver, with hyoscyamus, and an occasional purgative; and, before the nitrate, some quinine mixture. Even now there was no improvement. It was after all these had been employed ineffectually, that we thought of applying ice to the left calf, in conjunction with the internal administration of tonics. No sooner was this done than a marked improvement was the result; and, in a few days more, the fits were completely arrested. But a quivering of the flesh remained in the left calf, and, on a fever coming on, the local application of ice was temporarily omitted. The fever went off in one or two days, and the re-application of ice was deferred for several days more, to see if the quivering of the calf would cease without it. It did not cease without it. And no sooner was the ice reapplied, than an improvement was im-

mediately observable, which, in a few days more, ended in completely arresting the quivering, and permanently curing the patient.

[In reference to this case we find it difficult to record our adhesion to Dr. Chuckerbutty's views. We might take exception to a part of the diagnosis, inasmuch as the primary disease seems to have been epileptoid rather than epileptic in its characters; but we pass on to two other points—the state of the system, and the influence of the ice.

Dr. Chuckerbutty inclines to the opinion that the system was not in a debilitated state, and endeavours to explain away the probable consequences of early marriage, and of that abuse to which eastern youths seem particularly addicted, but this explanation, as we take it, is scarcely satisfactory. On this point, however, he affords us no means for forming an independent opinion, for, strange to say, the state of the pulse, the most material fact in the matter, is never mentioned, except once incidentally, when it was "pretty good," or in other words, not good enough.

With regard to the ice the evidence is clearer, and that evidence seems to signify that the influence was *not* that which is attributed to it. The treatment with mercurials, purgatives, nitrate of silver, quinine, issues, and the rest, is said to be unsuccessful, and yet one or other part of it was persevered in during the application of the ice, and not only so, but in a long interval in which that application was suspended. The fits, also, had already become less frequent, for in the twelve days which preceded the use of the ice, their daily number had subsided from upwards of seventy to nineteen. The effect of the ice, also, was to cause an extension of the spasmodic symptom from the leg to the muscles of the abdomen. Again, the ice is discontinued from the 15th to the 31st of the month, and, notwithstanding this, there is a manifest improvement in the symptoms, the only relief of the cramps and fits at the end of this time, being a slight quivering in the affected leg. Ice is again employed to arrest this quivering, and *seven days afterwards* the quivering ceases.

With regard to the concomitant treatment, we have only to say that the *quinine may* possibly have had something to do with the result (if the treatment had any such connection), seeing that there is some reason for supposing that the symptoms might have partaken of an aguish character. But be this as it may, we can find no manner of proof whatever that the ice had the beneficial influence ascribed to it.

This adverse criticism is ventured with much unwillingness, because we have a high opinion of Dr. Chuckerbutty's talents, as well as a full appreciation which attaches to him (as the editor of the 'Med. Times and Gazette,' properly remarked) as the first native contributor to our store of medical knowledge from our Indian empire.—ED. H.-Y. A.]

ART. 21.—*Report of a Case of Catalepsy, illustrating some new principles of Treatment in Convulsive and Spasmodic Diseases.*
By C. B. RADCLIFFE, M.D., L.R.C.P.

(From the *Lancet*.)

William B—, æt. 12, residing with his parents at Shepherd's-bush, Bayswater, was seized on the 1st of February last with a painless

rigidity of his fore-arms and hands, which lasted without any interruption from tea-time, when it first made its appearance, until bed-time. Similar symptoms also recurred daily for many days, sometimes beginning early in the morning and lasting throughout the day, at other times merely showing themselves for a few minutes, while the patient was preparing for bed; and so they continued to do until the 28th, at which time they extended to the feet and legs, and in a less degree to the upper arms, thighs, and trunk, consciousness being completely suspended, which was not the case previously. These general symptoms, which were evidently those of catalepsy, alternated with the more partial symptoms, occurring several times in a single day, and recurring throughout the whole of the next week, at the expiration of which period the case was brought to me.

During all these fits, partial or general, the rigid parts were cold,—so cold as to cause some of the bystanders to say they were dead. Cold, also, had evidently much to do in the matter as an efficient cause. In the earlier stages of the affection, playing out of doors (the weather at the time being very severe) invariably sent the patient into the house crying, with his hands and forearms immovable; and the exposure caused by undressing in a cold bed-room at night gave rise to the same symptoms. On the morning on which he was brought to me, also, the cold had acted in the same manner, and it was not until he had been some time seated in the warm room that the stiffening relaxed. I had thus an opportunity of satisfying myself that the parts which had lost their pliability were in reality cold, and that the pulse in them was almost extinguished, and the sensibility all but departed. I had the opportunity of satisfying myself also that this depressed condition extended more or less to the system generally, and that all the mental and bodily functions were as far as possible removed from anything akin to excitement.

The other facts in connection with this case all denoted the want of real power. He was anything but precocious,—not walking for two years, and not talking for a year later, and now speaking with hesitation,—very slow in apprehension, feeble in memory, and, though twelve years of age, as irritable, uncertain, and fretful as an infant. His head is large; his eyes staring, and the pupils dilated and sluggish; his complexion sallow and venous; his hand cold and clammy; his pulse slow (70) and feeble; his body prominent and hard; his skin unhealthy and covered with boils; his appetite voracious. Both parents appeared to be healthy; but a cousin of the mother suffered from fits of a similar character, and lost her life in one of them, by falling from a foot-bridge into a brook.

Acting upon received views, that *increased* irritation in the chief nervous centres had to do with the muscular rigidity, Mr. Roy, of Brook-green, had tried the usual course of leeches behind the ears, blisters to the nape of the neck, low diet, mercurials, hot mustard fomentations to the feet, and so on; but finding the symptoms becoming more general and confirmed, he sent the case to me.

The treatment I pursued rested, on the contrary, on the supposition that if rigidity was dependent on a *diminished* supply of nervous and other motive stimulus, a view which I have elsewhere endeavoured to

substantiate in relation to all forms of muscular contraction, normal and abnormal. I therefore recommended that the patient should be kept *still*, and as warm and comfortable as possible; that animal food and good table-beer should be given him freely; that he should be undressed before the fire, and carried to bed wrapped in warm flannels, having been first for some time immersed in a hot bath; and that he should take every few hours a small teaspoonful of spirits of turpentine, with ten drops of aromatic spirits of ammonia, mixed up with a part of the yolk of an egg, in a little ginger wine.

A fortnight after this first interview, I saw the patient again, and found that the draught had occasioned a little irritation in the bladder, but so little that there was no necessity to discontinue the remedy. On the other hand, it had put a stop to a troublesome and old-established habit of micturating in bed. As to the rest, there was a material improvement in every respect, the countenance being brighter and more energetic, and there having been no cataleptic rigidity from the day the stimulant and nutritive plan of treatment had been put in practice.

I saw the patient no more; but I learned from the mother, who called two months subsequently, that the treatment had been carried out for a month longer, that the fits had never returned, and that he was then in better health than he had ever been before.

ART. 22.—*Two Cases bearing upon the Nature and Treatment of Tetanus*; by (1), Mr. J. M. SALTER, of Dorset; and (2), by Mr. T. F. SANGER, of Alfreton, Sussex.

(1. *Lancet.* 2. *Medical Times and Gazette.*)

1. [Mr. Sanger's case is related as one of "*gout and trismus following injury of the foot*," but it is copied here for the incidental light it sheds upon the nature and treatment of tetanoid symptoms. It is that of an old man, upwards of 73 years of age, whose foot had been lacerated in a thrashing machine, so as to require partial amputation. After the operation, the foot is described as "very pale and numbed," and the skin as "continually moist." The treatment, the while, consists of morphia and aperient pills, with strong purgative mixtures of salts, senna, and tartar emetic. When the tetanic symptoms make their appearance, there is great lassitude, and a cadaverous expression of countenance, and the reality of the depression is further apparent in the immediate adoption of strong stimulant measures, in the shape of repeated glasses of brandy and water, and repeated draughts of aromatic spirits of ammonia.]

All this seems to show that the tetanic symptoms occurred in a state of unequivocal depression; indeed it could scarcely be otherwise in a patient so old, so injured, and so antimonialised and purged.

This conclusion is also borne out (or seems to be) by the sequel, for the convulsive symptoms are seen to have been twice dispelled by the stimulants employed.]

The Case.—"Mr. H—, a respectable yeoman in the neighbourhood of Blandford, Dorset, met with a severe accident on the 23d of December last. His left foot was caught in a thrashing-machine, by

which the fore part of his boot was torn away, together with the extremities of three of his toes as far as the first joints. Having removed the portions of crushed bone and lacerated integument, I formed a flap over the stump of the great toe, and dressed the parts in the usual way. There was scarcely any hæmorrhage; the foot was very pale and numbed. His age being more than 73, I of course anticipated a troublesome case, and told him there was danger of tetanus or trismus, although from my past experience at home and abroad, I felt sure of being able to bring him through safely, and preventing the trismus (should it occur) from being fatal; but a great deal would depend upon my directions being strictly adhered to. The accident occurred about 4, P.M. At 6, P.M. I gave acetate of morphia, a quarter of a grain; calomel, three grains; powder of rhubarb, three grains: divide into two pills, to be taken directly. About 9, P.M. I gave the following mixture:—Epsom salts, one ounce; potassio-tartrate of antimony, two grains; infusion of senna, six ounces and a half; syrup, one ounce; aromatic spirits of ammonia, three drachms: to have three table-spoonfuls every four hours until the bowels are moved. That night the sleep was excellent, a nice moisture on the skin, and the next day he could not feel that anything had occurred to the foot.

“The next night I repeated the pills of morphia, which produced the same sleep and moisture as on the previous night; but the next morning tetanus made its appearance in the extremities, followed by symptoms of trismus. He complained of great lassitude, and considerable pain and difficulty in moving the jaws; the countenance assumed a cadaverous appearance. I gave him muriate of morphia, a quarter of a grain; powder of rhubarb, three grains, in form of a pill, to be taken directly. I then administered a good strong glass of brandy and water; an hour after, a dose of cordial mixture, with aromatic spirits of ammonia, and repeated the brandy and water three or four times in the course of the day, with the mixture as above.

“On the fifth day, gout made its appearance in the right foot, and trismus again set in. The morphia and rhubarb pills were repeated, with brandy and water, as before. The gout left the foot, and attacked the stomach, at the same time the patient complaining of great pain in the jaws. Nitrate of potash, a drachm and a half; wine of colchicum, three drachms; aromatic spirits of ammonia, three drachms; powder of rhubarb, ten grains; syrup, an ounce; add water to six ounces: two table-spoonfuls to be taken every two hours. By the third dose relief was procured, and he felt perfectly free from pain.

“During the first three or four days there was a little hæmorrhage, but nothing of importance. There was considerable sloughing, and the fætor was intolerable. On the seventh day symptoms of gangrene and a white line reaching from the toes to the ankle. Having cleansed it with warm water, I applied tincture of lytta to the sloughs, and poultices saturated with black-wash. At night repeated the calomel and morphia pill. Next day another severe attack of the jaws came on. Repeated the morphia and rhubarb pill, with brandy and water, and giving the aperient mixture. Slept well. On the ninth day all the symptoms of trismus had disappeared, and he felt his jaws as well as ever; the pulse soft, full, and regular; spirits cheerful; system

quiet. Being excited by some unexpected visitors that day, considerable irritation followed, and the trismus appeared again the following day, but was subdued by the repetition of the former remedies, and he slept comfortably that night. On the tenth day he was composed, but had a little delirium, and while sleeping comfortably about two in the morning was seized with tetanus in his arms and legs, which awoke him; it then seized the jaws with greater violence than before. The morphia pills were repeated, with the aromatic spirits of ammonia, two drachms, in a mixture, at intervals, and during that day he took nearly a pint of brandy. The foot assumed a more unhealthy appearance, more gangrenous, and the line to the ankle more apparent; pulse small and feeble; tongue coated and feverish. Gout returned during the day; hiccup and delirium. The morphia pills were repeated three times that day, with the aperient mixture. His foot was held over a foot-pan with water nearly boiling; a large cloth five times doubled was dipped in the water, and applied to the foot; this caused much pain, but was continued for an hour. The patient was easier after, and the hot water was repeated in the evening; and at bed-time, calomel, three grains; powder of rhubarb, three grains; acetate of morphia, a quarter of a grain; make a pill, to be taken immediately. He had some sleep; hiccup diminished; delirium less; tongue and pulse the same as in the day.

"January 3d, 1852.—Was evidently better in every respect, but he complained occasionally of pain and inability to move his jaws, which he did for some time afterwards. Some days he felt as if he had never been affected; on others, very strong tendency to absolute trismus. I continued at intervals the pills, the gout mixture, and the brandy, regulating his bowels with the aperient mixture above. Living near him, I had every opportunity of watching him closely, and attending to every symptom as it occurred; and I had the satisfaction of seeing him walk half a mile by the latter end of the month with ease. Being fond of walking, he continued his exercise, and in March could travel four miles on foot without feeling any inconvenience, and now continues his usual exercise in good health."

2. [Mr. Sanger's case is described as "*traumatic tetanus successfully treated by sulphate of quinine*," with the aid (we may add) of ammonia and turpentine. The spasm occurs when the system is too low to admit of depressing measures, the countenance being anxious, the pulse (98) feeble, and so on. A contrary plan is therefore pursued, and as the system rallies, the spasm relaxes. This is the seeming interpretation of the facts of the case.]

The Case.—"Ruth Haryott, a delicate looking young woman, æt. 21, wounded her hand with a green gorse or furze prickle on the 16th of February. She suffered a great deal of pain from the poisonous nature of the gorse, and, after a few days, matter formed under the fascia of the palm. On Wednesday, the 25th, after poulticing it, some matter escaped from a small opening; and, on the 26th, I made a free incision, which allowed the escape of more pus and some blood. As there had been a great deal of pain and constitutional irritation, I gave her some calomel and opium, a saline mixture, and ordered hop fomentations and poultices to be applied to the wound.

"On the evening of the 27th, stiffness of the jaws was first noticed, but not of sufficient extent to alarm her friends.

"28th.—The stiffness of the jaws greater, and her friends becoming alarmed, sent for me. I found the jaws very rigid, with the teeth close together, great anxiety of countenance, wrinkled forehead, difficulty of swallowing, pulse 98, feeble, and understood that after the wound was enlarged she had felt at times very faint, the abdomen very hard, bowels confined, never suffered from amenorrhœa,* the wound looking unhealthy, with jagged, flabby edges, and scanty thin discharge.

"I considered this was a case in which the depletory treatment—*i. e.*, bleeding, warm baths, &c.—was contra-indicated, but that the plan pursued by Mr. Cock, in a case reported by him last year in the 'Lancet,' of June 28th, 1851, and which proved successful, would be the most appropriate. I, therefore, after unloading the bowels with croton oil and a turpentine enema, which acted four or five times, ordered the following:

"R Kinæ disulph., gr. viij; ammon. carb., ʒj; mist. camphoræ, ʒvijss; tinct. cinch. comp. ʒiv; ft. mist. 1-6th part 4tis horis.

"R Spt. terebinth., ʒj; vitelli ovi., q. s.; tinct. cannabis Indicis, ʒij; aquæ ad ʒiv; ft. embrocatio to rub on the spine three or four times a-day.

"Generous diet: beef tea, eggs, wine, &c.

"29th.—Bowels open, muscles less rigid; able to put out the tongue a very little way; still feels faint and weak; says that the application to the spine produces a sensation of sickness.

"Repet. medicament.

"March 1st.—Wound looking better; abdomen softer; jaws still stiff and rigid, but not worse than yesterday; pulse 90, feeble. Not being able to swallow pills I ordered the following aperient mixture.

"R Solut. aloes (mettaurs) ʒss; mist. senn. comp., ʒjss; tinct. valer. ammon. ʒij; ft. mist. capt. 1-4th part subinde.

"Repet. mist. kinæ c. ammon., ʒvijj. Appl. ung. resin. c. terebinth. to the wound.

"4th.—Found her sitting up; said she was better, but complained of feeling very weak and languid; the jaws are still rigid, and although able to open them wider, not sufficiently so to enable her to masticate her food; the countenance looks brighter, less wrinkled, and anxious; bowels kept open by the aperient; pulse 70, very weak; wound healing.

"Cont. medicament.

"8th.—Progressing favorably; can open her mouth to about two thirds its usual extent; tongue clean; pulse 70; appetite good; feels stronger; wound healed.

"Cont. medicament.

"15th.—Gradually improving, and is going from home for change of air.

"31st.—Returned home quite recovered; can open her mouth to its full extent, and does not feel the least stiffness or inconvenience.

* "I was particular in my inquiries on this point, as at first I thought it might be a case of hysterical trismus; but the catamenia had been always regular, and she had never suffered from hysteria."

ART. 23.—*Muscular Atrophy consecutive upon [coincident with] Convulsive Phenomena in the same part.* By DR. CH. BERNARD.

(Gazette Médicale de Paris.)

[The following is one of two cases reported as contributions to a class of disorders which has lately attracted some attention on the Continent, under the titles of progressive and partial muscular atrophies, or *trophoneuroses*,—the previous writers on the subject being MM. Aran, Romberg, Lassaigne, and Bouvier. It affords an illustration of what we believe to be a *fact* in muscular pathology, namely, the connection between chronic convulsive phenomena and a state of atrophy in the affected parts; and this illustration is all the more valuable from the opportunity it affords of contrasting in the same person the unhealthy with the healthy condition of muscular action.]

Case.—X—, aged 24, was admitted, in August last, into the Hôpital Ste. Marguerite, under the care of M. Moutard-Martin, at that time attending for M. Tessier. He was of moderate height, brown complexion, and spare figure. He suffered from three kinds of morbid phenomena—considerable atrophy, continual convulsive movements, and permanent contraction of the whole right side of the body. The other side was perfectly healthy.

The atrophy was more marked in the trunk and limbs than in the face, but it was sufficiently perceptible there also. The muscles of the right side were all of them shrunken, soft, and flaccid, except when under the influence of the convulsive contractions. The bones had undergone no perceptible alteration. The other side was firm, and fully developed.

The convulsion affected the whole of the same side, but was more marked in the limbs than in the trunk, and more in the arm than in the leg. This side was continually in motion—the trunk working and writhing, the limbs starting and jerking, the face catching and twitching. The other side remained at rest.

The contraction, like the convulsion and atrophy, extended to the whole of the right side, and, like them, never entirely passed off. Owing to it, the arm remained flexed and the leg extended, the hand grasped, and the heel drawn up so that the toes only rested on the ground. This contraction might be conquered, but not without considerable force. It was distinctly bounded by the median line.

Intelligence and sensation were little affected, the only noticeable peculiarity being that the eyes were a little too prominent, the pupils dilated, and the sight feeble. The several functions of animal life—respiration, digestion, and the rest—were perfectly healthy.

[Dr. Bernard complains that he had but scanty opportunities for making minute observations, owing to the restlessness of the patient, which would not allow him to remain for any length of time in the hospital. He ascertained, however, that the symptoms began, about seven years previously, with a cerebral attack, attended with stupor, and that such attacks had not been unfrequent, the muscular symptoms being worse after each.]

ART. 24.—*On the use of Iodide of Potassium in the Treatment of Sciatica.* By M. IZARIÉ.

(*Revue Médico-Chirurgicale de Paris*, May; and *L'Union Médicale*.)

M. Izarié commences his short communication on the use of iodide of potassium in sciatica with a saying of Marjolin, when an old man, that no remedy ought to be rejected without a trial, merely on account of seeming unsuitableness. This remark, he says, applies more particularly to remedies for nervous affections like sciatica, all of which remedies have more or less of an empiric character connected with them.

Iodide of potassium, he then goes on to say, is no new remedy. In some instances it has succeeded where other means have failed; in others it has failed equally. He has, however, been personally benefited by its use; and the wish to extend this benefit to others causes him to place the fact on record, as well as to mention two cases which led to the trial.

The first case is that of M. B—, a gentleman in his 56th or 57th year, of a bilious temperament, and whose only trouble had been an occasional twinge of sciatica. The attack in question happened in September, 1851, and was of very considerable violence. For fifteen days, bleeding, counter-irritation, and the local application of morphia, were tried without avail, when it occurred to the "officier de santé" in attendance to try the iodide of potassium. Eight grains were prescribed, in a little sugar and water, twice in the twenty-four hours. This was given for two days; and the result was that the pain abated after the first dose, and ceased, not again to return, after the third.

The next case is that of M. de V—, æt. 30, also of bilious temperament. He says that he took iodide of potassium in the same quantity for a violent attack of sciatica, being recommended to do so by his neighbour, M. B—, the patient last mentioned, and that by this means he cured himself in forty-eight hours.

The third case is that of M. Izarié himself, who was seized with sciatica while staying temporarily in the village in which the first two cases occurred. He had been in bed ten days and nights, when he heard from M. de V— of the cure effected by the iodide of potassium in his own case and in that of his neighbour. He tried the remedy, and was cured immediately, the pain yielding almost to the very first dose.

Such is the substance of M. Izarié's communication.

(B.)—RELATING TO THE RESPIRATORY SYSTEM.

ART. 25.—*On Topical Medication in Affections of the Larynx and Trachea:*—1. *Further Evidence on the Practicability of such Medication*, by Dr. HORACE GREEN, (U.S.) 2. *The Effects in Acute Inflammations*, by Dr. EBEN WATSON. 3. *The Effects in Hooping Cough*, by the same.

(1. *Lancet*, Sept. 10th. 2. *Dublin Quarterly Journal of Medical Science*, June.)

1. [Dr. Horace Green's communication is deserving of much atten-

tion, from the additional evidence it affords of the practicability of passing the medicated probang to the very bottom of the trachea.]

"I was," he writes, "much interested in reading the report of a discussion which took place in the London Medical Society, on 'Topical Medication in the Treatment of Diseases of the Pharyngo-Laryngeal Membrane,' which has been reported in a number of the American reprint of the London 'Lancet.'

"With most sincere thanks to the gentlemen of that Society, who did me the honour to allude with approbation to my efforts made to advance this branch of practical medicine, I must beg the privilege of making some remarks upon one of the questions which occupied their attention during this discussion,—namely, the practicability and safety 'of introducing a sponge-pointed probang through the rima glottidis into the trachea, and down to its bifurcation.' Several of the members present expressed their conviction that this operation cannot be performed, and one or two had 'arrived at the positive conclusion that an instrument cannot be passed with facility and without danger below the rima glottidis' even.

"When, in 1840, I brought before the Medical Society of New York the subject of the treatment of diseases of the larynx, by means of the direct application of therapeutical agents to the lining membrane of this cavity, and asserted the safety and utility of their employment, the proposition was received by a very large proportion of the profession with entire incredulity, many of them declaring that 'to apply topical remedies below the epiglottis was an anatomical impossibility.' It was soon found, however, that topical medication was a method of treatment most appropriate to certain forms of laryngeal disease; and thinking, practical men, were not slow to adopt a plan that was found feasible and successful in the management of these affections. Consequently, such a mass of testimony was soon accumulated on this point, that the most incredulous were obliged to admit the practicability and the benefit of the operation. But when, in the publication of my work on 'Diseases of the Air-passages,' in 1846, the statement was made that when tracheal disease existed the sponge-armed probang could be passed, ordinarily, without difficulty, through the rima glottidis, down to the bifurcation of the trachea, and that the operation in my hands had been repeatedly performed, the 'old fogies' of the profession were again shocked and alarmed; the possibility of this operation was positively denied, and, in unmeasured terms, 'Young Puff-blow' was abused for having suggested such 'unwarrantable and dangerous innovations in the practice of medicine.' Still, those physicians who had succeeded in passing the instrument into the glottis ventured, in cases of aphonia, or in ulcerations of the tracheal mucous membrane, to push the sponge through the glottic chink into the trachea, and down to the bifurcation; and it was found that this operation was not only facile and safe, but one of the greatest advantage in some of the above conditions of disease. The question, therefore, of the practicability of this operation was no longer a mooted point, and I can assure the gentlemen of the Medical Society of London that I have succeeded in passing an armed probang down to the bifurcation of the trachea, probably over five hundred times; and this has been done in

the presence of half that number of medical men, all of whom, if required, will give their testimony to the fact. In no case have I seen any injury arise from the operation.

"In most cases, however, of disease of the laryngo-tracheal membrane, it is only necessary to pass the sponge into the larynx; for the contraction of the glottis, which takes place on the introduction of the instrument, presses the fluid from the sponge, which trickles down, and is diffused over the tracheal membrane. But whenever ulcerations of the tracheal membrane exist, I have found it exceedingly advantageous to pass the sponge, saturated with a strong solution of the nitrate of silver, along the whole length of this tube. In cases where I have had reason to believe that ulcerations of the membrane had extended below the bifurcation, I have employed a probang nearly straight, armed with a sponge, and have pushed this instrument not only down to the division of the trachea, but, turning it aside, *have passed it at will, in many instances, into the right or left bronchus, with as much ease and safety as the catheter is introduced into the bladder.*

"That there may be no doubts upon this point, I will give briefly the details of one case, in the treatment of which this operation was performed many times in the presence of several eminent medical gentlemen of this city, who attended from time to time at my office expressly to see the operation.

"In January, 1849, Mr. A—, a young clergyman from Canada, who was suffering from laryngeal phthisis, came under my care. He had been affected for several years, and was much emaciated. A very troublesome cough, which was attended by a constant expectoration of pus, was present. Complete aphonia had existed for more than a year. On examining his throat, the epiglottis was found much thickened, and its border serrated with ulcerations. Topical medication, with appropriate general treatment, was employed. Applications of the nitrate of silver were made, first to the epiglottis, then into the larynx, and subsequently, through the rima glottidis, into the trachea. Under this treatment the patient improved rapidly; the cough and expectoration diminished; and after a few weeks of treatment, there seemed to be present but little indication of disease in the larynx or trachea. Still some degree of cough remained, and the aphonia was as complete as in the commencement of the treatment.

"All along the patient had complained of a sore spot directly under and below the right clavicle, and this remained after the improvement I have mentioned had taken place. Believing that ulceration existed in the bronchial division at this point, I determined to reach it with the caustic applications. Selecting a long and nearly straight probang, and directing the head of the patient to be thrown well back, I passed the instrument into the trachea, and carrying it down to the bifurcation, turned it a little to one side, and pushed it nearly two inches into the right bronchus. On withdrawing the sponge, it was found covered with pus; and Mr. A— remarked that 'the right spot had been touched for the first time.' This operation was repeated daily for several days; and as soon as the ulceration at this point had healed, which took place after eight or ten applications to the part, the voice of the patient, which for a twelvemonth had been lost, was restored.

"In the 'New Hampshire Journal of Medicine' for April, 1852, is the history of a case, reported by Dr. E. R. Peaslee, Professor of Anatomy, &c., in Dartmouth College, which well illustrates the *capacity* of the human larynx to receive foreign bodies of considerable size into its cavity. The details of this case, which is one of great interest, are given at length by Professor Peaslee; but I will only allude, with much brevity, to the principal points in the case. The patient, who was a well-made, robust man, aged about 44, having lost the cartilaginous and also a part of the bony septum of the nostrils, from a scrofulous affection, was in the habit of introducing a piece of moistened sponge into the nasal passages several times a day, to remove the fetid secretion produced by the still progressing disease just mentioned.

"On the 23d of July, 1853, while applying the sponge as usual, he accidentally let it slip from his fingers, and it passed back at once through the posterior nares. A paroxysm of coughing, with considerable dyspnoea, at once ensued; and Dr. Peaslee, being hastily sent for, saw the patient a few minutes after the accident occurred. He at once passed his finger into the pharynx, expecting to dislodge the sponge; but failing in this, and being assured by the patient that he felt the sponge lower down in the oesophagus, he explored that part with the long curved pharyngeal forceps, and thus ascertained that it was not in the pharynx at all. On questioning the patient as to the precise size of the sponge, he declared to Dr. Peaslee that it was 'as large as half a hen's egg.' As he was a man of accurate judgment, and was positive as to its size, and, moreover, as his breathing became easier, and his cough ceased almost entirely, Dr. Peaslee assured the patient that if his estimate of size was correct, it was 'almost an anatomical impossibility' that the sponge could be in the trachea, for if there, the air could not pass so freely to and fro in that tube, as it did at that moment. Still supposing that the sponge was lodged in the oesophagus, or had passed into the stomach, an emetic of ipecacuanha was administered, which removed the contents of the stomach without dislodging the sponge. But the difficulty of breathing at once returned, and the patient declared he could again feel the sponge at the bottom of the pharynx. An oesophagus bougie was now obtained, and passed slowly into the stomach, without encountering the least obstruction, excepting a very slight impediment, which was met with for a moment just before the instrument slipped into the stomach. But the patient again breathed quietly, and said, 'now I can feel it in my stomach.'

"Dr. Peaslee being obliged to leave his patient to fulfil a consultative engagement with a physician residing in a neighbouring town, left directions that his colleague, Dr. Crosby, should be immediately called, if the dyspnoea and cough returned. During the afternoon and the following night, the paroxysms of dyspnoea and cough returned several times; the respiration became more difficult, and Dr. Crosby was called in, who, after passing the bougie into the stomach, without finding the sponge concluded, with Dr. Peaslee, that it must be in the trachea; its precise location, however, could not be ascertained by placing the ear over the trachea or chest, but as the respiratory murmur was found to be diminished throughout the whole of the right

lung, and as this side was also less distended on inspiration than the other, it was concluded that the sponge was at length engaged more especially in the right bronchus. The necessity of practising an operation was now quite apparent, and it was determined to perform it about ten o'clock on the morning after the occurrence of the accident.

"The incision was made into the trachea by Dr. Crosby, in the manner ordinarily practised in this operation. The hæmorrhage was very profuse, and being drawn freely into the trachea, at each inspiration, 'filled the tube from the sponge up to the incision, and thus completely asphyxiated the patient.' It was quickly removed, however, by Dr. Peaslee, and an attempt made, with a long forceps, to remove the sponge, but the mass was so firmly impacted that great difficulty was found in accomplishing it. The first and second attempt brought away, at each time, only small portions of the size of a pea, but the third removed the whole mass, as it was supposed at the time. After its removal, the usual means for exciting the respiratory movements were employed, when the patient at length breathed, and in a few minutes was able to answer questions. But the hæmorrhage again returned some hours after the operation, filling up the trachea, and obstructing respiration; and although it was several times removed from this tube, yet the patient became comatose, and died fifty-three hours after the operation.

"The respiratory organs only were examined. The *larynx* was well proportioned, but in no respect abnormal. The *trachea* was inflamed throughout. 'A patch of inflammatory exudation just above the bifurcation, equal to about a square inch in extent; imbedded in which, and upon the left side, was a piece of sponge about the size of a common white bean, and so adherent as to detach the membrane when removed.'

"In concluding, Professor Peaslee thus remarks:—'This case finally settles the question—if anybody still has any doubt—of the possibility of passing a sponge through the rima into the trachea, in the treatment of tracheal disease. The sponges used by Dr. Horace Green for that purpose, are about half an inch (generally less) in diameter. The one I actually removed was more than fourteen times as large as one of these; and the whole mass at first was at least *fifteen or sixteen times as large.*'

"On measuring the mass of sponge removed by the operation, it was found to be even larger than the patient had said. 'Another piece cut out as a fac-simile of it, but found on accurate comparison to be somewhat thinner and *smaller*, is, when moistened, one inch and three quarters long, one inch and a quarter wide, and fifteen sixteenths of an inch thick; all this in addition to the three small pieces detached from the original, as before said.'

"It is quite time that the medical profession generally should be made better acquainted with the very great advantages which may be derived from an appropriate combination of topical with general remedies, in the treatment of many forms of disease of the respiratory passages.

"Not only in chronic, laryngeal, and bronchial disease, but in membranous croup, in asthma, in œdema of the glottis, and in the

earlier stages of *tubercular phthisis*, topical medication has proved, in my hands, not only palliative but *curative*, in many instances, in all these varieties of disease.

"I am fully aware of the clamour many in the profession are ever ready to raise at the bare suggestion that any plan of treatment will prove remedial in the last-named disease; but, after a long and quite an extensive experience in the treatment of diseases of the air-passages, I am fully confirmed in the opinion, that in many instances of tubercular affection, complicated with, or preceded by, follicular disease of the pharyngo-laryngeal membrane—and such cases are much more numerous than the profession are generally aware of—we have it in our power to arrest the disease by the persevering employment of topical measures conjoined with appropriate general treatment."

2. [Dr. Eben Watson's paper in the 'Dublin Medical Quarterly,' contains some further particulars respecting his treatment of acute inflammation of the larynx and trachea by topical medication. The results are thus stated:]

"1st. The solution of the nitrate of silver, when applied to an inflamed mucous membrane, acts differently, according to the intensity of the inflammation that may be present; in the asthenic varieties it operates as a stimulant of the capillaries of the part, and likewise of its secreting apparatus, while in the sthenic variety it increases the congestion of the membrane, chiefly by diminishing the fluidity of the blood in its vessels.

"2d. In acute laryngitis in which there is no false membrane, and probably in diphtheritis in which there is an albuminous exudation, the local application of solution of caustic, varying in strength inversely in proportion to the intensity of the inflammation, may be employed with more or less speedy benefit.

"3d. During the violence of true exudative croup the stimulant application of the part affected is injurious, but when the disease begins to yield to antiphlogistic and other treatment, it may assist in the cure.

"4th. Œdema glottidis, whether occurring as a primary disease, or as a complication of other morbid states, is always speedily relieved, and in some cases effectually cured, by the application of strong solutions of the nitrate of silver to the œdematous organ.

"And 5th. It follows as a corollary, derived partly from the foregoing conclusions, and partly from the results of my experience of the topical treatment communicated to this Journal in November, 1850, that the solution of caustic acts beneficially in only one, viz., in the asthenic variety of laryngeal inflammation; for it matters not whether such has been the original character of the affection (acute but asthenic cases), or whether it has become so under the combined influence of time and general treatment (chronic cases)."

[These results are founded upon certain clinical data, of which the following two cases will serve as examples. They rest also upon certain experiments upon the web of the frog's foot, in which inflammation had been excited by mechanical injury; but these are less conclusive, and may be passed over in silence.]

Case 1.—"The subject of the case was a gentleman past the middle

of life, and before his present illness, remarkably strong and healthy.—“One evening of the winter before last, he was suddenly seized with difficult respiration, tightness in the throat, harsh, dry, whistling cough, and high fever. All the symptoms of croup, indeed, became very severe, but too well marked; and a few hours after the apparent commencement of the attack, the following were the physical signs which presented themselves:—The number of respirations in the minute was much increased, and yet the feeling of oppression on the chest remained unabated, so incomplete was the inflation of the lungs, indeed, the respiratory murmur was but feebly heard in the upper parts of the chest, while the bronchial sounds were dry and snoring in their character. In the trachea the inspiration was long, and accompanied by the harsh sound of the air passing along the dry and narrowed tube. A little higher up, and chiefly at the commencement of inspiration, the glottis was heard vibrating, so as to occasion a stridulous sound. When the patient spoke he suffered great pain, and increased feeling of anxiety. His voice was feeble and broken, being at times deeper, and then suddenly much slighter, than his ordinary tone.

“There could, therefore, be no doubt that this was an instance of acute tracheal croup, accompanied by exudation. It was treated as such, by emetics, purgatives, hot baths, bleeding, antimony, and calomel, with a blister on the trachea, and in the evening I commenced to apply a solution of twenty grains of nitrate of silver in an ounce of water to the interior of the affected organ; but each application gave great pain and uneasiness, and increased the sense of suffocation. The violent fits of coughing which were thus produced undoubtedly occasioned the separation of small portions of the false membrane, but that was no improvement, since the surface thus exposed was tender, unprotected, and often bleeding. I next followed Dr. Horace Green's example, and increased the strength of the solution twofold. This, however, only made matters worse, and, indeed, the patient himself began to dread the repetition of the proceeding. Still my faith in the remedy was not completely exhausted: I determined, before abandoning the topical treatment altogether, to use a weak solution of the nitrate of silver; I therefore diluted it to ten grains, and ultimately to five grains, in one ounce of water, and yet I was unsuccessful. It was, indeed, too apparent to me that the larynx was not in a state to bear either the stimulant solution, or the presence, for however short a time, of the sponge by which it was applied; I therefore gave up the topical treatment entirely at this time, and used more ordinary measures. The patient was still further depleted, and more decidedly mercurialised. He was likewise frequently blistered during the next month, by the end of which time he was much improved, but still had a good deal of hard, whistling cough, dyspnoea when he moved about, and great pain when he spoke, referred to the glottidean region. The tone of voice was weak, but not unusually hoarse.

“The most careful examination of the chest still showed that the lungs were free from disease. The respiratory sounds in the trachea were loud, harsh, and dry, and were accompanied by a pretty constant rale, as if there were one or more valvules of exudation matter still

adhering to the walls of the trachea. The vibration of the glottis in breathing and coughing was not so free as formerly, indicating a degree of œdema of the organ.

"On opening the mouth, the fauces were seen to be red and swollen, and the epiglottis was felt by the finger covered with soft and doughy mucous membrane.

"After careful consideration of all these circumstances, it was determined, in consultation with my father, that two caustic issues should be opened, one on each side of the thyroid cartilage; that the iodide of potassium should be administered in decoction of sarsaparilla; and that I should again apply the caustic solution to the interior of the larynx and trachea, now that the inflammation had passed the acute stage. Under this plan of treatment the patient made daily advances towards health, and was soon able to take exercise out of doors, wearing a respirator.

"The effects of the topical treatment during this latter period were as manifestly beneficial as formerly they had been hurtful. The strength of the solution was at first only ten grains to the ounce of water, but was gradually increased to a scruple in the same quantity. After each application the patient found that in a short time his breathing was freer, his cough less frequent, and his voice stronger; but this improvement at first lasted only about forty-eight hours, at the end of which period the application was always renewed with the good effect of sustaining the improvement. By and bye, however, the intervals were lengthened with impunity; the gentleman spent the summer at the coast, and is now perfectly well."

Case 2.—"A young child, of eight months' old, had severe hæmorrhage of the gums after division of them over the incisor teeth, and in the exhausted state which followed, he caught cold, and became affected with the ordinary symptoms of croup, which were chiefly combated by an emetic, counter-irritation over the throat and chest, and by repeated small doses of calomel. But very soon the chief, nay, only symptom became that of impeded respiration. The child's efforts during inspiration, the dry, whistling sound which accompanied it in the trachea, the nearly total absence of vesicular murmur in the lungs, and the short expiratory sounds, taken along with the previous state of the little patient, rendered it evident that œdema glottidis had occurred; and if to this it be added that the pulse was feeble, the patient pale and exhausted, and that he could hardly be made to receive nourishment, his extreme danger will not be questioned.

"I introduced the probang down to the glottis, but not through the rima, owing to the swelling of its margins. The strength of the solution used was thirty grains to the ounce of water, and it was applied three or four times at short intervals. The effect was soon apparent. Some coughing, and the expulsion of tough muco-albuminous matter first followed, and then the child became quiet, the breathing was freer, although, of course, there was still considerable obstruction at the glottis. In a few hours this obstruction seemed to be increasing, and the application of the caustic solution was again renewed in the same way, and with equally favorable results. The calomel was continued, and a warm water enema was administered,

after the action of which the child took the breast, and slept for a short time. The future progress of the case was marked by a gradual but steady improvement. The calomel was soon stopped, the bowels were duly regulated, and the topical applications were persevered in daily for two or three weeks, by the end of which time all obstruction to the breathing, as well as the cough, and even a degree of hoarseness which had latterly been observed, had completely disappeared, and the child's general health was improved."

3. [The following statistical information concerning the effects of topical medication of the larynx in hooping-cough, is to be found in a note appended to the last section of this article. Dr. Eben Watson (who originally proposed this mode of treatment) writes as follows:]

"M. Joubert, of Cherion, has used the topical treatment in 68 cases of hooping-cough, with the following results: (See the 'Bull. de Thérapeutique' for January, 1852, and also the 'Edin. Monthly Journal' for May, 1852, p. 257.)

A speedy cure resulted in	40 cases
Great relief and shortening of the disease in 20	"
No change in	8 "
Total	68

"The cases of the disease which I have myself treated, from beginning to end, in this way amount at present to 57, in all of which a more or less speedy cure was effected, as the following statement will show:

38 Cases were cured in from 10 to 14 days.	
19 " " " 3 to 4 weeks.	
57	

"Combining these two Tables, we have, in the the first place, 125 cases of hooping-cough treated in this manner without one death. Only 8 out of the whole number resisted the treatment; of the rest, 78 were speedily cured, and 39 were greatly relieved and shortened. What better proof can be asked of the efficacy of the topical treatment of hooping-cough; and what now prevents its general adoption by the profession? Am I not warranted in believing that where it so adopted much suffering would be saved and many lives would be prolonged beyond the first, the most interesting, but perhaps also the most dangerous, epoch of human existence?"

ART. 26.—*On the Curability of Phthisis Pulmonalis.* By (1) Prof. J. HUGHES BENNETT, and (2) Dr. RICHARD QUAIN.

(1. *Edinburgh Monthly Journal of Medical Science*, April. 2. *The Lancet*, July 12th.)

[This subject is one of deep and paramount interest; for, notwithstanding the abundant proof which has been accumulating of late years, it is still the opinion of the majority of the medical profession, as it is of the public generally, that phthisis pulmonalis is incurable. In those cases in which recovery would seem to have taken place, the

correctness of the diagnosis or anything else is doubted rather than this cherished dogma. It is no small matter, therefore, to explode this fatal fallacy—fatal in a thousand ways; and hence we hail with more than ordinary satisfaction such communications as those with which we are now concerned.

1. Dr. Bennett's remarks on the curability of pulmonary consumption form part of a clinical lecture delivered in the Royal Infirmary at Edinburgh, and reported in the 'Monthly Journal of Medical Science.' The immediate subject of them was a patient of the name of Barclay, in whom symptoms of a phthisical nature had undergone rapid and unmistakeable amendment. Dr. Bennett proceeds thus:]

"Up to a very recent period, the general opinion has been, that phthisis pulmonalis almost always marches on to a fatal termination; and that the cases of its arrestment which were known to have occurred, were so few as merely to constitute an exception which proved the rule. Morbid anatomy has now, I think, demonstrated that tubercles, in an early stage, degenerate and become abortive with extreme frequency. In 1845, I made a series of observations with reference to the cretaceous masses and puckering so frequently observed at the apices of the lungs in persons advanced in life. The conclusion arrived at was, that the spontaneous arrestment of tubercle in its early stage occurred in the proportion of from one third to one half of all the individuals who die after the age of forty. The observations of Rogée and Boudet, made at the Salpêtrière Hospital, in Paris, amongst individuals generally above the age of seventy, showed the proportion in such persons to be respectively one half and four fifths.

"That the cretaceous and calcareous concretions, accompanied with puckering, are really evidences of abortive tubercles, is established by the following facts:

"1. A form of indurated and circumscribed tubercle is frequently met with, gritty to the feel, which, on being dried, closely resembles cretaceous concretion.

"2. These concretions are found exactly in the same situations as tubercle. Thus they are most common in the apex, and in both lungs. They frequently occur in the bronchial, mesenteric, and other lymphatic glands, and in the psoas muscle, or other textures which have been the seat of tubercular depositions, or scrofulous abscesses.

"3. When a lung is the seat of tubercular infiltration throughout, whilst recent tubercle occupies the inferior portion, and older tubercle, and perhaps caverns, the superior, the cretaceous and calcareous concretions will be found at the apex.

"4. A comparison of the opposite lungs will frequently show, that whilst on one side there is firm encysted tubercle, partly transformed into cretaceous matter, on the other the transformation is perfect, and has occasionally even passed into a calcareous substance of stony hardness.

"5. The seat of cicatrices admits of the same exceptions as the seat of tubercles. In one case, I have found the puckering and cicatrix in the inferior lobe only; and have met with three cases, where the inferior lobe was throughout densely infiltrated with tubercle, whilst the superior was only slightly affected.

"It has indeed been argued, that occasionally these cretaceous masses may be the result of a simple exudation, or of what Dr. Gairdner has called bronchial abscess in the lung. When they are found isolated in the middle or base of the organ, such certainly may be the case, and consequently the fifth argument may be affected. But this is rare, and can scarcely make any alteration in the vast proportion of those concretions and puckerings which are undoubtedly the result of abortive tubercles. With these facts before us, and with the knowledge that there is nothing in the nature of tubercle itself which is opposed to the evidence of these anatomical facts, the frequent spontaneous cure of tubercle may now be considered established.

"Since these observations, however, have become known, it has been stated that after all, practically speaking, phthisis pulmonalis does not mean the existence of a few isolated tubercles scattered through the lung, and that what is really meant is that advanced stage in which the lung is affected with ulceration, and in which the bodily powers are so lowered, that perfect recovery seldom or never takes place. But here again a careful examination of the records of medicine will show that many even of these advanced cases have recovered. Laennec, Andral, Cruveilhier, Kingston, Pressat, Rogée, Boudet, and others, have published cases where all the functional symptoms and physical signs of the disease, even in its most advanced stage, were present, and yet where the individual survived many years, ultimately died of some other disorder, and on dissection cicatrices and concretions have been found in the lungs.

"I here show you a preparation, exhibiting a remarkable cicatrix in the lung, which I described and figured in the 'Monthly Journal,' for March, 1850. As it is short, I may quote it:

"John Keith, æt. 50, a teacher of languages, was admitted into the Royal Infirmary, February 8, 1844, in a state of coma, and died an hour afterwards. On examination, the membranes of the brain, at the base, were unusually congested, and covered with a considerable exudation of recently coagulated lymph, here and there mingled with bloody extravasation. The apex of the right lung presented a remarkable cicatrix, consisting of dense, white, fibrous tissue, varying in breadth from one fourth to three fourths of an inch, and measuring about three inches in length. The pleural surface in its neighbourhood was considerably puckered. On making a section through the lung, parallel with the external cicatrix, the substance immediately below presented linear indurations, of a black colour, together with five cretaceous concretions, varying in size from a pin's head to that of a large pea. The surrounding pulmonary substance was healthy. The apex of the left lung was also strongly puckered, and contained six or seven cretaceous concretions, each surrounded by a black, dense, fibrous cyst.

"A very respectable-looking and intelligent man, who attended the *post-mortem* examination, informed me that Keith, in early life, was in very indifferent circumstances, and had supported himself as a writer. At the age of two and twenty, or three and twenty, he laboured under all the symptoms of a deep decline, and his life was despaired of. About this time, however, he was lost sight of by his friends; but it

was afterwards ascertained that he had become a parish schoolmaster, in the west of Scotland, and that his health had been re-established. He returned to Edinburgh six years before his death, and endeavoured to gain a livelihood by teaching Latin and French. He succeeded but very imperfectly, and fell into dissipated habits. Latterly, he had become subject to attacks of mania, apparently the result of drink. It was after an unusually severe attack of this kind that he was brought into the Infirmary, where he died in the manner previously described.

"The case points out the following important facts: 1st. That at the age of 22 or 23, the patient had a tubercular ulcer in the right lung, the size of which must have been very considerable when the contracted cicatrix alone was three inches long. 2d. That tubercular exudations existed in the apex of the left lung. It is, therefore, very probable that the statement made by his friend at the examination was correct—namely, that he laboured under all the symptoms of advanced phthisis pulmonalis. It is shown, 3dly, That after receiving the appointment of a parish schoolmaster, after changing his residence and occupation, while his social condition was greatly improved, these symptoms disappeared. We may consequently infer, that it was about this period when the excavation on the right side healed and cicatrized, while the tubercular exudations on the left side were converted into cretaceous masses, and so rendered abortive. It demonstrates, 4thly, that when, at a more advanced age, he again fell into bad circumstances, and even became a drunkard, tubercular exudations did not return, but that delirium tremens was induced, with simple exudation on the membranes of the brain, of which he died.

"Further, I have conversed with most of the distinguished physicians in this country and on the Continent, and find that they are all enabled to refer to cases, which they are now satisfied have undergone a permanent recovery, even when cavities have existed in the lungs, and all the advanced symptoms of the disease have been present. I once made an effort to accumulate the experience of these distinguished men, on this point alone, and had I done so, it would have constituted an unanswerable amount of evidence as to the curability even of the worst cases of phthisis. Want of time, however, prevented them from writing down the facts. But it is unnecessary to refer you to recorded cases, when the fact stands before you in the case of Barclay. Its comparative frequency, indeed, might be illustrated by such an inquiry, and I believe this to be much greater than is generally supposed; but to the great fact itself, nothing more can be added in the way of evidence than that which is before you; namely, this remarkable cicatrix found in the lung of Keith, and a careful examination of the lad Barclay now in the ward. So deeply rooted; however, has been the opinion of the necessarily fatal nature of this disease, that the generality of practitioners have concluded, that *because* phthisical cases recovered, the disease was *not* phthisis; that is, they have rather distrusted their own diagnosis than ventured to oppose a dogma of general belief.

"But although the fact of the curability of phthisis pulmonalis, even in its most advanced stage, can no longer be denied, it has been argued that this is entirely owing to the operations of nature, and

that the physician can lay little claim to the result. Andral, who early admitted the occasional cicatrisation of caverns, states this in the following words: 'No fact,' he says, 'demonstrates that phthisis has been ever cured; for it is not art which operates in the cicatrisation of caverns; it can only favour this, at most, by not opposing the operations of nature. For ages, remedies have been sought either to combat the disposition to tubercles, or to destroy them when formed, and thus innumerable specifics have been employed and abandoned in turn, and chosen from every class of medicaments.' But if it be true, according to Hoffmann, that '*Medicus naturæ minister non magister est*,' it follows that, by carefully observing the operations of nature, learning her method of cure, imitating it as closely as possible, avoiding what she points out to be injurious, and furnishing what she evidently requires, that we may at length arrive at rational indications of cure. Both the cases of Keith and Barclay, in my opinion, furnish evidence that we have in a great measure attained this end."

2. [Dr. Richard Quain furnishes us with an abundant number of facts in proof of the same position—the curability of phthisis—from among the out-patients of the Hospital for Consumption and Diseases of the Chest at Brompton; and he still continues to draw upon the same source. Of these facts we take one as an example:]

"*Case 1.*—*Tuberculous Deposition in both Lungs; Formation of a Cavity in one; Arrest of the Disease; Progress of Cicatrisation; Death by another Disease; Appearance found in the Lungs.*—The lungs in this remarkable case were presented to the Pathological Society of London, and full details are published in their '*Transactions*' for last year. I shall therefore now give but a summary of its leading features.

"A female in her 13th year became an out-patient of the hospital in May, 1848. She had suffered, during the preceding winter, from impaired health, cough, and the ordinary symptoms of consumption. The deaths of two sisters by this malady show that she was predisposed to the disease. Marked dulness, bronchial voice, and breath-sound at the apex of the left lung, gave proof of the presence of much tuberculous deposit there; a feeble inspiratory, and a loud expiratory, murmur at the apex of the right lung, showed the presence of tuberculous deposit, but to a limited extent, in this situation. She had been unable to take cod-liver oil in its ordinary form. A mixture containing this material, combined with liquor potassæ, and formed into an emulsion, was prescribed, and well borne. A cough syrup was also prescribed, and some mild counter-irritation.

In the following August, softening of the tuberculous deposit in the left lung had commenced. She had profuse hæmoptysis, and subsequently abundant puriform expectoration. Crepitation was at this time audible over the former seat of dulness; and shortly after, cavernous breathing indicated the presence of a cavity. The patient's state at this time was unpromising. The cod-liver oil was increased in quantity, symptoms were treated as they arose, and extreme care was taken of her during the winter. In December she had decidedly improved in health. She continued to improve slowly until August,

(1849,) when it is noted that 'there is flattening of the chest over the apex of the left lung; the respiration, though cavernous, is not loud; pectoriloquy is distinct; respiration at the right apex is somewhat puerile.' The improvement during the winter continued. She took the cod-liver oil, and an infusion of gentian with soda and hydrocyanic acid, when the stomach was out of order. Thus favorably she went on, and in the following October she came to the hospital, looking remarkably well, having grown tall and stout. She said that she had been for some time in the country. She had scarcely any cough, no expectoration, was free from suffering, and spent her time much as other girls of her age. An examination of the chest showed remarkable contraction over the summit of the left lung, the mobility greatly diminished, being in the proportion of nine to thirty-two of the right apex. The breath-sound under the left clavicle had a sharp, whiffling character, accompanied by slight crepitus; the dulness above the spine of the scapula was more marked, and respiration was scarcely audible there; the right lung was traced, extending to the left border of the sternum, and over this lung the respiration generally had a puerile or supplementary character. The most remarkable phenomenon, however, was connected with the heart's action. This organ was drawn upwards and inwards, affording an impulse which was chiefly felt between the cartilages of the second and fourth left ribs. The treatment was continued during the winter, and her improvement was progressive. In the following March, during the prevalence of influenza, she was seized with vomiting and purging, and sank rapidly on the fourth day of the attack.

"The post-mortem examination, made by Mr. Harris, of Clapham, who had watched the case with great interest, showed appearances entirely corresponding with the facts ascertained during life. As these appearances are fully described in the 'Transactions' referred to above, I shall give but a short summary of them here.

"1. Nearly the whole of the upper lobe of the left lung was occupied by a cavity now reduced to the size of a large walnut, lined by a distinct membrane, and surrounded by condensed walls. This lobe was very greatly contracted in size. A considerable portion of the lower lobe was permeable to air. It contained some points of old tuberculous deposit.

"2. The right lung was large, and extended across the sternum. Its apex was puckered, and throughout its substance were some points of old tuberculous deposit. There was *no appearance whatever in either lung of recently deposited tubercle.*

"The space rendered vacant by the contraction of the left lung around the cavity, was occupied by the heart, which was drawn upwards and to the left side, and by the walls of the apex of the chest, which had fallen inwards and downwards. The mucous membrane of the alimentary canal was congested; there was no material disease of any other organ."

ART. 27.—*On the Influence of Pregnancy and the Puerperal State in the progress of Phthisis.* By MM. GRISOLLE and DUBREUILH.

(*Revue Médicale, and Brit. and For. Med.-Chir. Rev., July.*)

M. Grisolles, in reporting to the Academy of Medicine upon a memoir presented by M. Dubreuilh, observes that the views he formerly expressed have only obtained additional confirmation. In none of the 13 cases related by M. Dubreuilh, or in the 35 now collected by M. Grisolles, has the power formerly vaguely attributed to pregnancy, of staying the progress of phthisis, been observed. In some cases, indeed, it seems to have played the part of determining cause, and in others to have aggravated the condition. According to M. Grisolles's observation, cases in which the first symptoms of phthisis are developed at an early period of pregnancy, and amidst a state of health otherwise satisfactory, are more common than those in which the pregnancy is consecutive to the early appearance of the organic disease. Both observers are, indeed, of opinion that phthisical women conceive with difficulty; and M. Delaford assured the reporters that cows, even at an early period of the disease, usually remain sterile, even though they continued fully alive to the attentions of the bull. He added also, that, in such as did conceive, abortion was common about the third or sixth month; while, in such as went their full time, the progress of the disease was in no way modified. In M. Grisolles's former papers he stated that pregnancy, in his cases, so far from retarding, hastened the progress of phthisis; and although the rate was found to be somewhat slow in M. Dubreuilh's cases, this probably arose from their having occurred in private practice, while M. Grisolles's were all hospital patients. Both sets of cases, however, amply disprove the suspending power of pregnancy; and M. P. Dubois's experience has long since led him to a similar conclusion. Phthisis which has appeared at an early period of pregnancy pursues a constantly onward course; and if improvement is to take place at all, it never does so until after delivery. It is rare for phthisis thus complicated to present those intermissions, or sudden suspensions of progress, sometimes met with in ordinary phthisis. The children brought forth by phthisical mothers, though usually small, are plump and well-looking, to an extent that would not, *a priori*, be expected from persons suffering from so exhausting a disease.

M. Dubreuilh expresses a theoretical opinion in favour of the prevalent belief that the progress of phthisis is hastened by *delivery*, but his facts are against him; and so complete is the suspension of the disease sometimes, that delusive hopes of cure are entertained.

In regard to the influence of *phthisis on pregnancy*, both observers are agreed that such patients *ordinarily* go their full time; which must be regarded as a remarkable fact, when it is considered that more than half the pregnant women attacked by pneumonia abort. Both also find that these women usually have very easy labours—a fact due to the smaller size of the child and the relaxed state of the tissues. Both, too, consider that the attempt to suckle exerts the most disastrous influence upon both mother and child.

ART. 28.—*Phosphate of Lime in Phthisis.*

By S. KNEELAND, Jun., M.D. (U. S.)

(From the *American Journal of Medical Sciences*, July.)

This paper contains an interesting suggestion as to possible the utility of lime in phthisis, and a hint that the efficacy of cod-liver oil may be owing to the phosphorus it contains, which phosphorus is first converted into phosphoric acid, and then combined with lime as the salt in question,—phosphate of lime. The author refers to the known physiological importance of the salt of lime in the growth of vegetable and animal structures, and to the calcareous transformations of tubercle in the walls of tuberculous cavities when these undergo spontaneous cure; and then draws the inference that the same salt, properly administered, might exalt the natural power of organisation in consumptive subjects, and favour this salutary calcification of the diseased deposits.

The author supports the opinion he entertains in connection with cod-liver oil, chiefly from the wonderful effects of this medicament in replacing the living matter in rickety bones—effects which first recommended the oil to the notice of the profession; and secondarily from the large quantity of phosphorus, as compared with iodine, which is held in solution or combination. In reference to this latter point, also, he might have said that recent investigations go far to show that the efficacy of the oil is not to be attributed to the iodine contained.

Dr. Kneeland is not decided as to the mode in which he would have the phosphate tried. He discards water or albumen on account of their non-solvent properties, and then hesitates whether he should separate the saline elements, and give the phosphorus with or without the lime, or whether he should give the salt as a whole with cod-liver oil, or whether he should attempt to procure the desired end by the decomposition of other salts.

ART. 29.—*On a New Symptom in Pneumonia.*

By WM. M. BOLING, M.D. (U.S.)

(American Journal of Medical Sciences, July.)

This symptom, which Dr. Boling considers peculiar to the disease, consists in a deposition on the teeth, just along the margin of the gums, of a matter of different shades of colour, from a light orange to a dull vermilion, the tint being always deepest close to the gums. This deposit forms a line of about the 16th of an inch in width. Unlike the blue line on the margin of the gums in lead-poisoning, and the red line, noticed by Dr. Theophilus Thompson, and described in the 'Lancet' for September, 1851, as occurring in the same part in phthisical patients, the appearance in question is seated on the teeth, and may be removed by wiping, though occasionally a somewhat durable stain remains upon the enamel.

Dr. Bowling says that he is at a loss for the explanation of this phenomenon, though it is probably some exudation from the margins of the gums. At first he thought it might be deposited from the expectoration, but he found it in several cases of latent pneumonia, in which there was no characteristic expectoration. He conjectures that miasmatic poisoning of the atmosphere may have something to do with the

matter, and thinks if this were not the case, the symptom in question would have been noticed before. Still he does not remember to have seen it in any of the forms of uncomplicated miasmatic fever.

The symptom occurred in about a third or fourth of the entire number of cases; and in those in which the characters of the disease were severely marked.]

ART. 30.—*On the Use of Nitric Acid in Hooping-Cough and Asthma.*
By Dr. T. C. T. ARNOLDI.

(*Canada Medical Journal*, Aug.)

[Dr. Arnaldi recommends nitric acid as a powerful remedy in hooping cough and asthma:]

"In hooping cough," he says, "at whatever age, whether it be a child at the breast or a full-grown adult, I administer nitric acid in solution, as strong as lemon juice, sweetened *ad libitum*. I have given to a child of two years of age as much as one drachm and a half of concentrated nitric acid, in the above manner, per diem, and I have never known the disease to resist its use beyond three weeks. In one instance, that of a child at the breast, only seven months old, the disease disappeared within eight days. In another instance of a young lady fifteen years of age, the paroxysms were subdued within the first twenty-four hours, and the disease disappeared within ten days. Again, in the cases of two boys about ten years of age, living at a great distance from one another, who had had the cough for several weeks, and to such a violent degree that both of them had the circumference of their eyes ecchymosed, as though they had been pommelled in pugilistic combats, the acid acted positively like a miracle. A medical confrère of mine had four of his children severely affected with the same disease in the middle of winter; and, although they had to be kept indoors, owing to the inclemency of the weather, they were nevertheless all perfectly cured within three weeks. I might go on to cite a hundred similar instances, but these, I am satisfied, will prove sufficient to induce the profession to adopt this treatment. As regards asthma, the use of nitric acid has proved, not only in my own practice but in that of others who have adopted it, truly marvellous."

[In noticing Dr. Arnaldi's paper, the editor of the 'American Journal of Medical Science' remarks, that the history of five cases of asthma, in which nitric acid was used successfully, was published in that journal by Dr. Hopkins, of Bethel, Georgia, in October, 1850.]

(C.) RELATING TO THE CIRCULATORY SYSTEM.

ART. 31.—*On some of the principal Effects resulting from Detachment of Fibrinous Deposits from the Interior of the Heart, and their Mixture with the Circulating Fluid.* By Dr. WM. SENHOUSE KIRKES.

(*The Lancet*, June 5th.)

In a paper having this title, which was recently read before the Medico-Chirurgical Society, Dr. Kirkes began by saying, that it was a clearly-established fact, that the fibrinous principle of the blood might, under certain circumstances, separate from the circulating fluid,

and be deposited within the vascular system, especially on the valves of the heart. The forms of fibrinous concretions, to which the following observations especially applied, were, first, the masses usually described as Laennec's globular excrescences; and, secondly, the granular or warty growths adhering to the valves, and presenting innumerable varieties, from mere granules to large irregular fungous or cauliflower excrescences, projecting into the cavities of the heart. These growths, when once formed, whatever might be their origin, were full of peril, and would often remain so, long after the circumstances which gave rise to them had passed away. When of large size, or loosely adherent, they might at any time be detached from the valves, and conveyed with the circulating blood, until arrested within some arterial canal, which might thus become completely plugged up, and the supply of blood to an important part be suddenly cut off, from which serious if not fatal results would ensue; or, smaller masses might be detached, and pass on into arteries of much less size, or even into the capillaries, whence congestion, followed by stagnation and coagulation of the blood, and all the consequent changes such coagulated blood is liable to undergo in the living body, would necessarily follow. Many singular morbid appearances observed in internal organs, and not well accounted for, were probably brought about in this manner. Again, the masses of fibrine might soften, break up, and discharge the finely granular material resulting from their disintegration into the circulating blood, and, contaminating this fluid, might excite symptoms very similar to those observed in phlebitis, typhus, and other analogous blood diseases. Thus the fibrinous material detached from the valves, or any other part of the interior of the heart, might be the cause of serious secondary mischief. The parts of the vascular system in which these transmitted masses of fibrine might be found, would in great measure depend upon whether they were detached from the right or left cavities of the heart. Thus, if from the left, they would pass into the aorta and its subdivisions, and would be arrested in any of the systemic arteries or their ramifications, and especially into those organs which receive large quantities of blood direct from the left side of the heart, as the brain, spleen, and kidneys: on the contrary, if escaping from the right cavities, the lungs would necessarily become the primary, if not the exclusive, seat of their ultimate deposition. A division of the subject being thus naturally formed, the author proposed to consider the subject, first, as to the remote effects resulting from the separation of fibrinous deposits from the valves or cavities of the left side; and, secondly, as to the corresponding effects produced by the detachment of like deposits from the valves or cavities of the right side of the heart. The author then proceeded to elucidate the first branch of the subject, in which masses of some magnitude were detached from the left side, and arrested in an arterial channel of notable size. This pathological fact was illustrated by three cases, in many respects identical; for, in each, death appeared to ensue from softening of the brain, consequent on obstruction in one of the principal cerebral arteries by a mass of fibrinous material, apparently detached from growths on the left valves. The first case was that of a female, aged 34, of pale and delicate aspect. She had suffered from rheumatic pains, and there was a

loud systolic murmur heard over the entire cardiac region. While under treatment for these symptoms she suddenly fell back as if fainting. She was found speechless, with partial hemiplegia on the left side, but there was no loss of consciousness; the hemiplegia increased, involved the face and limbs, and gradually became complete in regard to motion; but sensation remained unimpaired. These symptoms lasted five days, when she quietly died. The post-mortem examination developed much congestion of the pia mater, amounting, in some places, to ecchymosis. The right corpus striatum was softened to an extreme degree—being reduced to a dirty, greyish-white pulp. In the posterior lobe of the right cerebral hemisphere was a similar spot of pale softening. The right middle cerebral artery, just at its commencement, was plugged up by a small nodule of firm, whitish, fibrinous-looking substance, not adherent to the wall, but rendering the canal almost impervious. The vessels of the brain were generally healthy, except a yellow spot or two in the coats of those at the base of the brain. The heart was enlarged; several broad white patches externally. The right valves were healthy, so also were the aorta; but the mitral valve was much diseased, the auricular surface being beset with large warty excrescences of adherent blood-stained fibrine. The right common iliac artery, about an inch above the origin of its internal branch, was blocked up by a firm, pale, laminated coagulum, which extended into the internal iliac. The pleuræ were adherent in places; liver and intestinal canal healthy; spleen large, pale, and soft, and contained a yellowish-white, cheesy substance. The kidneys were pale, rough, and granular; within the cortex of the right were several large masses of yellow deposit, surrounded by patches of redness. Death had resulted in this case from the softening of a large portion of the right side of the brain, which the author considered to have arisen from an imperfect supply of blood, consequent on the middle cerebral artery of the same side being obstructed by a plug of fibrine. The author then discussed the sufficiency of such an obstruction to produce the effects ascribed to it, and he brought forward many examples, showing that atrophy and disorganisation usually resulted from any circumstance which materially impeded, or entirely cut off, the supply of blood to a part. The author then directed attention to the probable source of the fibrinous plug found in the middle cerebral artery. The suddenness of the cerebral symptoms rendered it probable that the blocking up of the artery was equally sudden, and not the result of gradual coagulation of the blood within the vessel. The absence of all local mischief in the coats of the artery at the point of obstruction, as well as elsewhere, pointed to some other than local origin for the clot; and the author, at the time of examination, formed the opinion, that a part of the fibrinous deposit on the mitral valve had become detached, and carried by the stream of blood, until arrested at the angle whence the middle cerebral proceeded. This explanation suited equally for the plug found in the common iliac; for it was quite conceivable that portions of the loosely adherent fibrine might be easily detached by the stream of blood washing over the mitral valve, and when once admitted into the circulating current, they would only be arrested by arriving at a vessel too small to allow their transit

along its canal. Two other cases were described by the author, possessing many interesting points of resemblance: one, a female, aged 24; the other, a male of the same age. Both were admitted into the hospital with hemiplegia of the left side; each had heart-disease, indicated by a loud systolic murmur. The post-mortem examinations revealed the following morbid appearances common to both:—Softening of a limited portion of the brain, producing death by hemiplegia; obliteration of the cerebral artery supplying the softened part; coagula in one of the iliac arteries; fibrinous deposits in the kidneys and spleen; and the presence of fibrinous warty excrescences on the valves of the left side of the heart. So many and such rare features of resemblance could not fail to demonstrate a very close connection between the several morbid appearances so exactly reproduced in each case. The author believed that these three cases satisfactorily established the two following conclusions—1st, that softening of a portion of the brain, with attendant loss of function, might result from obstruction of a main cerebral artery by the lodgment of a plug of fibrine within its canal; 2dly, that the foreign substance thus obstructing the vessel was probably not formed there, but was derived directly from warty growths situated on the left valves of the heart. The author thought it not improbable, although in the absence of direct proof it was but supposition, till further investigation confirmed these facts, that many cases of partial and temporary paralysis suddenly ensuing in one or more limbs of young persons, especially if accompanied with signs of cardiac disease, might be due to interruption of a proper supply of nutriment to the brain by the temporary plugging up of a principal cerebral artery by fibrine, detached from a diseased valve on the left side of the heart. Other arterial branches, besides those of the base of the brain, might arrest these fibrinous deposits derived from the valves of the heart. In two cases coagula were found in the iliac and femoral arteries; and in a third, in the renal. The author thought that many specimens found in museums, and supposed to illustrate the spontaneous coagulation of the blood, or the deposition of fibrine within a limited portion of an arterial trunk, were probably to be referred to the same cardiac origin, and he illustrated the point by reference to a preparation in the museum of St. Bartholomew's Hospital. The second subject of inquiry consisted of an examination into the effects produced by smaller portions of fibrine detached in a similar manner, but arrested in the minute arterial branches, or even in the capillaries. The author thought that the singular masses of yellow fibrinous substance found in the spleen and kidneys, and other organs, and hitherto described as 'capillary phlebitis,' 'metastasis,' or 'fibrinous deposits,' were derived from this cause. Out of twenty-one cases in which the author had observed these deposits in the spleen and kidneys, or other parts deriving blood directly from the left side of the heart, in nineteen there was disease of the valves, or of the interior of the left side of the heart. In fourteen of these there were fibrinous growths on the surface of the left valves; in the remaining five there was simple mention of valvular disease. The author thought that the mere fact of so large a number of cases of so-called 'capillary phlebitis' being associated with the presence of fibrinous deposit on the

valves of the heart, suggested a very close relation between the two morbid states. The author then entered upon the third branch of this part of the subject, concerning the series of effects which might result from the introduction of fibrinous particles into the circulating blood, manifesting phenomena indicative of the existence of a morbid poison in that fluid. A case was related of a youth, aged 14, admitted into the hospital with obscure typhoid symptoms, the surface of the body being covered with petechiæ. Delirium, with much febrile prostration, followed; he became subsequently comatose, and died. Upon examination of the body, the surface was found covered with petechiæ. The pia mater was infiltrated with what seemed recently effused blood. The surface of the brain thus presented a blotchy appearance, and amid these spots were yellow-coloured patches of various sizes; some were of a greenish-yellow hue, and had the appearance of being smeared over with pus. The brain was unduly congested, and some ecchymosis near the surface; the cerebral arteries and sinuses healthy; several petechial spots on the surface of the heart, as well as in the cavities; and on the auricular surface of the mitral valve some white fibrinous vegetations, very soft and friable; a like deposit on the aortic valves, with evidence of ulceration; several yellow masses of fibrinous deposit on surface of spleen; cortical part of the kidney covered with minute petechial spots, in the centre of which was a buff-coloured dot; several large yellowish blotches extended deep into the substance of the cortex. The intestinal mucous surface was covered with petechial spots, which were apparent also on the mucous membrane of the bladder, pharynx, œsophagus, stomach, larynx, and trachea. The author considered the mystery of this case cleared up by the post-mortem examination. The attack had been ushered in by a severe pain in the right groin, which was rheumatic; then ensued rheumatic inflammation of the mitral and aortic valves, with ulceration of the latter, and deposition of fibrine. From these deposits portions had probably separated during life, and were transmitted with the blood to all parts of the body, and being arrested in the capillary networks and smaller arteries, produced the various petechial and buff-coloured spots above described.

The second part of the paper related to the effects which might result from the detachment of fibrinous deposits from the right valves of the heart. Reference was made by the author to a paper on the Formation of Coagula in the Pulmonary Artery, by Mr. Paget, published in the 'Transactions' of the Society, as well as to a specimen in the museum of St. Bartholomew's Hospital, in which there was deposition of fibrine on each of the pulmonary valves, with old coagula filling many of the branches of the pulmonary artery. In this case several large, solid, fibrinous masses were found in the substance of the lungs, presenting appearances not unlike portions of old pulmonary apoplexy. Lastly, the author recapitulated the principal points which he was desirous of establishing, viz.,—1st. That fibrinous concretions in the valves of the heart admit of being readily detached during life. 2dly. That if detached and transmitted in large masses, they may suddenly block up a large artery, and thus cut off the supply of blood to an important part; if in smaller masses, they might be arrested by vessels of a smaller size, and give rise to various morbid appearances

in internal organs; or the particles mingled with the blood might be but the *débris* of softened fibrine, yet with power to produce a poisoned state of the blood, and bring on typhoid or phlebotic symptoms. 3dly. That the effects produced and the organs affected would be in great measure determined by the side of the heart from which the fibrinous material had been detached; if from the right side, the lungs would bear the brunt of the secondary mischief; but if, as was most commonly the case, the left valves were the source, the mischief would be more widely spread, and might fall on any part, but especially on those organs which were largely and directly supplied with blood from the left side of the heart, as the brain, spleen, or kidneys.

ART. 32.—*On the Diagnostic Signs of Adherent Pericardium.*
By Professor SKODA.

(*Zeitschrift der Gesellschaft der Aerzte zu Wien, 1852.*)

Before explaining my own observations on the symptoms by which adhesion of the pericardium to the heart may be recognised during life, I ought, says Professor Skoda, to glance at the opinions entertained by others on the same subject.

Henri considered the distinctive sign of this adhesion to be a certain depression at each systole, on the left of the scrobiculus cordis, immediately underneath the false ribs.

Sander indicated a similar symptom,—that is, an undulating movement at the left of the scrobiculus cordis. MM. Laennec, Bouillaud, and Piorry have seen neither one nor other of these symptoms.

There is, during the systole, a certain depression in the scrobiculus cordis, or a little to the left of it, and during the diastole a certain elevation at the same point, whenever the heart inclines more to the left than usual. This is almost invariably the case in insufficiency of the aortic valves, where the heart tends to rise into a horizontal position. On the contrary, when the heart is placed vertically in the chest, there is an elevation of the scrobiculus cordis in the systole which disappears in the diastole. Thus (as will appear in the sequel) it is only when pericardial adhesion is coincident with the vertical position of the heart, that it gives rise to systolic depression in the scrobiculus cordis; if the heart preserves its natural position, or is placed more horizontally, such depression, contemporary with elevation in the intercostal space on the left side, proves that there is no pericardial adhesion.

According to Hope, the adhesion in question manifests itself by,—1, a sudden sounding movement, perceptible to the stethoscope, and especially distinct in hypertrophy and dilatation, in which case the sound corresponds to both systole and diastole; 2, a *bruit de soufflet*, extending into the aorta, most perceptible when the heart's action is vigorous, and accompanying, in preference, the first sound; and 3, a projection of the costal cartilages in the left præcordial region.

Of all these symptoms, M. Skoda observes that they may coexist with pericardial adhesion, but that they have no necessary relation to that state.

Dr. C. J. B. Williams considers that the cardiac movements are more conspicuous, and extended over a wider space, and that the intercostal spaces are perceptibly drawn inwards during the systole when the heart is firmly adherent to the pericardium and the pericardium to the costal pleura. These movements, also, always remain the same during a full inspiration, from the heart retaining the same relation to the thoracic parietes,—which is not the case in the natural state of things. For the same reason the region of cardiac dulness always remains the same during inspiration and expiration, and in whatever position the patient may be placed.

But the space over which the beats of the heart are seen and felt, varies with the size and position of this organ, the force of the beats, the thickness of the parietes, the width of the intercostal spaces; and therefore, it cannot be taken as diagnostic of pericardial adhesion. The drawing inwards of the third and fourth intercostal spaces during the systole is seen in most persons whose chest is spare and lean, and in the fifth also, when there is any hypertrophy. In pericardial adhesions the movements of the hypertrophy are not equally perceptible to sight and touch during inspiration and expiration, but sometimes they are more perceptible in one act, sometimes in the other. The region of cardiac dulness also remains the same in all periods of the respiratory act, and in all positions of the patient, not only in pericardial adhesion, but also in pericardial effusion, (when this is considerable,) or in encysted pleuritic effusion in the same neighbourhood, or in mediastinal tumours: therefore this symptom is not diagnostic.

According to Dr. Arran, the second sound of the heart is fainter, briefer, and heard over a more limited space than usual, the more the pericardiac adhesion is extensive; and when the cavities of the heart are enlarged, these changes are more marked. Eventually the second sound is lost altogether. This opinion is founded upon certain theoretical notions as to the mode in which the second sound is produced, with which notions, and the deductions founded upon them, M. Skoda is at variance.

Dr. Sibson has described many cases of pericardiac adhesion. Usually the thoracic parietes were drawn inwards during the systole, and in some of the cases the apex of the heart was pushed forwards during a part of this act. In one case the pulse beat from 140 to 180. I am convinced, says M. Skoda, that with a pulse so frequent, it must be most difficult, at any time, to distinguish between the systole and the diastole, and still more so when they were associated with abnormal sounds, and that it would be an utter impossibility to detect two movements in the systole under these circumstances. In these observations, therefore, the two beats of the heart would seem to have been confounded occasionally, and the diagnostic value of the observations to be sacrificed on this account.

Bouillaud in six or seven instances recognised the existence of pericardiac adhesion by the following signs:—1st, evident depression, or permanent shrinking in the præcordial region, analogous to that which is seen in the side in adhesions following upon pleurisy; 2d, embarrassed movements of the heart, perceptible to the hand and ear, the apex not striking against the side with its natural freedom.

The præcordial depression or shrinking, however, may be congenital, or the result of pleuritic effusion, and it may certainly be absent in some cases of pericardiac adhesion. And if dependence was placed upon the second sign, we might often suspect adhesion in persons at rest whose hearts were perfectly healthy, and deny its existence in Dr. Sibson's patients, though in these it really existed.

Professor Skoda then goes on to relate three cases, for the purpose of showing that the means which he proposes for the detection of pericardiac adhesion are not mere theoretical deductions.

Case 1.—Th. H—, æt. 17, watchmaker, was admitted on the 8th of August, 1845. He had a flattened, indolent, solid tumour in the second left intercostal space, near the sternum. On percussion the dulness extended from the second intercostal space to the xiphoid cartilage, and from the middle of the sternum to the nipple. The tumour was elevated in the systole and depressed in the diastole; the third, fourth, and fifth intercostal spaces were conspicuously drawn inward during the systole, and rendered protuberant in the diastole. The apex of the heart was not distinguishable. The cardiac sounds were normal; the second sound of the pulmonary artery double; the pulse at the wrist natural and synchronous with the systole; the impulse of the heart moderate.

Diagnosis.—The heart is strongly and entirely adherent to the pericardium, and the pericardium to the sternum and adjacent parts. In consequence of this latter adhesion, the heart is drawn towards the sternum in the systole instead of moving outwards towards the left side of this bone, and this inward movement drags with it the intercostal spaces, which thus become depressed at this time. The systolic elevation in the second left intercostal space is due either to a dilatation of the pulmonary artery, which dilatation is covered with thick coverings of false membranes, or else to a dilatation in the arterial cone (*conus arteriosus*) of the right ventricle, the cone being paralysed at the same time,—the last hypothesis being the most probable.

Autopsy.—In the second intercostal space, underneath the pectoralis major muscle, was a caseous mass, which mass was separated from the cavity of the chest by the healthy pleura. The pericardium was firmly adherent to the heart throughout its entire extent, and externally it was connected to the neighbouring part of the thorax by firm bands of lymph. The heart was in its natural position. The right ventricle was dilated, and the corresponding auricle converted into a hard, friable, tuberculous mass, which mass extended to the dilated arterial cone. In the infundibulum the only remains of muscular tissue were some pale fibrous ligaments. The parietes of the heart were not more than a line in thickness. A tuberculous mass, of a ring-like shape, surrounded the aorta and descending vena cava. The lining membrane of the great vessels and the valves were healthy.

Case 2.—Wenzel Pruscha, a worker in ebony, aged 16, was admitted the 20th of September, 1845. He was of a good constitution, previously healthy. For fourteen days he had complained of pain in

his side, and for four days of dyspnoea. On examination, effusion in the pericardium and inflammatory infiltration in the inferior lobe of the right lung were found to exist, and there was a pericardial *bruit de rape* throughout the cardiac region. On the 30th, the effusion had diminished a third, the bruit remaining the same. On the 4th of October the bruit was feeble and confined to the apex of the heart, which part displays itself during its systole in a slight raising of the fifth intercostal space. On the 8th the first of these signs has ceased, and the other is scarcely perceptible. On the 16th the fever relapsed, but without any new symptom in the heart. On the 26th there is at each systole a sinking in of the third, fourth, and fifth intercostal spaces, which disappears during the diastole. The apex of the heart is no longer perceptible to the sight; the pulmonary artery gives a systolic shock in the second intercostal space; and the cardiac and arterial sounds are normal. On the 22d of November Pruscha left the hospital, to all appearance, well, except that his respiration was a little fettered in ascending the stairs. The sinking in the intercostal spaces still continued during the systole, and at the same time there was a certain depression in the inferior half of the sternum, which depression disappeared, with a sort of shock, at the diastole.

Diagnosis.—Complete adhesion of the pericardium with the heart and the surrounding parts. The depression in the third, fourth, and fifth intercostal spaces to be accounted for by the morbid attachment between the heart and the sternum; that of the sternum, by similar attachments passing from the back of the pericardium to the spinal column.

Autopsy.—In February, 1846, this patient returned to the hospital with pneumonia of the left side, of which affection he died in the April following. The symptoms in connection with the heart had undergone no change, nor did they undergo any. On examination, the heart was found in its natural position, the right ventricle hypertrophied, and the valves healthy. There were firm adhesions between the heart and the pericardium, and between the pericardium and the left lung, the costal pleura and the vertebral column. These adhesions, which were of a tuberculous nature, were partially abundant behind the heart.

Case III.—J. Eden, wt. 44, a day-labourer, was admitted on the 13th of May, 1851, for patency and contraction of the mitral valve, catarrh, ascites, and œdema of the inferior limb. In the fifth left intercostal space there was an obvious depression coincident with the systole, which disappeared after the systole, and in the same spot a shock coinciding with the commencement of the diastole.

Diagnosis.—Adhesion of the heart to the pericardium, and of the outer surface of this membrane to the inner side of the thoracic parietes. The intercostal space is drawn inwards in the systole, in consequence of the heart being fixed to the sternum, and not able to execute its natural movement outwards. The disappearance of this depression, and the accompanying shock which accelerates the commencement of the diastole, are due to the natural resilience of the intercostal tissues when the systolic traction is intermitted.

Autopsy.—Adhesion of the heart to the pericardium, and of this membrane to the walls of the chest; insufficiency and contraction of the bicuspid valve; hypertrophy and dilatation of the right side.

From these three cases it may be seen that the diagnosis of adhesion of the heart to the pericardium was always established by signs which warranted the supposition, that the apex of the heart in the systole did not move downwards and to the left, but upwards and to the right. In order the better to understand the value of these symptoms, it is desirable to revert to their characters, which have been erroneously given as distinctive. The apex of the heart does not give a systolic shock, and there is either no shock at all at this time, or it happens during the diastole.

In the intercostal spaces which answer to the apex of the heart, or frequently one or two spaces higher, there is a perceptible sinking at each systole, when the heart is adherent to the pericardium, and the whole firmly fixed to the side. Without this latter lesion the corresponding intercostal spaces are not depressed, and such depressions, therefore, are not distinctive of mere adhesion of the heart to the pericardium. Moreover, when these depressions exist, the apex of the heart is not usually felt to impinge against the side; the reason of this being, that the organ is confined under the sternum by its unnatural attachments. The traction of the inferior half of the sternum is a certain sign of adhesion of the heart to the pericardium, and of the latter to the sternum on the one hand, and the spinal column on the other.

Depression of the scrobiculus cordis, or of the left side of it, has not yet been mentioned. It is probable, however, that the ascending movement of the diaphragm is interfered with when the heart is fixed to the sternum, and that in this way the movements of the heart may be more conspicuous in this part; but as yet M. Skoda has met with no proof of this.

There exists no direct relation, although there is a very frequent coincidence, between pericardiac adhesion and a systolic shock at the base, or above the base, of the heart. If the dulness of the præcordial region remains the same during inspiration and expiration, pericardiac adhesion may be rightly diagnosed, if there are no other diseased conditions which might give the same sign—a fact which may be determined with a little care.

(D.) RELATING TO THE ALIMENTARY SYSTEM.

ART. 33.—*On the Treatment of Diarrhœa, Cholera, and Dysentery, by Sulphuric Acid*; by (1), Mr. EDGAR SHEPPARD, of Enfield; (2), Dr. MILLAR, of Stoke-Newington; and (3), Mr. COX, of Kensaltown.

(1. *Prov. Med. and Surg. Journal*, Sept. 15. 2. *Lancet*, Oct. 9 and 16.)

[The experience of these gentlemen agrees with that of Mr. Griffiths, Mr. Cox, Dr. Fuller, and Mr. Buxton, as to the efficacy of this remedy under the above-named circumstances.]

1. "During the last six weeks, (says Mr. Sheppard,) I have seen upwards of fifty cases of diarrhœa, many of them severe, some few the very worst forms of English cholera. In only one instance have I witnessed the failure of the acid treatment, and in that instance the chalk

and astringent treatment failed also. There was only this difference between the two systems:—the acid plan seemed to have no effect upon the disease, the chalk plan actually aggravated all the symptoms to a very frightful extent."

[He further adds:]

"The character of the epidemic which has been so prevalent in my neighbourhood during the last six weeks, has been as follows:—Great prostration of the vital powers; severe griping and pinching pains in the bowels, (not invariable,) greatly aggravated by drinking anything hot, greatly relieved by cold; tongue generally dry and furred, occasionally moist and red; distressing flatulence, the bowels being at times very much distended; burning thirst, and sensation of heat down the whole course of the alimentary canal, with (in some cases) incessant vomiting."

[Then follow five cases, of which the subjoined will serve as an example.]

"I. T—, seized on the morning of August 1st with violent pain in the bowels, with vomiting and purging—a most decided case of what is vulgarly called '*upwards and downwards*.' I was sent for about nine o'clock in the evening. He complained of intense pain, which had been greatly increased by his having swallowed, about half an hour previously, a cup of hot tea, although the stomach only retained it for about five minutes; pulse feeble, 120; tongue red and moist; feet cold; intense thirst and desire for cold water, which his friends would not let him have; had had about fifteen watery rice-coloured evacuations since the morning. Nothing would remain on the stomach. I immediately gave him a dose of the following mixture, which I had taken with me in my pocket, upon his wife's description of the case:—R. Sacchari Albi, dr. iv; Acid. Sulph. Dil., dr. ij; Tr. Cardamom Co., dr. iv; Aquæ Ment. Pip. ad., oz. vj; M. A fourth part to be taken every four hours.—The patient had no sooner swallowed the mixture than it returned. I then ordered some cold water fresh from the pump to be procured, when I allowed him to drink as much as he desired. He immediately swallowed three tumblerfuls, and expressed the most intense satisfaction. 'The burning heat,' he said, 'was quenched.' The pain immediately ceased. The sickness did not return. In about ten minutes' time I gave him another dose of the mixture, with a pill of calomel and opium, $\text{gr. } \frac{1}{2}$ grain each, and left him with directions to continue the mixture every four hours, and drink as much water as he wished. The following day I found my patient quite well. There had been no recurrence of either the vomiting or purging."

[Afterwards are these conclusions:]

"1st. Sulphuric acid in these cases is *more efficacious* than alkalis, opiates, and astringents, in a proportion greatly exceeding ten to one.

"2d. It is *more rapid* in its action, (especially in children,) in a proportion greatly exceeding twenty to one.

"3d. It seems to act in a more rational and (if I may so express myself) scientific manner, by increasing the *tone* of the mucous membrane of the alimentary canal, rather than by simply astringing its pores.

"4th. The worse the case, the more rapid and marvellous seems to be the cure,—a most striking feature as compared with the treatment by chalk and opium.

"I would urge, in conclusion, upon my medical brethren, the desirableness of giving this system a fair trial; and I would, moreover, advise them, instead of giving the acid alone, with water, to combine it with a little sugar and (most rare and excellent of all tinctures) compound tincture of cardamoms, which seem greatly to relieve the so-frequent distressing flatulence. Unless the character of this autumnal epidemic should greatly alter, they will arrive at the conclusion, after having tested fairly the acid plan of treatment, that it does not admit of comparison, but only of *contrast*, with the olden system."

2. [Dr. Miller furnishes an abstract of 27 cases of diarrhœa, taken at random, as they occurred in ordinary practice. Some of these cases were extremely bad, and wanting little of the intensity of Asiatic cholera. Several of them were in infants. The mixture employed consisted of twenty minim doses of dilute sulphuric acid with the same quantity of compound tincture of cardamoms. The following two cases may serve as illustrations of the twenty-seven:]

"1. August 9th.—Mrs. W—'s infant, aged four months. When first called to this case, I found the child perfectly exhausted by diarrhœa and vomiting. She had been already ill three or four days; sunken eyes, and apparently very near death. The bowels were now constantly open, and there was continued sickness. I tried a variety of means until the 16th; I then commenced the dilute sulphuric acid. On the 17th the diarrhœa was much better; on the 20th the child was well.

"2. Sept. 22d.—Mrs. P—, æt. about 28; has had diarrhœa for three weeks, until she has become quite blanched; has had four actions since six o'clock this morning, and it is now only nine; pulse feeble; papillæ of tongue much elongated; pain in the loins and bowels; feet and legs swelling; she quite staggered from debility when she left my house; she says her natural colour is florid.—Sept. 23d. She took three doses of the mixture, and the diarrhœa entirely ceased; her colour is already returning, and she says she has not been so well for these two months."

3. [Mr. Cox writes to substantiate his own claim to having first tried, in this country, sulphuric acid in cholera; and in the course of his communication a fact of considerable interest transpires—namely, that a celebrated Austrian remedy for cholera, which was analysed by Dr. Herepath, of Bristol, in 1851, (in 'Lancet,' August 9,) consisted mainly of sulphuric acid.]

ART. 34.—*On the Structure, Function, and Disease of the Liver, and on the Action of Cholagogue Medicines.* By Dr. C. HANDFIELD JONES, F.R.S.

(The Lancet, June 26.)

In a paper recently read, Dr. C. H. Jones first described the minute structure of the liver, which consisted essentially of a mass of nucleated

Dr. C. H. Jones
Handwritten signature

cells or celloid particles, usually more perfectly formed than the cells either of the salivary or renal glands, presenting a distinct nucleus, with a nucleolar spot, an exterior envelope, and an included mass of soft, semi-solid, albuminous substance, which commonly contained a few oily molecules. In addition to these, in well-nourished livers, were numerous free nuclei, imbedded in albuminous blastemà, which exhibited various stages of progress towards the mature or perfect cell.

The oily contents of the cells were subject to great variation, both in the same individual and in different classes of animals; the less perfect the type of the respiratory process, the greater the quantity of oily matter in the hepatic cells. The cells in their general mass constituted the hepatic parenchyma; this might be subdivided into smaller portions, called lobules, which were separated from each other more or less completely by fissures, the fissures themselves being continuous with canals that ramified throughout the parenchyma, and which, from containing the portal vein and its associated vessels, had been termed portal canals. In reference to the mode of distribution of the vessels, originally so well expounded by M. Kiernan, the author remarked that he decidedly agreed with Theile, who denied the existence of the vaginal branches and plexus of the portal vein mentioned by M. Kiernan. The author quoted from a paper by Mr. Paget, who had described these vaginal plexuses to be derived, not from the portal veins, but from the hepatic arteries, from which they were completely filled, when both arteries and veins were at the same time injected. The interlobular portal veins were therefore derived directly from the portal veins; and those which appeared to be vaginal branches of the portal vein were its internal roots, by which it received the blood which had served for the nutrition of the hepatic ducts and other vessels of the liver.—After alluding to the mode of ramification of the hepatic artery, and the divisions of the hepatic ducts following the branches of the portal canal, the author referred to the relation which existed between the ultimate ducts and the cells constituting the parenchyma of the lobules. The prevalent opinion had been, that these cells were exactly homologous to the cells of the renal tubuli or salivary vesicles, like them growing on a free surface open to the exterior. Hence some anatomists had believed they had detected a basement membrane, forming anastomosing tubes, constituting a true lobular biliary plexus. Others, unable to find a basement membrane, had described the ducts as continued into the parenchyma of the lobules, as channels without proper walls, mere intercellular passages. After referring to the researches and opinions of Weber, Müller, Professor Retzius, on the one side, and of Val Guillon, Gerlach, and Dr. Carpenter, on the other, the author stated that the views of Kölliker, who denied the existence of intercellular passages in the lobule, agreed very nearly with his, (the author's,) and conceded his main position, that the cavity of the ducts was quite shut off from the cell of the lobules or their interspaces. The structure of the ultimate ducts, which the author had first discovered, was peculiar, and seemed to indicate strongly that they exerted active functions, and that they were something more than mere efferent canals. The

injection of the duct, in the livers of pigs, by the double method, using separately saturated watery solutions of bichromate of potass and acetate of lead, exhibited an abundant yellow precipitate in the fissures; but in very few parts did it penetrate the lobules, which must have happened if there existed a lobular biliary plexus, or a plexus of intercellular passages. The author conceived, therefore, that the hepatic duct did something more than merely carry out already elaborated bile. The ultimate ducts were far too small, and too sparingly distributed, to be able to take up the bile from so vast a mass of cells as that which constituted the parenchyma. If the ducts did not extend beyond the margins of the lobules, of which the author had no doubt, then the bile must be transmitted from cell to cell; or there was a march of cells outwards from the centre to the circumference; or else the bile, arriving at the margin of the lobules, was taken up by the ultimate ducts in some unknown way. The author thought such assumptions groundless and unnecessary; and that the pathological state of fatty liver, as well as the fatty liver occurring naturally in fishes, showed that the secretion of the parenchyma was not identical with that of the ducts, for the gall-bladder could hardly contain deep-green bile, when the parenchyma was nought but a mass of oil. He concluded, then, that the parenchymal cells of the lobules did not merely secrete bile which was carried off unaltered by the ducts, but that the cells secreted biliary material, or some of its components, which were not fully elaborated or formed into perfect bile, except by the action of the ultimate ducts. Proof was then offered that the hepatic cells did not ordinarily contain bile, although it was commonly held they did. He believed that to be a diseased or exceptional condition, not found in the hepatic cells of slaughtered or healthy animals. Furthermore, a yellow tint in the cells was no proof of the presence of bile; it showed merely the presence of pigment, and yellow pigment is found in the fat of some animals, quite independent of biliary secretion. Chemistry must be resorted to, to solve the question of the presence of bile in the hepatic cells. The author had made alcoholic extracts of the livers of different animals, and having evaporated to dryness, the residue, when dissolved in water, failed to show, by Pettenkoffer's test, any reaction characteristic of the presence of the bile. The author, however, did not wish to express a positive opinion, but he thought that the received opinion had need of more direct evidence, before it could be regarded as proved. He then detailed the mode in which the morphological structure of the ultimate biliary duct fulfilled the function of secretion. The chemical changes which the ultimate ducts effected, might be conceived according to the hypothesis of Lehmann; and a summary of our present knowledge might stand as follows: sugar, oil, and a yellow pigment were found in the parenchyma of the liver; bile is not found there, but in the ducts; it is inferred, then, that the ducts, through their ultimate extreme portions, *make* the bile.—The author next proceeded to detail some experiments made relative to the action of cholagogue medicines, the results of which led him to believe that mercury, muriate of manganese, and colchicum, were the only ones which seemed to increase the production of yellow pigmentary matter in the cells of the liver.

They also increase the production of glyco-cholite and tauro-cholite of soda; but it had to be determined whether the quantity of these principles was always proportionate to the yellow pigment. It was clear that the cholagogue action of a medicine, its emulging effects on the ducts, was distinct from that which it excited in the production of biliary pigment. One very important effect of the administration of mercury on the liver was noticed to be congestion of this organ; an argument rather forbidding the use of the remedy in inflammation of the substance of the liver, a plan otherwise recommended by analogical experience. The author then passed to the subject of diseases of the liver; the microscopic appearances of fatty liver were detailed, and the question, what constituted true fatty degeneration of the liver, discussed. Was it a simple increase in the quantity of oil naturally existing in the hepatic cells, or was it a further and more important change? He believed the latter. In the liver of animals artificially fed on oily food, and subsequently examined, the cells, as well as the inter-cellular substance, were loaded with oil-molecules: the accumulation of oil was equal everywhere. But in the morbid state of fatty degeneration, the oil-drops were not enclosed in distinct cells, but appeared to lie in an indistinct and granular, or semi-fibrous substratum. Another point of difference consisted in the absence of sugar in true fatty degeneration; while in the liver of an animal fed on oily food to produce a fatty liver, sugar could be detected. Another point of importance was the limitation of fatty degeneration to the margin of the lobules; it was not a mere accumulation of oil in the marginal cells, but a destruction of those cells; a liver thus affected presented the lobules marked out by a zone of opaque matter. No satisfactory explanation of this tendency of oil to accumulate in the marginal cells could be offered. Fatty degeneration of the liver might occur in very different diseases; it was by no means peculiar to phthisis. Reference was then made to the waxy liver of Rokitansky, with which the author was not sure that he was acquainted. Cirrhosis was then mentioned, and Rokitansky's description quoted, as also that of Dr. Budd, whose views expressed the opinion ordinarily received, but from which the author in some degree dissented. The author believed that an unhealthy nutritive process was the essence of cirrhosis, and might be developed in one of three situations. 1. In the larger and moderate-sized portal canals, excluding only the smallest. 2. In these last and in the fissures. 3. In the smaller canals and fissures, and in the substance of the lobules. The first form produced common *hobnail* liver; the second and third, the tough, firm, dense liver, sometimes termed brawny. The author considered cirrhosis to represent essentially a degenerative process, and to arise from the effusion of an unhealthy plasma, not only in the canals, and fissures, where it induced unnatural increase, but also in the external part of the lobules, where it passed into a solid form, and constituted an amorpho-granular substance, compressing the capillaries and obstructing the secreting cells. The thickening and condensation of the fibrous tissue in the liver were thus not so much the effect of an inflammatory action, as of a low degenerative process, analogous to that which stiffened the valves of the heart and contracted the orifices;

and which view the author thought was supported by the results exhibited in a table appended to the paper.—The subject of jaundice next received attention. This was a disease that manifestly resulted from the conveyance into the blood of bile pigment, a constituent of the bile which was essentially excrementitious, and intended to be cast out with the fecal matter. In many cases it existed only as retained excretion; in others it seemed to be formed in excessive quantity, as in the acute yellow atrophy of the liver. Yellow matter was often found in the central cells of the lobules, and, nevertheless, there was no jaundice. It should be borne in mind, that the yellow pigment, as it existed in the cells, did not evidence the presence of biliary matter, of cholic acid, or its conjugates. The yellow matter could be extracted by alcohol, and its characteristic reaction obtained by nitric acid, but Pettenkötter's test decided against the presence of any organic biliary acid. The deep colour of the urine in jaundice depended on the presence of bile pigment solely; no trace of cholic acid was discoverable. The author considered the majority of cases of jaundice to depend on the absorption into the blood, not of completely formed bile, but of one of its constituents only, the yellow pigment; and this might take place in one of three ways: 1, by a mechanical obstruction to the flow of bile into the intestine, through the ductus communis choledochus; 2, from inaction of the elaborating ducts; 3, with or without impairment of the action of the excretory ducts, when an increased quantity of yellow pigment was formed in the parenchyma of the liver.

ART. 35.—*On Oil of Male-Fern as a Vermifuge.*

(1. *Edinburgh Monthly Journal of Medical Sciences*, June. 2. *The Lancet*, Aug. 14 and 21.)

[The question of the oil of male-fern as a vermifuge is discussed in the 'Colloquia de Omnibus Rebus;' it is also illustrated by two cases in which the remedy was employed therapeutically, the one by Dr. Gull, the other by Mr. Molloy.

1. In the 'Colloquia' the subject is thus managed:]

"*Chemicus*. I should scarcely be thankful for a new anthelmintic against tænia. We are well provided already, what with oil of turpentine, and pomegranate-bark, and this Abyssinian koussou.

"*Medicus*. Once lately the koussou completely failed in my hands; and I have been rather inclined to take up the *Male Shield-Fern*, though a very ancient vermifuge. It is, I think, about five and twenty years since Peschier of Geneva mentioned that it scarcely ever failed in his hands, when given in the form of an ethereal extract; that he and a friend had cured several hundred cases with this preparation, and had not met with a single failure. But, unfortunately for the male shield-fern, it was not a new remedy; it has been known since the days of Dioscorides, who tells that a dose of four drachms of it "drives out the broad worm,"—*ελμινθα πλατυαν εκτινασσει*; and besides, it grows at every man's door. And therefore, while hundreds make use of the pomegranate-bark and of koussou, because they are foreign, and modern, and costly, no one, to my knowledge, has tried Peschier's *Oléo-résine de Fougère* in this quarter, except myself and you, Mr. Editor.

"*Editor.* It failed lately in my hands in the man I sent to you.

"*Medicus.* Wait till I tell you what befel that case. Some four or, perhaps, five years ago, I gave the oleo-resin to a young woman in the Clinical Ward of the Royal Infirmary, who had been long ill, and in a few hours she discharged many feet of a strong tape-worm in one mass. She was kept subsequently fourteen days in the hospital, in good health, and passing no more joints; which previously she used to part with every two days or so. Soon afterwards I was consulted in the case of a Glasgow gentleman, who had taken sundry remedies there without avail. A single dose of the oleo-resin brought away a mass of tænia; but the joints soon reappeared, and he was eventually cured by repeated doses of oil of turpentine. In this case, however, the ethereal extract was prepared not under my own eye, as in the former instance, but by a druggist; and I doubt whether the precautions for obtaining a sound preparation were fully known or attended to. Very recently a man was received into the Clinical Ward of the Infirmary, who had laboured under tænia for five years, and been repeatedly treated with various remedies without avail. He had often taken turpentine; and on one occasion he got the commercial oleo-resin of male shield-fern from you, Mr. Editor,—for this is the case you referred to. After these remedies he continued to pass one or two single joints almost daily, as he had always done. I first gave him half an ounce of koussou. No perceptible effect ensued,—he passed his single joints as usual. In a week I gave him a decoction of two ounces of the pomegranate-root bark of the shops, according to the original directions of Mr. Breton. Still no effect resulted. Meanwhile I was preparing the oleo-resin of fern; and in a week more I gave him twenty-four grains of it. In a few hours he discharged six feet of a strong tapeworm without any purgative, and unaccompanied by any fæces; and in some hours more he passed other eighteen inches after a purgative. Both portions were evidently very fresh. After that no joints appeared in the discharges, and he has been now eight days free of them. By a singular coincidence,—for tænia is a rare disease in Edinburgh,—another case was admitted a few days after the last. This patient had been three years ill. He had often passed single joints, and about a month before admission nearly eighteen inches in one line. But he never discharged any mass of continuous joints after any of the numerous unknown remedies he had taken. He got twenty-two grains of the same oleo-resin as the last patient; and soon after taking a subsequent laxative he passed six feet of a more slender and softer worm than the last patient. For a few days he continued to pass some joints, which had partially undergone digestion; but these soon disappeared.

"*Obstetricus.* Where did you get your root? What precautions were used in preparing the extract?

"*Medicus.* It may be got in any bosky dell about Edinburgh, or in wide Scotland. The extract used in the last two cases was made from plants obtained in Pittencrieff Glen, under the ruinous cloisters of Dunfermline Abbey. The plants for the first case were gathered on classic ground,—in Ormiston-hill Glen, the rural retreat of our Cullen, where may still be seen the ruins of box-trees, holly, and arbor-vitæ,

planted by his hands, the banks carpeted with saxifrage and periwinkle of his nursing, and on the old garden walls the crumbling vestiges of quaint inscriptions,—from which it might seem as if idleness and delving had been the sole occupation of his whole life.

“*Editor.* Whereabouts is this? How might a humble pilgrim visit such a sanctuary?”

“*Chemicus.* A quarter of a mile west of the Kirknewton station on the Caledonian Railway, and within a good stone-cast from the embankment, at a farm-steading, you will easily find the lower end of the glen. It is a lovely spot. There is no fence. Nor does the property belong to his Grace of Atholl.

“*Medicus.* Here, as in other localities, the female fern, *Athyrium Filix-femina*, grows often close beside the medicinal species, *Lastræa Filix-mas*.

“*Chirurgus.* What is that? When I was a student, and attended three courses of Dr. Rutherford’s prelections upon botany, five and thirty years ago, I knew all common ferns in Scotland; but I never heard of that one. There was a *Polypodium Filix-mas* in those days.

“*Chemicus.* But there is no longer. It has been extirpated. The *Aspidium Filix-mas* took its place; but that is extinct too. The *Nephrodium Filix-mas* succeeded it, and even that also is defunct. Now we have got *Medicus’s* plant, *Lastræa Filix-mas*, but how long we shall be allowed to keep it not even Dr. Balfour can say. It is lucky, however, while nomenclaturists have been committing such fearful havoc upon British botany, that the male shield-fern presents to us the very same external characters, and the identical therapeutic properties, which it did to Dioscorides two thousand years ago. Is there never to be any protection against this perpetual reform of botanical jargon.

“*Medicus.* Not in our days. There is scarce a medical plant that has not had three or four names in my time.

“I was observing, that the female fern often grows alongside the male shield-fern. But the latter is easily distinguished from every species that resembles it, by the fronds, which are attached in the withered state even at this period of the year, being simply pinnate, not compoundly so. Peschier limits the season for collecting the root to the period from May to September inclusive, when the herb is growing or fully developed. I have always found it quite active enough in March; so that it is probably serviceable at all seasons. The fresh portions only of the root-stock and frond-bases should be used. These should be cut in pieces, and dried at a temperature not much above 140° F., and best of all in a hot-air press. Peschier says the dried root loses its virtues in a twelvemonth. I have always used it newly dried. Being triturated not very finely, and packed rather loosely in a percolator, it is to be exhausted by sulphuric ether in the way of displacement. The greater part of the ether is then distilled off, and what little is left, to prevent risk of injury from too high a heat, is best expelled by exposing the residue to a vapour-bath temperature for a few minutes, in an open basin of glass or porcelain. I have lately found in the shops an article from London, which ob-

viously retains a good deal of ether; but this is wrong, for there is no regulating the dose with such a preparation; and there is no excuse for so slovenly a proceeding. The oleo-resin which remains should be a sluggish syrupy fluid, opaque, dark-green, smelling not unlike orris-root, and possessed of a strong bitter and slight orris-like flavour. I have given it usually in emulsion, by triturating from eighteen to twenty-four grains with yolk of egg, and adding gradually syrup of orange and water. The worm comes away in a few hours, sometimes without any other means being used, but more generally not till the operation of a brisk laxative."

2. [Dr. Gull's case was one of *Bothriocephalus latus* in an English child, which had never lived out of this country; and therefore an interest attaches to it from the rarity of the worm as well as from the treatment pursued. It is as follows:]

"Susan G—, aged 5 years, came under my notice first in December, 1851, for tape-worm. Her mother brought with her a portion of worm the child had recently voided, and which, to my surprise, was a considerable length of the *bothriocephalus latus*. Being anxious to investigate the case further, I declined ordering any medicine unless she was admitted into the children's ward. This the mother, at the time, objected to; but subsequently the child was admitted under my care, on the 20th of February, 1852. Careful inquiry was made of the child's birth-place, and where it had lived, and her statements never varied from those contained in the following report by Mr. Chaplin, the clinical clerk:

"She lives at Woolwich, and the mother gives the following account of her. At the age of eighteen months, having then been weaned more than half a year, she became very ill, with feverish symptoms and cough. Her ailment was so severe that it was thought she would die; but after having passed a quantity of tape-worm, rolled up into a mass of the size of the bowl of a tobacco-pipe, she began to recover. Since that time she has had several similar attacks, becoming feverish and fretful, with loss of appetite, &c., and soon after passed a portion of the worm, upon which the symptoms have subsided. These attacks came on, at first, at intervals of some months, but lately they have been more frequent. She passed the last portion about a week ago, having previously suffered in the usual way, described above. The several pieces of worm which the mother had collected, and brought with her, measured thirteen feet. The parents of the child are English, and neither of them has ever been abroad, the limit of their farthest excursions from home being Gravesend. The mother was born at Poplar, the father at Woolwich, where he works as a smith. His occupations have sometimes taken him on board foreign vessels. They have no foreign friends, nor friends residing on the continent, from whom they could have received any presents. The child was born at Limehouse, and lived there with its parents for some time, and during that period the family probably used the water of the New River Company. Whilst living at Woolwich, they have obtained it from the Kent Waterworks. On admission, the child was pale, rather dull, and feverish; bowels confined; pulse natural; tongue clean and pale; abdomen

large and hard. Ordered ten grains of jalap and mercury powder to be taken at bedtime.

"23d. — The bowels have not yet been acted upon. Repeat powder. 25th. Powder produced a copious evacuation, but no portion of worm expelled. Ordered the following mixture: Magnesia and sulphate of magnesia, a dessert-spoonful three times a day. 28th. The bowels have continued to act freely, but no portion of worm has passed. Ordered the following draught: Oil of male fern, one drachm and a half; acacia mixture, two drachms; distilled water, one ounce and a half, to be taken early the following morning. 29th. The draught was administered at seven o'clock this morning, and produced slight sickness, but only a small part was returned. At one o'clock the bowels acted forcibly, accompanied with a good deal of straining. The worm, measuring seventeen feet, and including the head, was expelled entire. The child suffered no inconvenience from the medicine in any way, and the following morning seemed well.

"The interest attaching to this case is peculiar, from the species of worm, the early age of its locating itself in the child, and the satisfactory effects of the oil of male fern.

"In our present state of knowledge respecting intestinal worms, every fact connected with their history deserves to be recorded. The occurrence of the *bothriocephalus latus*, in persons who have not lived out of England, is rare. Professor Owen states, that in looking over the collection made by a celebrated worm doctor in Long Acre, he found three specimens of this worm; two of these had come from persons who had been in Switzerland, of the third no authentic account could be given. In a conversation with him on the case here recorded, he remarked that a seaport was just the locality in which we might expect to meet with anomalies in geographical distribution of intestinal worms, since their ova might be deposited in various ways, in such localities, by persons who traded thither, and that it was surprising their occurrence was so rare. To which I may add, that when we consider the fertility of these creatures, and the possibility of Russian sailors being infested with them, we may indeed wonder that they have not been imported amongst us; and the fact that they have not been prevalent, suggests that they are more dependent upon external conditions of soil and the like, than upon the human body itself; for we can hardly suppose that the intestinal secretions of a Russian or Swiss are more favorable to the existence of a *bothriocephalus latus*, than are those of an Englishman.

"The circumstances under which these creatures exist out of the body are yet unknown; but their restriction to certain localities, and the changes of form which some of this class undergo, render it probable that we may yet recognise them under some other form in the water of the places where they occur. With such views, we can well understand why the tape-worm of one locality should not prevail in another, and also why, where a solitary exception is found, it should be in a place having communication with foreign countries.

"The extreme fertility of the *bothriocephalus* will be understood, by considering that each foot of the well-developed worm contains about 150 segments or joints, that each joint possesses its own ovary

and male organs. Hence each joint is fertile; and as each ovary would produce 8000 ova, according to as careful a calculation as possible, ten feet of such a worm would produce 12,000,000 of ova. I have taken every means of examining the head of this specimen, but can find no trace of a terminal pore, by which it could imbibe nourishment, nor any signs of vessels by which the intestinal fluids, if so taken up, could be distributed. It seems probable that these animals nourish themselves as the algæ do, by absorbing the fluids in which they are immersed by the whole surface of their bodies—a view which I think I am at liberty to say is thought by Professor Owen to be not improbable."

3. [Mr. Molley's case was one of ordinary *tænia*. It is thus told:]

"A. W—, an iron-moulder by trade, living in Lambeth, had long been troubled with tape-worm; for the last three or four months, indeed, the symptoms had become so annoying, that he was frequently compelled to leave off work for a time, to remove the joints from the anus, as well as those which had accumulated in his trousers. On the 5th of July I directed him to take, on retiring to bed, a powder composed of four grains of calomel and two of ipecacuanha, together with a strong draught of concentrated compound aloes decoction; at six o'clock on the following morning he had a drachm of fern oil, obtained from Morson's. By the action of the draught and powder, a copious evacuation took place at four, A.M., bringing away a large quantity of joints and other *débris* of the worm; and at twelve at noon, just six hours after taking the oil, the whole of the worm was expelled. It measured more than two yards in length, was very perfect, and had twisted itself into two knots; the first eight inches below the head was remarkably complicated, and cost me some time and patience to unravel; the second, eighteen inches lower down, presented nothing peculiar."

ART. 36.—On Kouso as a Remedy for Tape-Worm.

By Drs. OLIARI and MASSEROITI.

(Gazz. Med. Ital. fed. Lombard, No. 46, 1851, and *Proc. Med. and Surg. Journal*, Sept. 15.)

The three following cases of the successful application of this remedy, are recorded by Dr. Oliari, Director of the Hospital at Cremona:

1. A woman, æt. 36, had for four months frequently passed pieces of tape-worm (*vermes solitarius*) with the evacuations. Without any previous treatment she one morning took five drachms of kouso, with sufficient honey to make an electuary, in two doses, the second two hours after the first. Two hours after the last dose she took an ounce of castor-oil, and another ounce two hours later. In the course of the day she discharged a large number of pieces of tape-worm, from one to two inches in length; and since that time [the period is not stated—Ed.] appears perfectly free from the disease.

2. A girl, æt. 16, took the same quantity, similarly divided, in the form of a warm aqueous decoction, and followed it with castor-oil in precisely the same manner. Besides many fragments, she discharged a portion of worm twenty-two ells in length, with a very pointed ex-

tremity and short joints, such as occur near the head. The head itself could not be perceived. Since this time (a period of two months) she has been quite free from the disease.

3. A man, *æt.* 40, had suffered from tape-worm for several years, and had tried many remedies, which, strange to say, failed to bring away any portion of the worm, although pieces were often observed in the ordinary evacuations. After taking five drachms of kouso (in an electuary), he passed several pieces of worm (*taenia sol.*), six or eight ells in length. He has had no return of the disease.

The two following cases of a similar nature are recorded in the same journal by Dr. Vincenzo Masserotti:

1. A man, *æt.* 40, had from his earliest childhood, at different intervals, passed pieces of bothriocephalus. He had tried the ordinary remedies in vain; his symptoms were increasing in intensity, and he dreaded the same fate as a brother, who had died from insidious gastro-enteritis, induced by the same parasite. Although, after taking the kouso, he interfered with the treatment by obstinately drinking seidlitz water, which induced severe vomiting, yet several pieces of worm were discharged, one of which was twelve ells in length, and had the head attached to it.

2. A woman, *æt.* 33, had for the last eight years often discharged pieces of tape-worm, and had suffered from painful tremors of the limbs, pain in the abdomen, palpitation of the heart, hypochondriasis, and emaciation. After five drachms of kouso, she passed several portions of worm, to one of which the head was attached. None of these portions exhibited any signs of vitality, although pieces she had previously passed showed indications of life when kept in water for two hours. Hence the poisonous power of the drug in relation to the worm is well shown in this case.

(E.) RELATING TO THE GENITO-URINARY SYSTEM.

ART. 37.—*On the habitual presence of Sugar in the Urine of Old people.* By M. DECHAMBRE.

(Note in the *Révue Médico-Chirurgicale de Paris* for May, copied from the Paper read before the *Académie de Médecine de Belgique.*)

The examination of the excretions, and more particularly of the urine, receives at present a great share of attention; but as yet it has occurred to few or none to inquire whether abnormal products are ever normal,—that is, are ever met with in a healthy state. The following experiments, however, will decide this question so far as concerns the presence of sugar in the urine, and for this reason we have no doubt they will be read with interest.

M. Dechambre is not quite clear as to the destination of the sugar which M. A. Bernard has shown to be generated in the liver; but he adopts the opinion of M. Alouro Reynoso that it becomes food for, and is consumed in, the respiratory process, and that the accumulation which exists when these changes are impeded, is passed off by the urine. Hence it occurred to him to ask whether sugar would not be

a natural ingredient in the urine of old people, seeing that respiration is always more or less impeded at their time of life. I remember, he says, the sort of respiratory apparatus, observed by Hourman and myself in the old women at the Salpêtrière, which we described at length in the 'Archives Générales de Médecine,' in 1835. I remembered the lateral collapse of the thorax, the prominence of the sternum, the rigidity of the costo-vertebral articulations, the hardness or ossification of the appendicular cartilages, the attenuated and as if emphysematous lung, the atrophied cells, and obliterated capillaries; and remembering this I thought the conditions could scarcely be more favorable, (according to M. Reynoso's theory,) to the production of sugar in the urine. It was with a view to verifying this conjecture that the following experiments were instituted upon a number of old women, resident at the time in the Salpêtrière.

Experiment 1.—The subject of this experiment was in her 81st year, and in the last degree of feebleness and decrepitude. She was altogether free from habitual cough or difficulty of breathing, and there were no signs, physical or otherwise, of any affection of the heart or lungs, which might interfere with the respiration; so that the imperfect aëration of the blood, if such there was, could only be attributed to the ordinary senile wasting of the lung. About 100 grammes of the urine of this woman, collected early in the morning, was first treated with subacetate of lead, in order to separate the lithic acid and other precipitable organic matters, and then placed in a filter. The filtered liquid was then freed from the remains of the lead salt by means of carbonate of soda, and filtered anew. Then Barreswil's liquid was added, and the temperature raised to the boiling point, when a very copious reddish precipitate was attained, (protoxide of copper.)

Exp. 2.—The same experiment was performed upon the urine of 5 women, aged from 68 to 81, who were staying at the time in the Surgical wards of the hospital; one for an abscess in the arm, another for rheumatic pains, a third for a long-standing skin affection, and the last two for severe bruises. All enjoyed, in other respects, very good health. In each of these cases the urine gave the characteristic precipitate.

Exp. 3.—Eight women were chosen, who were not in the infirmary, but in the ordinary dormitories. They all presented the requisite conditions, that is, they were free from affection of the heart and lungs, and with one exception upwards of 70 years of age. The exception was only 63, but she was very decrepit. Now in these persons, the urine exhibited in two a yellowish cloudiness, which was little characteristic, in six, the true ruddy precipitate.

Exp. 4.—In order to know whether the saccharine condition of the urine in these women was persistent or not, the urine of seven of them was subjected to experiment after an interval of a week, and in this second trial there was found to be in two specimens, no reaction whatever; in two, a slight reaction; and in the remaining three, a distinct precipitate.

The results, so far, appear quite conclusive as to the presence of sugar. Indeed, M. Delouze, happening to see the precipitate in

some of the tested specimens, at once pronounced the liquid to have contained sugar, though he was altogether ignorant of the nature of the fluid, and the object of the experiment. Still there remained the decisive test of fermentation, which was yet to be tried.

Exp. 5.—The urine of four women, whose respective ages ranged from 70 to 92, was mixed together, after having ascertained that each was acted upon by Barreswil's test. Then having heated the mixture with acetate of lead and carbonate of soda, as in the former experiments, it was evaporated until only a table-spoonful or two remained, and the residue mixed with a little 'ordinary yeast. No precautions were taken to preserve any carbonic acid which might be given off; but in due time a small quantity of a colourless liquid was obtained, which burnt with a blue flame, and had the unmistakeable odours and taste of alcohol.

Exp. 6.—A similar experiment was performed some days after on the urine of six old women, all upwards of 70; and in this case the quantity of alcohol was still more abundant, and gave out a strong smell of punch. (sic.)

The alcoholic fermentation was therefore very unmistakeable, thus proving that the urine experimented upon contained a considerable quantity of sugar. Hence, (and upon the former experiment,) M. Dechambre concludes that sugar occurs naturally and habitually in the urine of old people.

ART. 38.—*On Temporary Albuminuria, more particularly as occurring in the course of certain Febrile or other Acute Diseases.* By J. W. BEGBIE, M.D., F.R.C.P.E., Physician to the New Town Dispensary.

(*Monthly Journal of Medical Science, October.*)

[Dr. Begbie's paper possesses much interest, as confirming and extending existing knowledge, by showing that albuminuria is often a temporary, and not unfrequently a salutary, symptom, instead of being, as is supposed by many, a constant indication of serious organic disease. Three varieties of temporary albuminuria are pointed out, to which the names of *Desquamative*, *Inflammatory*, and *Critical* are given.

1. Instances of *Desquamative Albuminuria* are pointed out in scarlatina, cholera, and erysipelas.

Scarlatina.]—“It is just after the commencement of desquamation of the cuticle that the albumen first makes its appearance. In most of the cases I have seen, the third and fourth days after desquamation had set in were the most common. I have found it, however, on the first day of desquamation, and as late in its appearance as the eighth and ninth: this was the case in the urine of a patient I had occasion to attend lately. I had been examining the urine from day to day, and finding no albumen on the eighth day after the desquamative process had commenced, I had begun to doubt the likelihood of its appearing, when on the morning of the ninth day I detected the albumen; it continued visible on the tenth, and passed entirely away on the following day. Here let me say a word as to the examination of the urine:—in

this, as indeed in all cases, both tests—*i. e.*, the application of heat, and the addition of nitric acid must be employed; nor must the examination be made once or twice, and only on those days when the presence of the albumen is deemed most likely,—it should be made every day, beginning before desquamation has commenced, and continued till that process is nearly completed. As a general rule, the duration of the albumen in the urine will be short, probably not longer than a few days; differences, however, exist in this respect,—I have known it to disappear in thirty-six hours, and have found it to continue for ten days. There is one interesting fact in regard to its continuance,—that after its disappearance it will not return, at least so I have always found; in other words, whenever the albumen was not detected after being first seen, its disappearance was a final one. The amount of albumen will generally be small, seldom more being present than to allow the urine to be called slightly coagulable,—a feature of great importance in distinguishing the urine of the simple from that of the dropsical scarlatina.

“The *microscopic character* of the urine, with which the albumen is invariably associated, is the presence of a considerable amount of epithelium, derived from the different parts of the urinary apparatus. Sometimes the entire epithelial lining of the small tubes of the kidney was present, though certainly not frequently. I do not remember to have ever seen in the urine of simple scarlatina the albuminous or fibrinous casts of the small tubes of the kidney, the appearance of which is so common in the urine of the dropsical affection. Besides epithelium, the urine generally contained amorphous urate of ammonia, sometimes crystalline uric acid; and occasionally, though very rarely, the urine, though examined very soon after micturition, contained crystals of the ammoniaco-magnesian phosphate. In all such there existed a greater than usual amount of epithelium and mucous sediment. It is not uncommon to find octohedral crystals of oxalate of lime in the urine at the same stage of the disease.”

[*Cholera.*]—“In several cases the albumen existed in such amount as to allow the urine to be called highly coagulable; but more generally the expressions, coagulable, or slightly or faintly coagulable, more correctly described it. The albumen continued present in general for some days, usually decreasing in amount, but occasionally increasing for a day or two. This coagulability of the urine was associated invariably with the presence of a large amount of epithelium; as in the case of the urine in simple scarlatina the epithelium was derived from the bladder, as well as from the kidney; it was, however, more common in the cholera urine to find the entire epithelial lining of the minute tubes. Attentive observation enabled me to note these further points; the amount of epithelium, and the degree of coagulability of the urine, always stood in exact ratio the one to the other. They generally appeared together, and again in company disappeared. I have found the epithelium present alone before the albumen appeared, but have never observed the opposite case.

[*Erysipelas.*]—“I have found that after severe attacks of idiopathic erysipelatous inflammation, and most frequently when a large surface of the skin has been affected, that the urine has, during the progress

of convalescence, become albuminous. I do not regard temporary albuminuria as so invariable or frequent a symptom of erysipelas, as I conceive it to be of scarlatina, at least I have not found it so. But since my attention was directed to this subject, I have found albumen in the urine during the early progress of convalescence from a large number of severe cases of the disease, more especially when these two symptoms had been present,—severe gastric or intestinal irritation and dérangement, and considerable desquamation of the cuticle. The quantity of the albumen present was never great; the period of its occurrence was at the resolution of the disease, as convalescence commenced, and during the progress of desquamation. It was, as in the other examples of albuminuria I have already referred to, invariably associated with epithelium, affording evidence of desquamation; but more closely resembling the urine of scarlatina, in being less charged with this ingredient than that of cholera."

[Instances of desquamative albuminuria are also mentioned as occurring in variola and other febrile affections of the skin, but these instances are not enlarged upon.]

2. Dr. Begbie finds his second variety,—*inflammatory albuminuria*,—in the dropsical stage of scarlatina, where scanty urine, and the presence of blood and exudation corpuscles, epithelium, and fibrinous casts of the renal tubes, and much general febrile disorder, indicate the existence of inflammatory or congestive disorder of the kidney.]
 "I have examined," says Dr. Begbie, "the urine in many such cases, and have found the albuminous condition much more lasting than in the simple cases,—indeed observation and experience show now pretty plainly that the long-continued albuminuria of dropsical scarlatina may, and often does, lead imperceptibly—insidiously it may be—to organic renal disease. In many instances I have found the albumen, though large in amount, and associated with all the general and local inflammatory symptoms alluded to, speedily and entirely disappear. I have not seen many cases of the dropsy following scarlatina, which I had watched from the commencement of the primary disease, but I have seen a few, and in all such the dropsical and aggravated symptoms appeared at the time the temporary albuminuria was going on, and were evidently the result of exposure to cold. This variety of albuminuria, then, which I have called inflammatory, may or may not be temporary: it is to be feared that not unfrequently neglected, or even unskillfully treated, the affection it accompanies lays the foundation of permanent renal disease. In most cases, however, it is fortunately otherwise, while in nearly all it may be looked upon as, under judicious management, a curable disorder."

3. [The third variety, *critical albuminuria*, is to be found in the critical period of pneumonia, when resolution and absorption were going on, and during the convalescence from certain forms of typhus. It is mentioned also as occurring in puerperal fever and phthisis, as well as in some other affections.]

Pneumonia.]—"The continuance of the albumen is very variable. I have never known it to disappear under five or six days. In chronic pneumonia, more especially when the disease has advanced slowly, and when, as is not unusual, a considerable portion of the lung is affected,

and when, as is certain, cure is tedious, resolution slow, I have found the duration of the albumen longer than in acute pneumonia. In such instances I have known it to continue for weeks. As the duration of the albumen is variable, so is its amount. It was always present unmistakably, allowing no doubt of its existence; often it was present in considerable amount, not unfrequently in very large. Such are the facts I have observed in regard to the existence of albuminuria in pneumonia, or rather in the convalescence from it. In regard to the frequency of its occurrence, I may mention, that in almost all the cases of pneumonia admitted into the Royal Infirmary under the care of the senior physician during a period of nine months, and which I carefully examined, the appearances were such as I have detailed; and that the casual examination of many other cases in wards, under the care of other physicians, served to strengthen my belief in the almost uniform occurrence of the facts now noted."

[*Typhus.*]—"I have found albuminuria by no means an uncommon attendant on the convalescence from typhus; not, however, nearly so invariable in its occurrence as in scarlatina, or even so common as in pneumonia; so frequent, however, as to lead me to examine all cases in which it occurred, and that with very great care. The result has been, that no one of any such cases has, either at the time or during a considerable period of observation afterwards, afforded the evidence of any organic change in the kidneys to account for the albumen in the urine.

"The albuminuria in the case of typhus appears to me of special interest, as occurring much more frequently, if not entirely, in certain cases of typhus. It is in those cases in which we know, or have reason to suspect, that the deposits, generally called typhus deposits, have taken place in internal organs, that we find albumen in the urine. Two or three observations of a somewhat different nature have led me to this conclusion; for example, I have found the urine albuminous in cases of abdominal typhus,—that is, in those cases in which we generally find severe diarrhoea as a symptom during life, and deposit in the intestinal glands as the most prominent lesion after death. In several cases of this kind, which proved fatal, I have found albumen in the urine for days before death; and in others, which happily recovered, I have as frequently noticed its occurrence. In both these instances the albumen appeared, for the most part, at an advanced period of the disease, at least after the particular symptoms had continued for some time; while in the former the albuminuria continued up to death; in the latter, in some it disappeared as convalescence was fairly established; and in others it lasted for a longer period. The amount of albumen in these cases, and the other characters with which the coagulability was associated, were exactly as I have described them in an example of pneumonia; and finding the albuminuria to bear a relation to the deposits in internal organs in typhus, I have been led to regard the kidneys as the emunctories by which the morbid matter so deposited is to a certain extent at least removed from the system,—and, so doing, to regard the temporary albuminuria of typhus as a critical albuminuria. It is, I think, no objection to this view that deposits, such

as those referred to, remain in organs for a lengthened period; for, firstly, I do not think we can pretend to limit the period of their removal or disappearance; and I am inclined to believe that when they do so disappear, the urine will very probably contain the ingredients I have noticed; and, secondly, the calcareous masses found in the spleen, and other organs, accepted as the earthy remains of the deposits spoken of, certainly attest the removal, by some channel or other, of the animal matter, of which, in their original condition, these deposits were partly composed."

ART. 39.—*On the Treatment of Diabetes, by Rennet.*

By Dr. GRAY, of Glasgow.

(*Edinburgh Monthly Journal of Medical Science*, October.)

[In one of the *Colloquia de Omnibus Rebus*, is the following extract:]
 "Dr. Gray, of Glasgow," says the speaker, "was lately induced to make trial of this substance by the following theoretical views. Diabetes consists in the process of digestion stopping at the conversion of other organic principles into sugar, which cannot be oxidated in the lungs, and is therefore thrown off as excrementitious by the kidneys. But rennet out of the body converts sugar into lactic acid, and it may therefore do so within the body likewise. Should such conversion take place, however, the disease will be brought to an end, if Liebig be right in his opinion, that lactic acid is one of the principles of the organic world which can support respiration, by becoming oxidated in the lungs. Resting on these views, Dr. Gray tried rennet, in the case of a patient so much reduced by diabetes, of at least twelve months' standing, as to be unable to work. Dietetic treatment had been only of partial benefit. Medicines of various kinds had been of little use. The urine was copious, 1045 in density, and strongly saccharine. On the 30th of last July, a teaspoonful of rennet, prepared as for the dairy, was given thrice a day. In eight days the density of the urine was reduced to 1025, and it contained lactic acid, but only a trace of sugar. In twenty-five days the quantity was sixty-four ounces, the density 1022.5, and the sugar gone entirely. In six weeks the urine continued free of sugar; the man had gained weight considerably; his strength was such as to enable him to return to his employment; he thought himself in as good health as before his illness; and nevertheless he had been ten days on nearly his usual allowance of wheaten bread.

"Now I am far from meaning to say, nor does Dr. Gray say, that rennet is thus proved to be a remedy for diabetes by its apparent success in a single case. But it is surely the most feasible remedy that has been proposed for many a day;—so feasible, that I hope many will give it at once a fair trial, which is his object in allowing me to give this brief notice of it to you all. Should it prove as successful in other hands as in his, we shall owe another therapeutic discovery to therapeutic theory."

(F.) RELATING TO SKIN DISEASES.

ART. 40.—*On the Application of Gutta Percha in the Treatment of Diseases of the Skin.* By ROBT. J. GRAYES, M.D., F.R.S.

(*Dublin Quarterly Journal of Medical Science for June.*)

“When a wound or injury inflicted on any portion of the surface has exposed the structures naturally covered by the skin, immediate irritation is the consequence, and this never entirely ceases until nature has been able to provide some substitute for the abraded or otherwise destroyed integument. The manner in which the denuded surface is covered with a temporary protection, sufficient to guard it against the contact of the air and other external injurious agents, varies according to the circumstances of the case: in many instances blood coagulated on the wound adheres firmly and remains in contact with every point, until the reparative efforts have healed the parts and covered them again with a new skin. When such a process takes place favorably, this most simple of all dressings effects a cure without any external discharge or inflammation, and enables the parts to be reformed, or, as the late Professor Macartney termed it, remodelled by the first intention.

“Of late years surgeons have derived much advantage from the use of different imitations of this natural process, and have employed at first solutions of collodion, and finally gutta percha dissolved in chloroform, for this purpose. Reflecting upon the great superiority of this method over the others formerly used, it struck me forcibly that it was capable of a much more general extension, and that the chloroform solution of gutta percha might be usefully employed in the topical treatment of cutaneous affections. The more I thought on this subject, the more sanguine I became that this new agent would form a useful addition to the list of remedies employed in combating a class of diseases confessedly so obstinate and so difficult of cure. The result of repeated trials, I am happy to announce, has not disappointed my anticipations, and consequently I now feel myself called on to lay before the profession a statement of those cases in which this application has either effected a cure, or mainly contributed to the successful treatment of the complaint.

“When the saturated solution of gutta percha in chloroform is spread by means of a camel's-hair pencil over a portion of the skin, the solvent fluid rapidly evaporates, leaving a delicate and extremely thin pellicle of gutta percha firmly adhering to the part. The peculiar toughness of gutta percha prevents this pellicle from being brittle, and therefore it is much less liable than collodion to crack and fall off in small scales. On the forehead or face, where it is not affected by friction of the clothes, it remains firmly attached for five or six days, or even longer, but on other portions of the surface it is often rubbed off much sooner; over dry eruptions of the skin it lasts longer than over those which are moist, and over smooth and firm spots, of course, longer than over those covered with rough morbid scales, or loosely adhering crusts. Before the application of this solution, therefore,

the practitioner will do well to render the portions of the cutaneous disease to which he intends to apply it as free as possible from crusts or scales, by means of poultices, alkaline lotions, &c. When this precaution is taken, he will find that the artificial cuticle which he has applied with his brush will in certain cases act most sensibly on the subjacent disease, diminishing inflammation and its consequences, and powerfully contributing to the restoration of the healthy structure of the skin.

* * * * *

“The transparency of this artificial membrane enables us to watch the progress of the subjacent diseased skin, and its colourless nature prevents it from disfiguring the face when the eruption occupies that part. Its perfect cleanliness, too, is no small advantage, and affords a very agreeable contrast when compared with the usual ointments, &c.

“My observations confirm what reasoning on this subject would lead us to expect, that this application is more suited for dry, scaly, tubercular, and chronic diseases of the skin, than for acute affections attended with much oozing of fluid and comparatively active inflammation.

“Still, its good effects are by no means limited to chronic diseases of the skin, or to those of a scaly, dry nature, for, as will hereafter appear, I have seen it decidedly useful in the spreading form of impetigo. My experience of this remedy makes me very anxious to witness its application in the first stages of erysipelas, as analogy leads me to hope for good results in such cases.

“Of course the patient must aid the efforts of the physician, and must as far as possible abstain from everything which tends to rub off or injure the artificial cuticle, for its virtue ceases when its continuity is broken and the external air finds admission to any part of the diseased surface.

“Early in the month of November, 1851, I was called to visit Mrs. C., from ———. She was about 50 years old, full and plethoric; the mother of a large family, and, until the disease of which she then complained of commenced, generally healthy. About two years before, she observed small spots of impetigo on her limbs and body, which succeeded each other, some healing while fresh ones appeared. During summer she was nearly free from them, but last autumn they returned with greater virulence than ever, and have since increased both in size and numbers, some being larger than the hand, and attended with constant oozing of fluid, which imperfectly coagulates, forming loose and thin crusts. The itching at night is intolerable, and nearly deprives her altogether of sleep. I employed the usual general and topical treatment for a fortnight without alleviation of her sufferings, when luckily I thought of trying the saturated solution of gutta percha in chloroform, and had it carefully applied by Mr. Nicholls of Dawson Street, at first by way of trial, to one of the smaller spots, and on the following days to each of the larger patches of eruption in succession. The relief obtained was such that it appeared almost incredible both to the patient and her family. Her cure was accomplished in less than three weeks; for

dreading the sudden stopping of so great a discharge and so much cutaneous irritation, I proceeded cautiously, and towards the end of the cure, when she returned home, I directed an issue to be inserted in her arm, as a measure of precaution. She has continued well up to the present time, (11th April, 1852.)

"In this patient we were at first obliged to reapply the gutta percha every second day, as it was rapidly detached and broken up into large flakes by the discharge from the subjacent surface. Its healing influence, however, speedily diminished the diseased secretion, and then the artificial cuticle remained longer adherent, and it was not necessary so often to use the scissors for the purpose of cutting off the loose portions of gutta percha membrane previously to applying a fresh layer. I ought to have remarked that the camel's-hair brush should be plunged, the moment it has been used, into hot water, to prevent it from being consolidated by the coagulated gutta percha.

"This case caused a great sensation among my patient's friends and relatives, and many were the inquiries made relative to my method of cure. I must confess that my own astonishment at the result was not less than theirs.

"Since that time I have repeatedly used this application in *acne of the face*, in which disease each of the pimples should be covered with the solution, and the patient enjoined not to rub off the pellicle by washing; &c.

"In some this treatment alone causes a material and rapid diminution of this tormenting eruption, and by perseverance in this plan, there is every appearance in two of my patients that the tendency to throw out the pimples is gradually ceasing.

"Finally, in several cases of psoriasis I have applied this solution with great benefit. In this disease much care must be taken to prevent the application being rubbed off by the clothes, and no woollen stockings or rough garment of any sort should be allowed next the skin. I had the satisfaction of curing in a fortnight a chronic psoriasis of the back of the hands and arms in a lady, who had been under homœopathic treatment for six months without deriving the least advantage from the infinitesimal doses prescribed by the practitioner.

"My anticipation respecting the utility of an artificial cuticle applied over the parts affected by commencing erysipelas, has, I find, been verified, as appears from the following paragraph taken from Dr. Neligan's able 'Treatise on Diseases of the Skin:'

"Acting as an impermeable varnish, and probably producing some effect, also, by the compression it causes, collodion has been successfully employed by Spengler and Rapp, as a local application in erysipelas. The parts are thickly coated with it by means of a camel's-hair pencil, and it is renewed as often as may be required, in consequence of its cracking and peeling off when dry."

"When my friend Dr. Stokes heard of my success in other cases,

he resolved to try the gutta percha solution in smallpox, and it gives me great pleasure to say, the result of two trials is most encouraging, and leads us to hope that at length a means of preventing the formation of disfiguring scars on the face in that disease has been discovered.*

* * * * *

"In communicating these cases, Dr. Stokes observed, as worthy of notice, and probably connected with the beneficial result produced, that the most remarkable effect of the gutta percha was to keep the face constantly moist, and to prevent the formation of hard, irritating crusts. He also mentioned to me a singular illustration of the effects of total exclusion of air from the cutaneous surface, as a preventive of the eruption in smallpox. It was that of a man who, while in the Meath Hospital for a scrofulous enlargement of the knee-joint, was attacked with this disease; the knee had been previously tightly strapped with adhesive plaster, and on the disappearance of the eruption, it was seen, on removing the strapping, that not a single pustule had been developed on the parts which were thus covered.

* * * * *

"I shall conclude with observing that, in psoriasis and other chronic cutaneous complaints unattended with any constitutional derangement, it is of the greatest consequence to check the growth of each new spot. This the gutta percha does most effectually in psoriasis, and when applied daily to any recent points of irritation, it smothers, as it were, each nascent centre of future blotches."

ART. 41.—*On Vaccination as a means of Cure in Scabby Eruptions, (crûtes laiteuses.)* By M. SARTI.

(Bulletin de Thérapeutique, July.)

After a wide experience extending over upwards of eighteen years, M. Sarti arrives at the conclusion that vaccination exercises a powerful curative influence over these eruptions. He has preserved notes of 89 cases. Of these it appears that the eruption was promptly, completely, and definitely cured in 58, and promptly and permanently relieved in 25; and of the remaining 6, in which the measure seemed to fail, the vaccination itself succeeded imperfectly in 4, and the disease was particularly obstinate in all. M. Sarti further states that the beneficial effects of the vaccination were marked in the disappearance of glandular enlargements of various kinds, as well as of the cutaneous eruptions, and the marked improvement of the general health of the little patient; indeed, so far from delicacy and weakness being an objection to the operation, they are strong arguments in its favour.

* It is of great importance, and essential to the success of this treatment, to observe, that the gutta percha solution should not be applied to the face until the pustules are fully matured, or even begin to exhibit the first appearance of collapse, as indicated by the well-known central depression on the apex; applied then, the solution is of the greatest service; applied before maturation, it is mischievous.

PART II.—SURGERY.

(A.) OF GENERAL SURGERY.

1. *Of the Varieties and Consequences of Inflammation.*

ART. 42.—*On the Employment of Collodion, and of Collodion and Castor-Oil in the Treatment of Erysipelas*; by (1), DR. PIAUCHAUD, of Geneva; and (2), M. GUERSANT.

(1. *Archives Générales de Médecine.* 2. *Edinburgh Monthly Journal of Medical Sciences.*)

1. In twenty-two cases in which Dr. Piauchaud carried out the treatment of erysipelas by collodion, the effects were an immediate, or almost immediate, loss of redness, throbbing, tension, and heat. In a few seconds the skin changed into a yellowish glistening white, as if it had been varnished, and an agreeable sensation of cold resulted from the evaporation of the ether. Afterwards the coating of collodion gave rise to a feeling of constriction, like that of an overtight mask—a feeling, to a certain extent, disagreeable, but not amounting to actual pain.

In order to test the value of this mode of treatment the collodion was applied to half an erysipelatous face, the other half being left without any application, each half being, as nearly as possible, in the same condition. On the next day the varnished side had undergone a remarkable diminution in swelling and redness, and the sense of pain, throbbing, and heat had altogether disappeared; while the other side remained unchanged, or had changed for the worse. It was so also on the next day and on the next. In a word, the erysipelas was permanently arrested on the one side, and passed through its usual course on the other.

Dr. Piauchaud also furnishes the following numerical particulars. Out of the 22 cases, 15 were instances of simple erysipelas, the rest being complicated in some manner, or imperfectly treated, or treated with other applications at the same time. Of these 15, the face was affected in 11, the scalp in 1, the trunk in 3. In them all the mean duration was six days, or, in other words, not half the usual duration of the complaint, according to M. Chomel. Indeed, this was the actual duration of those cases in which the treatment by collodion was not carried out.

2. The following extract as to the effects of a combination of collodion and castor-oil in erysipelas, is copied from a recent number of the '*Edinburgh Monthly Journal of Medical Science.*']

“M. Guersant has recently employed with advantage, in a severe case of erysipelas, an application to the skin, consisting of collodion in combination with castor-oil. The formula was—collodion, 30 parts;

castor-oil, 2 parts, mix. This varnish was applied once on each of three successive days to the parts attacked by the exanthema, and caused the cessation of the burning pain, and the disappearance of the dark redness of the surface; the general symptoms seemed, at the same time, to be alleviated by some favorable influence, and the boy who was the subject of experiment became convalescent much sooner than had been expected.

"It is to M. Rubert Latour that the idea of mixing the collodion with castor-oil is due; but his formula is not the same as that employed by M. Guersant. To avoid the inconvenience of the splitting and scaling off of the collodion, and to prevent its exercising upon the inflamed parts a degree of pressure which some persons would find to be intolerable, M. Latour has proposed to add to the ordinary collodion a fifteenth part by weight of turpentine deprived of its volatile principle by evaporation, and five or six drops of castor-oil to every thirty grammes, (463 grs.) We have not seen this kind of collodion used; but as for that of M. Guersant, we are informed by himself that it forms a very soft covering, far superior in point of elasticity to ordinary collodion. It is besides, more easily detached, and a simple poultice suffices to remove it in pieces, without causing the slightest pain to the patient. The castor-oil is preferable to other oils, being more unctuous, and having less of drying quality."

ART. 43.—*On the Treatment of Erysipelas, by the Injection of Medicated Solutions into the Subcutaneous Cellular Tissue.* by Dr. BRAINARD, (U. S.) Professor of Surgery in Rush Medical College.

(*Philadelphia Journal of Medical Science for April.*)

In this particular mode of treatment, Dr. Brainard's intention is to destroy the animal poison or leven which he supposes to be the efficient cause of erysipelas.

The injection used for this purpose is a solution of 10 grains of Iodide of Potassium in half an ounce of water, and the instrument, a syringe with an extremely delicate and pointed nozzle. The fluid is diffused by proper manipulations after it is injected.

A case is then mentioned, from which, however, we are able to gather but little information; and two others are referred to as published, or about to be published, in the 'Transactions of the American Medical Association.'

Dr. Brainard also recommends the same mode of treatment in cases of snake bite or of poisonous inoculation, where the poison had been already absorbed, and could not be destroyed by cauterisation. His plan in such cases is to apply a ligature so as to cause œdema, and to inject when the œdema is sufficiently advanced.

In reading this examination, it occurred to us that this plan of treatment might prove of great value in cases of hydrophobia, and dissecting wounds. Instead of the Iodide of Potassium solution, however, we should be disposed to try *artificial gastric juice*,—this choice being determined by the fact that animal poisons are destroyed when taken into the stomach. In this procedure, indeed, the object would

be to convert the neighbourhood of the wound into a *digestive or stomachal space*, by means of a copious injection of solvent juice, and at the same time to fill the wound with pledgets of lint, soaked in the same. In hydrophobia it is impossible to be sanguine, and yet there are many facts which seem to show that the virus does not spread rapidly from the wound to the rest of the system; which facts hold out a kind of hope that the virus might be destroyed by local means. The difficulty has been in the want of means by which the virus might be hunted out effectually, without the complete destruction of the bitten part and a wide sweep of the neighbourhood. By the injection, however, this difficulty would be overcome, and at the same time the integrity of the bitten part would not necessarily be destroyed, as it is by the knife and escharotics. In the case of dissecting wounds there is more reason to hope if the treatment in question were had recourse to without a moment's delay.

ART. 44.—*On the Treatment of Erysipelas by the Muriated Tincture of Iron.* By W. H. RANKING, M.D., Cantab., Physician to the Norfolk and Norwich Hospital.

(*Proc. Med. and Surg. Journal for July 21.*)

[The following case, in which a method of treatment not commonly pursued proved eminently successful, was communicated to the meeting of the Suffolk Branch of the Provincial Medical and Surgical Association. It is as follows:]

"Charlotte Andrews, *æt.* 23, a fat strumous girl, was admitted into the Norfolk and Norwich Hospital under my care, in April, for engorged and suppurating cervical glands, which were treated by generous diet, cod-liver oil, free lancing, and subsequent dressing with the iodide of lead ointment, an application which I may state, in passing, appears to me to be more suitable to scrofulous ulcers than any other with which I am acquainted. Under this treatment her progress was all that could be desired, until the 26th of May, when my attention was called to an erysipelatous redness over the right breast. This quickly extended, and in spite of the assiduous endeavour on the part of our intelligent house-surgeon, to limit its boundaries by the nitrate of silver, it soon invaded the head and face, inducing those serious symptoms which are observed in these cases. As soon as the disease fully declared itself, no time was lost, as is my invariable custom, in sustaining the powers of the patient by wine, beef-tea, and ammonia, the local application being flour.

"On the 28th, the disease had continued to extend, and as the patient was losing strength the ammonia was replaced by quinine.

"On the 29th, the report is that the erysipelas had occupied the entire head and face, and was creeping down the back. The patient was delirious, with dry tongue and feeble pulse of 130.

"On the 30th she was still worse, the tongue was more dry and dark, and diarrhœa was added to the other unfavorable symptoms. Wine was given in increasing quantities, so that she took more than a bottle in the twenty-four hours.

"June 1st.—She was still more depressed; pulse 140, fluttering; the face livid, and she appeared to be fast sinking. At this time I determined to administer the muriated tincture of iron, as recommended by Mr. Bell, of Edinburgh, and did so, as will be seen, with the best results. The dose was forty minims in water, every three hours. In the evening, after three doses, the pulse was still 140, but had more resistance to the finger, and she was left for the night, with orders to continue the medicine and wine.

"On the 2d there was a most marvellous change for the better. The tongue, which the day before was dry and dark, was now moist and cleaner, the pulse had sunk to 120, and the patient was able to raise herself in bed. The face was desquamating, and her only complaint was urgent thirst, which was gratified with water *ad libitum*.

3d.—I continued the iron in doses of thirty-six drops." The improvement was still more manifest; the face had become more natural in appearance, and she was pronounced out of danger. From this time her recovery was uninterrupted.

"Knowing how difficult it is to establish a medical *fact*, I am prepared to find that some of my hearers may dispute the agency of the iron in this girl's recovery. On this point I would only say, that prior to her taking that medicine she lost ground hourly, in spite of the freest exhibition of wine, ammonia, and quinine; and that after three or four doses a perceptible advantage had been gained, which advantage was rendered indisputable on the next day by the improved condition of the pulse and tongue, and the rapid subsidence of the cutaneous engorgement.

"I take no credit to myself for this mode of treating erysipelas, but most willingly record my obligation to Mr. Bell, of Edinburgh, who published a paper on the subject in the 'Monthly Journal of Medical Sciences' for June, 1851. That gentleman's testimony as to the value of this treatment is most strong; he says that in every instance in his practice it has been successful. His brother, Dr. Charles Bell, is equally impressed in its favour; and he states that it not only removes the disease in a short time, but also renders the patient less susceptible of returns of the disease. In pursuing the chalybeate treatment of erysipelas, Mr. Bell regards it as important to bring the system rapidly under its influence, and acting on this conviction, I gave, in the case above related, even larger doses than Mr. Bell had sanctioned.

"Although the case I have related was an instance of idiopathic erysipelas, the treatment is said to be equally beneficial in the traumatic form, and in infantile erysipelas. Of the latter, Mr. Bell details some remarkably interesting cases."

ART. 45.—On Carbuncles and Boils, with especial reference to their prevalence as an Epidemic; by (1), Mr. HUNT; and (2), Mr. LUDLOW.

(1. *Lancet* for Aug. and Sept. 2. *Medical Times and Gazette* for Sept. and Oct.)

1. [Apart from its own special and very considerable importance, much interest attaches to this epidemic visitation, from the close relation which would seem to exist between it and PLAGUE. The

general typhoid disorder, and the frequent implication of the axilla, appear to justify this conjecture. If this be so, therefore, plague is not banished to foreign shores, but still sleeps in the midst of us, *in spite of quarantine.*

Mr. Hunt's papers in the 'Lancet' furnish a very valuable account of the nature and treatment of this furuncular epidemic, and we therefore borrow from them largely.]

"It is one advantage resulting from the Registration Act, that by recording the number of deaths occurring from any fatal epidemic within a given period, it furnishes evidence of the rise, progress, and decline of the visitation. It is now well known to the profession that a class of diseases has recently prevailed, to which the name of 'the furunculoid epidemic' has been given, consisting of carbuncles, boils, whitlows, pustules, and superficial collections of purulent matter. But if the readers of 'The Lancet' were asked how long the epidemic has existed, to what extent has it been fatal, and to what locality has it been confined, but few of them would be able to give a satisfactory reply to any one of these very important questions. A solution of one of them may be found by a diligent examination of the Registrar-General's reports, touching the number of deaths from carbuncle and phlegmon in the metropolitan districts during the last twelve years, and the geographical extent of the epidemic may be gathered from the casual notices of its existence which have recently appeared in the various medical periodicals.

"The inquiry cannot fail to be interesting in its results; and I propose in this paper, and those which may follow, to trace the history of the epidemic, to note its progressive fatality, and then to offer a few practical observations on its pathology and treatment; and it will be shown, that although this pestilence has occupied but little of public attention, it has been more extensively fatal than any one would have suspected; that it has existed for several years, increasing in intensity up to the present year, if not to the present month, and that, unlike other epidemics, which usually traverse a portion of the globe not contemporaneously but consecutively, this disease has existed at one and the same time, certainly in the four quarters of the globe, and probably in every country on the face of the earth.

"My own attention was first called to the disease about the commencement of the year 1849, when I had occasion to remark that chronic eruptions of the order *Pustulæ* had become unusually common, especially among a class of patients not frequently affected in this way,—namely, the well-fed; their eruptive diseases being generally confined to the orders *Vesiculæ*, *Squamæ*, and *Papulæ*. I had also observed that in a patient under treatment for lepra or psoriasis of long continuance, the scales would disappear, and a crop of pustules would spring up in their place. This is no very unusual thing at any time, but the frequency of the occurrence arrested my attention. The next thing I observed was, that the superficial whitlow became very common. In one patient not less than seven fingers, and in another five, became affected in succession with this disease. In the course of three months about twenty patients consulted me in my private

practice, with a collection of purulent matter immediately under the dermis, near the matrix of the nail, or at a short distance from it, in one, two, or more fingers of both hands, and in some instances occupying the palm. Shortly after this, boils and carbuncles were brought much more frequently under my notice than usual; some of the latter were of alarming character, though none of them fatal. These painful affections appeared to be very capricious in selecting their locality, scarcely any part of the body being passed over, excepting only the legs and feet. One patient, a middle-aged lady, had a carbuncle on the back of her neck, the inflammation extending around the throat up to the apex of the occipital bone, and down to the dorsal vertebræ. Another female had an immense furuncle on the os coccygis; a third on the right labium; and a fourth, a young lady aged 17, had the whole abdomen covered for several weeks together with a succession of boils and ecthymatous pustules. A gentleman had a carbuncle on the scalp of prodigious size, in the year 1851, and in the spring of 1852, very recently, another still larger occupying a different portion of the scalp; another patient had one in the thigh; a third in the axilla, which appears to be a very common locality; a fourth on the mastoid process; a fifth on the throat, near the larynx; and several on the buttock. A servant-girl having been under treatment for an eczematous eruption on the wrist, upon the disappearance of this disease, presented the fore-arm covered with furuncular abscesses. Several females presented themselves with pustules and boils on the forehead, ears, eyelids, sternum, mammæ, and indeed on almost every part of the body, the face not escaping. At present, however, I have not met with a single case of carbuncle or boil below the knee, although pustules have been observed on the legs, and boils are very frequently seen on the thighs.

"Although the seat of this epidemic is the skin and subcutaneous tissues, it has by no means the character of a purely local disease. The health has in most cases suffered more or less before the breaking out of the disease and during its progress; and in several cases in which it has persisted for some weeks, successive crops of boils or pustules appearing in different parts of the body, a restoration of the general health of the patient has appeared to be the signal for the final disappearance of the local affection. The impaired health which has accompanied the disease has been various in character and duration; but its prevailing type has been general and local debility, and a feeble, sluggish action of the heart and arteries. Many patients have complained of a slight degree of giddiness, a few of headache, and several have mentioned an indescribable sense of oppression at the præcordia, a general feeling of languor, and inaptitude for bodily or mental exertion, and an unusual degree of fatigue, sometimes amounting to faintness, from a very moderate amount of muscular effort. The pulse has generally been feeble and slow, thus denoting the cerebral symptoms to be indicative rather of deficient energy in the circulation than of plethoric congestion of the brain. A degree of hoarseness, such as accompanies typhus fever and hæmorrhagic atony, and other exhausting diseases, has occasionally accompanied the attack. The voice appears to take a higher pitch, and to have lost its

fulness and mellowness. This has chiefly been noticed in men. All these symptoms tend but to one conclusion—viz., that the furunculoid, like all other epidemics, is attended by a deficiency of power in the system. The worst case of carbuncle I have yet met with occurred in a lady, whose strength had been reduced by long anxiety, reverses, and misfortunes, and want of sufficient nourishment. The poor and ill-fed have been the most frequent, as well as the most severe sufferers; and a medical gentleman, who is largely engaged in practice among the higher classes, has recently assured me that he was not aware of the existence of any epidemic, and that he certainly had not observed a more than average number of carbuncles and boils among his own patients. Like all other epidemics (which usually spend their strength upon the asthenic portion of society), this affection does occasionally attack persons well fed, and apparently in the full tide of health and strength. And it is worthy of observation that medical men, who usually appear to be exempted, as if by a special providence, from many contagious influences, yet seem to have been frequently selected as the victims of this disease; and in one lamented instance, a carbuncle proved fatal to a practitioner in Dalston Terrace. I have not, however, been able to trace any proof of contagion in this epidemic. On the contrary, I can call to mind very few instances in which it has occurred simultaneously, or even consecutively, in a plurality of persons in the same household. In large schools, I believe, about twenty per cent. only have been attacked.

“With regard to the statistics of the disease, it is impossible to form any estimate of the number of persons attacked in proportion to the population; but among the patients treated at the Western Dispensary for Diseases of the Skin, I find that twenty-one per cent. have been more or less affected with the epidemic in some one or other of its various forms. Two per cent. were attacked with carbuncles, eight per cent. with boils, nine per cent. with pustules, and two per cent. with subcutaneous abscesses. The onychian form of the disease seems to have disappeared, and to have given place to those pustular tumours of the eyelids called styles.

“The geographical extent of the epidemic is one of its most extraordinary features. I have traced it to every part of the metropolis; to Oxford, Cambridge, Bath, Bristol, Manchester, and other cities and towns of England, to North and South Wales, to the Northern coast of Kent, to the Southern coast of Hampshire, and to the Isle of Wight. Reports have reached us of its prevalence in Ireland and in Scotland, in France and in Austria, in both the East and West Indies, in the city of Philadelphia, and at the Cape of Good Hope. Literary notices of the epidemic may be found scattered in nearly all the medical periodicals, both British and foreign; and what is most singular, it appears to have broken out in the four quarters of the globe at one and the same time, and to have been influenced in its progress, and decline by one universal cause.

“Although the furunculoid epidemic has probably proved the least fatal of all modern epidemics, evidence of its destructive character is not wanting. Carbuncle is unquestionably its most fatal form; and though it is a comparatively rare disease, yet, when it does occur, it is

generally severe, often perilous, and not unfrequently fatal. The average annual amount of deaths from this disease, in the course of the last twelve years, will, therefore, when compared with the deaths from this cause during the epidemic, enable us to form a tolerably accurate estimate of its origin, progress, and duration.

“Upon a most careful examination of the annual and weekly ‘Reports’ of the Registrar-General, as regards the deaths from carbuncle in the metropolitan districts, the following very remarkable results are obtained:—

“In the four years 1840, 41, 42, 43, the average	deaths from carbuncle were	3½ per annum.
”	1844, 45, 46, 47, they averaged	8 ”
”	1848, 49, 50, 51 ”	18 ”
In the last quarter of 1851, nine deaths occurring, they averaged		36 ”
In the first quarter of 1852, sixteen deaths occurring, they averaged		64 ”
In the second quarter of 1852, five deaths only occurring, they averaged		20 ”

“Making a trifling deduction for the increase of the population during the last twelve years, which has probably been nearly counter-balanced, during the epidemic visitation, by the rage for emigration, it appears from this table that the deaths from carbuncle have actually been *doubled* every four years from 1840 to 1851; and that during the last quarter of 1851, the average of that year was again doubled in the three months; and that on the following quarter—the first of 1852—it was again doubled on the last quarter of 1851; and that, whereas the average deaths from carbuncle in the metropolis, have amounted, in former years, to about five or six per annum, the actual number, during the last six winter months, was twenty-five, or about nine or ten times the usual number. It appears that the fatality commenced rather suddenly, so early as the year 1847, and continued, with little variation, for four years; for—

“In 1846 there were registered	3 deaths
” 1847	15 ”
” 1848	20 ”
” 1849	15 ”
” 1850	19 ”
” 1851	19 ”

“A very rapid increase occurred during the early part of this year. On the 10th of January, there were no less than four deaths from carbuncle, all the victims being males bordering upon seventy years of age. The circumstance of four deaths from carbuncle occurring in one day, is remarked upon by the Registrar-General as an unusual occurrence; and it is probable that no such event has happened in London since the last visitation of the plague.

“From these records, it would appear that the epidemic has existed in London for four years at the least, and that it arrived at its greatest severity in January, 1852. The next question is, have we seen the

worst of it? The following table will help us to a conjecture on this point:—

“Single months, 1852.

“In January there were registered 8 deaths.			
“ February	“	“	4
“ March	“	“	4
“ April	“	“	3
“ May	“	“	0
“ June	“	“	2

“If, therefore, the course of this disease is to be expected to follow that of other epidemics, it may be believed to be on the decline in the metropolis; but when we reflect that it has already existed four years or more, we shall not be disposed to arrive at any hasty conclusion, founded on the history of only as many months.

“The *pathology* of this epidemic appears to be involved in some degree of obscurity, but its whole history points to one striking peculiarity—viz., a *tendency to the formation and discharge of PURULENT MATTER*; this tendency being confined to the *SURFACE* of the body. And this is curiously confirmed by the fact, that, while the deaths from “abscess” appear to have diminished in number during the prevalence of the epidemic, that term being applied generally to lumbar, or other deep-seated collections of matter, the deaths from “phlegmon” appear to have more than trebled their usual number during the last few years—this term being employed to denote superficial inflammation generally, tending to suppuration.

“From Philadelphia, accounts have reached us of the great prevalence of superficial abscesses and whitlows, as well as carbuncles and boils. And as regards the pustule or small boil, another very remarkable circumstance should not be overlooked. The smallpox is a febrile disease, consisting of an eruption of pustules, and often terminating in very troublesome and unmanageable boils and superficial abscesses, as sequela of the disease. Now, it cannot be viewed as an indifferent question—Has the smallpox prevailed with any unusual degree of severity during the existence of the furunculoid epidemic? To this question the Reports of the Registrar-General return a satisfactory reply. During the last twelve years the average annual deaths from smallpox in the metropolitan districts are recorded as follows:—

	per annum.
“1840, 41, 42, 43, average	771
1844, 45, 46, 47 “	981
1848, 49, 50, 51 “	924
Last quarter of 1851, 339 deaths; rate	1356
First quarter of 1852, 338 deaths; rate	1552
Second quarter of 1852, 472 deaths; rate	1888

“From this table it appears that there had been no remarkable increase of smallpox until within the nine months terminating at Midsummer, 1852, during which period it steadily advanced until it doubled its average number of victims. Nor can it be doubted that

the number of cases occurring after vaccination has recently been very much on the increase. Vaccinated persons, previously exposed with impunity to variolous contagion, have recently taken the disease; and whatever be the cause, there evidently exists, among all classes of society, a most remarkable susceptibility to the variolous poison.

“Here then are two distinct epidemics running a race with each other, having only one feature in common—viz., a disposition to superficial pustulation. Is there any instruction to be gained by the study of this curious analogy? Does an epidemic tendency to suppuration predispose to the contagion of a specific disease? In the hospital at Vienna, Dr. Mauthner reports that cases of variola and eczema impetiginodes were often observed during last winter. The latter disease had several points of resemblance to variola. Vesicles were formed, filled with a turbid purulent fluid; these were developed into pustules, and finally desquamated. In several cases rigors occurred on the ninth day of the vesicles. Here is another link in the chain. The vesicles of eczema do not usually degenerate into pustules, nor are they followed by critical rigors; and there must have been some cause at work to bring a multitude of these cases together in one hospital at one time. Another remarkable circumstance is mentioned by Dr. Mauthner:—Where a marked predisposition to scrofula existed, the disease promoted its development; *but it freed the body from local scrofulous affections already existing.* In accordance with this, is the general experience as to the health of patients subsequently to an attack of the furuncular or anthracic form of the disease. It has almost invariably improved. There is no ‘wise saw’ more familiar than that ‘boils are healthy’—i. e., they have a healthy tendency; and it is certainly confirmed by the history of the present epidemic, which may be said to have arrested attention, not so much from its immediate morbid influence on the vital economy, as from the local disturbance created by the process of elimination. The improvement in the condition of the health of those patients in whom this process has terminated favorably, is not less remarkable.

“It is to be regretted that so little is known of the design and uses of the secretion of purulent matter. A general impression exists that its absorption is injurious to the economy, and that its discharge is eliminative and salutary. The opinion is also gaining ground, that under certain morbid conditions of the blood, a vicarious discharge of pus from the kidneys is one of the modes by which nature seeks relief. Dr. Golding Bird assures us, that ‘many pathologists, especially in Germany, have declared their belief in the frequent occurrence of this phenomenon, and cases have been recorded of Empyema disappearing contemporaneously with the discharge of purulent urine.’* We must, for the present, remain in ignorance of the precise condition of the blood in which the formation and discharge of purulent matter are useful to the system. But the history of this epidemic, taken in connection with the prevalence of smallpox and the pustular form of eczema, may possibly throw some important light upon future researches.

“The *treatment* of carbuncles, boils, whitlows, superficial abscesses,

* Urinary Deposits, p. 331.

and other forms of furunculoid epidemic, is generally so simple an affair, that it is scarcely discoursed upon, except in elementary works on surgery, and then the instructions are considered complete if directions have been given for a free discharge of the matter; and under ordinary circumstances, this is sufficient, so far as surgery is concerned. But the epidemic type introduces a new element into their pathological character, and this involves the necessity of well weighing the condition of the constitution under the epidemic influence, before deciding upon the course to be pursued, which, after all, can only be learned by observing the symptoms and complications of the disease in a large number of cases. For the most part, epidemics are wont to defy the resources of medicine and surgery; they hold their accustomed course with such fearful tenacity, as often to leave it doubtful whether the efforts which have been made to arrest their progress have not rather given it an increased impetus. But I am persuaded that these furunculoid diseases may be much modified, and their course materially checked, by the adoption of active and energetic measures. To this end both surgery and medicine may each contribute an important share.

“*Surgical Treatment.*—Carbuncles and boils differ from each other in more points than one. The seat of both is the cellular membrane, but the pathological structure is very different. A carbuncle is composed of cells, which, without communicating with each other, contain a thick, viscid, purulent matter, which escapes slowly from its capsules, even after they have been incised. A boil is simply an abscess, at once superficial and circumscribed. A carbuncle, to borrow a term from the modern school of ovarialogists, is a multilocular abscess located in the cells of the cellular membrane. It first appears as a rounded tumour, not so large as a split pea, less tender and less vividly red than the nucleus of a boil, sluggish and livid, yet daily increasing in circumference and in tenderness, until it becomes exceedingly painful and sometimes enormously extensive. After a few days, a yellow spot presents itself on its surface, soon followed by another. One bursts, and slowly discharges a viscid pus, in which a black speck is sometimes visible, denoting the death of a particle of fatty matter as the *fons et origo* of the whole disturbance. The patient is relieved, rejoices in escaping the surgeon's threatened incision, and gets a few hours' rest, but only a few. Another pustule appears on the surface of the tumour, and not the surface only, but others form below and on every side. The inflammation extends, a livid erysipelatous blush surrounds the tumour, and now, if the surgeon does not do his duty, the patient is not unlikely to become delirious, and to sink under the constitutional irritation set up by the local disease. Every one of these small abscesses must be opened, and for this purpose a free crucial incision is generally required, which should be long rather than deep, the matter being contained for the most part in superficial cells. On the following day, the carbuncle generally looks worse, though the patient complains less. An extensive and formidable slough of the cellular membrane and subjacent parts often occurs; and that surgeon will now be the most successful who is the best physician. The surgical treatment, however, is still important. Poultices of yeast or stale

beer grounds, or of linseed-meal moistened with very dilute chloric ether, are necessary to promote the separation of the slough, and to rouse the living structure to healthy action for its own defence. This once effected, the patient is safe, and his recovery rapid.

"A *furuncle* or true boil differs from a carbuncle from the very first. No boil ever becomes a carbuncle, whatever size it may attain. It differs generally in colour, the carbuncle presenting a more livid hue than the boil, and it always differs in shape. A boil is the rounded apex of a very obtuse cone. A carbuncle is a flattened hemisphere, or, strictly, the half of an ovate spheroid very much flattened at the poles. After a few days, fluctuation may be detected in the boil much more distinctly than in the carbuncle. If a carbuncle is not freely lanced it will sometimes go on increasing in size to an almost incredible extent. The boil may be neglected with less hazard, as it will burst and discharge itself at once. Both, however, should be lanced, as soon as it is evident that the suppurative process has commenced. Emollient poultices are useful both before and after the operation.

"*Whitlows*, when they are superficial and unconnected with disease of the matrix of the nail, neither require lancing nor poulticing. As a general rule, they are damaged by both. If the matter is discharged, more will be formed, and the poultice only relaxes the tissues which are already swollen and encroaching on the nail. A cold discutient lotion, very frequently applied, is by far the most useful mode of restoring the parts to their natural condition. Superficial abscesses, in other situations, are better opened. *Whitlows* occasionally require a leech or two.

"The *medical treatment* of the furunculoid epidemic must of course be conducted on general principles, but there are two indications, which may invariably be acted upon. Our measures should be eliminative and tonic: *eliminative*, because the very manifestations of the disease are eliminative, and we must follow the leadings of nature in all diseases; *tonic*, because all epidemics tend to reduce the vital powers and to lower the standard of vigorous health. They often find their victims weak, and as frequently leave them weaker. To invigorate the system therefore by tonics, and by a nourishing and somewhat stimulating diet, is the important point in the constitutional treatment."

2. [Some cases of severe and fatal carbuncular inflammation of the face and lips are also reported by Mr. Ludlow, as occurring at St. Bartholomew's Hospital, in September last, at which time carbuncles and boils were very prevalent among the out- and in-patients of that Institution.]

2. Of Tumours.

ART. 46.—*Cure of Nævus by Elastic Subcutaneous Strangulation.*
By Mr. STARTIN.

(*Medical Times and Gazette for July 3.*)

"This plan (says Mr. Startin,) employed in my public practice at the Hospital for Diseases of the Skin, for some time past, with very

general success, I have called 'elastic strangulation,' for want of a better term. It consists in environing the nævus, or tumour, with a ligature passed by means of a long round needle beneath the skin, so as to include the morbid parts in a triangular space, which shall extend a line or so beyond the boundaries of the nævus, care being taken, that both ends of the thread (made of strong boot-closer's twist) have their exit at that apex of the triangle which is most conveniently situated to allow an elastic band, half an inch wide, and two or three inches long, made of No. 16, vulcanised India rubber sheeting, to be fastened upon them, so as to permit the necessary tension to be made upon the band, and, through it, upon the subcutaneous thread surrounding the nævus.

[In this plan the subcutaneous ligature may be either tightened or not, before the attachment of its ends to the elastic band.]

3. Of Wounds.

ART. 47.—*Death from the Bite of a Snake in the Regent's Park Zoological Gardens.* By Dr. BURDER, House Surgeon to University College Hospital.

(*Medical Times and Gazette for Oct. 30.*)

Edward Loratio Gurling, aged 31, was brought to University College Hospital on the morning of Wednesday, Oct. 20, 1852. His occupation was that of a keeper at the Gardens of the Zoological Society in Regent's-park: and the part of the collection placed under his special charge was that contained in the reptile house. He had held this appointment for upwards of twelve months, and was fully conversant with his duties, and well aware of the caution required in their discharge.

Generally speaking, his habits appear to have been temperate, and his conduct rational, but he had occasionally of late been intoxicated. During the night previous to his admission he had been drinking freely, and on presenting himself at the gardens in the morning he was observed to be partially intoxicated.

About 8, a.m., while engaged in his duties at the reptile house, he commenced a series of rash familiarities with some of the venomous serpents. After removing an African cobra from its cage, and twirling it about his head, he replaced it without having received any injury, and took out an Indian cobra. This he also played with for some time with impunity, allowing it to crawl round his body beneath his waistcoat. Shortly afterwards, however, while he was holding the snake before his face, the creature made a dart at him, and inflicted a wound on the upper part of his nose. This occurred about 8.10, a.m.

For about twenty minutes after the receipt of the wound, there appear to have been no striking symptoms apart from his agitation and alarm at the occurrence, and during this time he was able to walk and to talk without difficulty. After twenty minutes, however, he began to stagger in walking, and ceased to speak intelligibly. At

the same time movements, apparently convulsive, of the mouth and of the limbs were observed. He made no special complaint of pain or other sensation. As soon as a vehicle could be procured, he was placed in it and brought to the hospital. During the transit he was observed to grow very rapidly worse. Up to the time of his admission no treatment had been adopted.

He was brought to the hospital at 8.45, a.m., and was seen almost immediately afterwards both by Dr. Burder and by his colleague, Mr. Gamgee. At this time he was unable to speak, and consciousness, as the sequel will show, was all but, possibly quite, abolished. He moaned, grasped his throat with some eagerness of action, tossed his head from side to side, and moved his arms and legs in an uneasy, restless manner, not apparently convulsive. When asked in a loud voice if he felt pain, he made no reply, nor gave any indication of intelligence beyond the action already noted, of placing the fingers on the throat, and as he had already made this movement spontaneously, there was no certain evidence that he heard or understood the question put to him. He was unable to support himself in a sitting posture. His face generally was slightly livid, his eyes fixed, his pupils rather large, acting sluggishly to light. The skin was of natural temperature and moisture; pulse 120, regular in rhythm, but unequal in force, most of the beats, however, being tolerably full and strong.

On the upper part of the nose were a number of small punctured wounds, from one or more of which a small quantity of blood had flowed. The eyelids of the right eye, especially the upper, were swollen and livid, the lividity extending to the right side of the nose. The eyelids of the left eye were not thus affected. There appeared to be no swelling of the tongue.

These observations were made rapidly, as the patient lay upon a couch in the casualty room. He was immediately transferred to the ward, undressed, and placed in bed. The interval that elapsed between his being first seen and his being put to bed, though certainly not exceeding five minutes, witnessed a material change in his symptoms. The first accurate observation of his respiration was made just prior to his being lifted into bed. It was then 20 per minute, very shallow, without stertor, and free from any sound indicating laryngeal or tracheal obstruction. By this time, the movements of the extremities had entirely ceased, the lividity of the face had very markedly increased, a free perspiration had occurred over the surface generally, the pulse continued tolerably good.

As it was now evident that the man was rapidly dying from failure of the respiratory function, preparations were made, without delay, for the employment of artificial respiration. Probably within a minute after the man was in bed, (namely, about ten minutes before nine,) the apparatus was in readiness. By this time the natural respiration had ceased, and, but for the continuance of the pulse the man might have been pronounced dead. The pulse at this moment, — (*i. e.*, after natural respiration had ceased, and before artificial respiration had been commenced,) — was at the rate of 32 per minute, remarkably

irregular both in rhythm and in force, some of the beats being strikingly full and bounding.

The bellows for artificial respiration were now brought into play, the nozzle of the instrument being introduced into the nostril, the pharynx closed by pressure upon the larynx, and the expulsion of the injected air being aided by firm rhythmical pressure upon the chest and abdomen.

Artificial respiration had been continued for exactly two minutes, when the pulse, being again counted, was found to number 70 per minute, and to be less irregular.

After a further interval, artificial respiration being suspended for a short time in order to make arrangements for the application of galvanism, the pulse fell to fifty. Artificial respiration being resumed, the pulse rose quickly to seventy.

A galvanic current passed from the back of the neck to the abdomen was productive of no visible benefit. Nevertheless, it was continued during the greater part of the time that artificial respiration was being employed.

With this latter means we persevered for a period of fifty minutes, with the exception of two or three very short intermissions. The pulse, during almost the whole of this time, continued of fair power and volume, maintaining, however, its characters of irregularity and inequality. On two occasions it was counted at 104, on another at 72. At no time was there any indication of a recovery of natural respiration; yet there was a muscular movement perceptible almost throughout, namely, a clonic contraction of the sterno-mastoid muscles very irregular in rhythm, palpable to the hand of the assistant who grasped the throat. It was felt till within about a quarter of an hour of the cessation of the pulse.

At forty minutes past 9, a.m., the pulse at the wrist ceased to be felt, and, the ear being applied to the chest, no sound was heard. All hope of recovery was now given up, and the use of remedies accordingly discontinued.

The skin, during the fifty minutes of artificial respiration, continued moist, and, for the most part, warm. Towards the close the temperature fell.

The lividity of the face continued during the whole time. No discoloration of other parts of the body was observed. There was no swelling of any part beyond the local swelling already described.

During the time that he was in the hospital there was no vomiting, nor any discharge, either from the bowels or from the bladder; nor was there any evidence of such having occurred before admission.

After death, the wounds upon the nose being more carefully examined, were found to present the following characters:—Immediately above the middle of the organ, on either side of its centre, was a horizontal row of small punctures; on the left side four, (the three next the centre being, however, mere scratches,) on the right side two, larger than those on the left. Half an inch above these was another row of punctures, of somewhat greater size,—on the left side two, on the right side one, that on the right side being again the

largest. A quarter of an inch higher still, on the right side of the nose, was the largest wound of all, transverse in direction (as were also such of the others as had any appreciable dimensions), measuring in diameter about a sixth of an inch, and in depth extending apparently through the substance of the true skin. From this wound a little blood was oozing; the others were closed by coagula.

At 11:30, a.m., a thin bloody fluid was still exuding from the highest wound, none from the others; there was no rigor mortis.

At fifteen minutes past noon a patch of pale-blue mottling was observed over the lower part of the chest on the left side, irregular in shape, about four inches in diameter; bloody fluid still oozed from the highest wound.

At two, p.m., this oozing continued. The discoloration of the skin had not extended on the fore part of the body. The back was not examined. Rigor mortis was now well marked in the hips and knees; scarcely at all in the upper extremities.

Post-mortem Examination.—The examination of the body was made thirty hours after death. Bloody fluid had continued to exude from the highest wound on the nose. From the mouth and nostrils a considerable quantity of frothy blood had issued. There was livid discoloration of the face, neck, and upper part of chest, also of the dependent parts generally, except at the points where the pressure of the body had fallen; here the skin was pale. There was no swelling of any part except the right eyelids, and these were less swollen than during life. Rigor mortis was strongly marked in the lower extremities; less so in the upper.

On dissecting the skin from the nose it was found that the three highest punctures on the right side had penetrated into the cellular tissue, which was infiltrated with dark blood. In the immediate neighbourhood of these wounds was discovered a small vein, but it could not be determined whether or not this vein had been punctured.

Brain and Spinal Cord.—In these organs scarcely anything abnormal was discovered. There was little, if any, unnatural congestion, either of the nervous centres themselves or of the meninges. The lateral ventricles of the brain were filled with transparent fluid. The spinal cord, in its lower part was softer than usual; in its upper part it was of natural consistence.

Lungs.—As the lungs lay *in situ* they were observed to be less collapsed than usual. Being removed, they were found to present a healthy appearance in the anterior portions, but in the posterior parts they were excessively gorged with blood, being almost black on section, and exuding copiously a blackish fluid mixed with some air. The air-tubes, large and small, throughout both lungs, were filled with a black frothy fluid, and the lining membrane was generally stained of a very dark blackish colour.

The Larynx and Trachea presented no unusual appearance, excepting dark-coloured staining of the trachea near its lower end. There was no sign of mechanical obstruction anywhere.

Heart.—This organ was healthy in structure throughout. The left cavities were contracted and empty; the right were filled with dark

fluid blood, amongst which was a small quantity of very loose coagulum. There were no clots in the great vessels.

Alimentary Canal.—There was no swelling about the tongue or fauces; the œsophagus was healthy; the stomach presented patches of pale colour, alternating with patches of red, the latter formed by the aggregation of minute red spots. The intestines were natural.

The Liver was of dark colour externally, and darker than natural on section; otherwise the organ was healthy.

The Spleen was enormously congested, of very dark colour externally, and on section almost black; the substance was very soft, and from it exuded abundantly very dark blood.

The Kidneys were of dark colour, both externally and internally, and the cut surfaces yielded, on pressure, dark-coloured blood; otherwise the organs were healthy.

During the dissection it was noticed that the body exhaled a peculiarly sour odour.*

Dr. Burder mentions also, that two hours and a half after the man's death, an experiment was performed upon a mouse, by inoculating it with the blood that flowed from the wound. No effect was produced upon the animal.

In concluding the history of this case, the author states, as a security for its trustworthiness, that his own notes were put upon paper immediately after the patient's death, and that these have been since confirmed, and in some points amplified, by a comparison with notes taken during the progress of the case by his colleague, Mr. Gamgee. The statements relative to the man's condition before he was brought to the hospital, rest upon the evidence of persons employed at the Gardens.

[In relation to this melancholy case, the only possible question (and this is mentioned not at all invidiously) is whether or not *stimulants* might have been used before or during the employment of artificial respiration. Stimulants appear to have saved life in several such cases, and they are the only remedies of which this can be said. There was an instance in point in a recent American journal, in which the patient survived by dint of drinking large quantities of rum; and several analogous instances have been given in our own papers. The most interesting of these is an autographical statement by the late Dr. M'Rae, who was bitten by a cobra at Chittagory, on the night of the 12th of May, 1809. The statement was forwarded to the 'Lancet' by Edward Hickman, esq., formerly of the Divisional Medical Staff, Barrackpore, Calcutta, who says that he can parallel it with the case of a Sipahce of his own battalion, when at Kissengunge, Bahar. Mr. Hickman also says that "the native medical staff, and all intelligent natives, are so well aware of the efficacy of ammonia in these bites, that they commence with it, or eau de luce, on the instant, not waiting for superior advice." Dr. M'Rae's account is as follows:]

"I directed a teaspoonful to be given me of the spiritus ammoniæ

* The reporter in the 'Lancet' says—"The blood was altogether dark, alkaline, fluid, and it emitted a peculiarly sour and sickly smell, quite different from the odour ordinarily known to pervade the dead-house."

compositus in a Madeira-glass of water. Finding the first dose agreed with me, in five minutes or less I took a second, and so on, a third fourth, fifth, and sixth, when the medicine began to have a favorable effect. The first benefit I was sensible of deriving from it was a relief from the sickness at the stomach; my breathing next became easier, my skin to recover its natural warmth, and the perspiration, with which I had been in a manner drenched, dried up by degrees. I still went on with the medicine, but at longer intervals, for every now and then I had a slight return of the oppression in breathing, which was immediately relieved on taking the alkali. I had thus gone on until I had taken thirteen spoonfuls, or a wine-glassful, of the medicine before I considered myself as out of danger; and in proportion as I recovered I became more and more sensible of the nauseous taste of the alkali, which latterly seemed to burn my throat as I swallowed it, though I could scarcely perceive the taste of the first dose I took, so totally or nearly gone was the nervous sensibility of my palate. In the course of three hours from my receiving the bite, I was out of danger."

4. Of *Hæmorrhage*.

ART. 48.—*On a New Styptic.* By M. PAGLIARI.

(*Gazette Médicale de Paris for May 29 and June 5.*)

This styptic forms the subject of a long communication to the Académie des Sciences by C. Sedillox. Its composition is as follows: eight ounces of balsam of benzoin, one pound of sulphate of alumina and potass, and ten pounds of common water, are boiled for six hours in a glazed earthen vessel, care being taken to add fresh quantities of boiling water, so as to supply the loss in evaporation, and to stir continually. At the end of this time the supernatant liquid is separated from the undissolved benzoin, which has lost its odour and inflammability, and filtered and preserved in glass bottles. The liquid thus obtained is limpid, and of the colour of champagne; its taste slightly styptic, and its odour pleasant and aromatic, and when evaporated it leaves a transparent deposit on the sides of the vessel.

The styptic properties of this preparation seem very remarkable. A single drop immediately coagulates a cupping-glassful of blood, and a larger quantity (equal proportions) converts the blood into a firm and resisting solid. Applied to a wound, the hæmorrhage ceases almost immediately, in consequence, as it would seem, of the formation of such clots upon the orifices of the bleeding vessels. The application also produces no irritation and inconvenience, nor does it interfere in any way with the process of cicatrisation.

The cases given are well authenticated, and the results such as to leave no doubt as to the valuable styptic properties of the preparation. There are cases of obstinate primary and secondary hæmorrhage after surgical operations; one from a severe cut in the finger; some from the extraction of a tooth. In these cases a piece of lint was soaked in the styptic and bound upon the wound.

5. Of Fractures and Dislocations.

ART. 49.—*Ununited Fractures Treated after Dieffenbach's Plan*; by (1), Mr. BOWMAN; (2), Mr. HILTON; (3), Mr. FERGUSSON; (4), Dr. GROGHEGAN; and (5), Mr. SQUARE.

(*The Lancet for Aug. 14.*)

[In our Fourteenth volume, p. 150, we have recorded an interesting case of ununited fracture, in which Mr. Stanley, of St. Bartholomew's, carried out the mode of treatment recommended by Dieffenbach, of exciting reparative action by driving ivory pegs into the fractured extremities of the bones. Now, we recur to the subject in order to place on record the additional evidence which has accumulated since this time.

1. Mr. Bowman's case, which has been already alluded to, occurred in King's College Hospital in July, 1851. The patient was a boy, 13 years of age. The false-joint had existed for ten years in the lower third of the right leg. Six months previously Mr. Bowman had endeavoured to procure osseous union by removing the extremities of the broken bones, but had failed in so doing. The operation and its effects are thus described:—]

“Mr. Bowman made an incision two thirds of an inch in length, over the upper fragment of the tibia, close to its extremity, and on its anterior and outer aspect. As soon as the bone was exposed, he applied to it the Archimedean drill, and penetrated into the cancellated structure of the bone. A small ivory peg, half an inch long, which exactly fitted the orifice made, was then introduced into it, and driven in with the hammer. Another incision was then made on a level with the former, over the inner aspect of the same upper fragment, and two others over the lower fragment, and pegs introduced in the same manner as had been done for the first. The fibula was left untouched. The lower fragment was so soft that a needle could be pushed into it, so that the pegs introduced into that part required no force.

“September 12th (two months after the operation).—The first peg came away to-day; it is considerably eroded, but whether the bony matter has been absorbed, or whether it has been softened and come away in the pus, is uncertain. The second peg was found loosened, but not quite fit to be taken out. Four days after this, Mr. Bowman removed the second peg and a small piece of sequestrum; the other two pegs remain in the bone, and the wounds are healed over. From the softness of the lower fragment in which the pegs are retained, it is to be supposed that the ivory may have been completely incorporated in the bone without having perhaps undergone any change.

“Nov. 24th (four months after the introduction of the pegs).—The union of the bones is very incomplete, Mr. Bowman advised the patient to go into the country with a single gutta percha splint and bandage fixing the ununited parts, the knee being flexed at right angles on the thigh; the boy was also desired to wear a wooden leg, so as to give the ankle perfect rest. The further information which

has been received tends to show that up to the time at which we write, union had not taken place."

2. [Mr. Hilton's case occurred in Guy's Hospital in February, 1852. The patient was a healthy stone-cutter, 65 years of age. The false joint was situated about the middle of the right leg. Seven weeks previously, and three months after the original accident, an attempt had been made to procure union by introducing steel needles between the fractured extremities, but without success. The following are the main particulars of the second operation:]

"Mr. Hilton made two apertures with a lancet in the skin, over the upper or projecting portion of the fracture, side by side, and about three quarters of an inch apart. A small gouge was then passed somewhat obliquely through both ends of the fractured bone and the intermediate soft structure; its passage through the outer shell and cancellated structure of the bone being distinctly recognised by their relative density. The two pegs, each an inch and a half long, were then passed into the holes made by the gouge and lancet, and driven home by the sharp blow of a hammer, so that the top or head of each peg was rather below the level of the surrounding skin.

A good deal of swelling and inflammation soon supervened about the seat of the operation. About four weeks from the introduction of the pegs, the patient after, as he states, making some little exertion to move himself in bed, lost about three or four ounces of venous blood by the side of one of the pegs. This peg Mr. Hilton endeavoured to remove with the forceps, but only succeeded in lifting it to about half an inch. The whole limb was now raised in bed, and cold lotions applied over the fracture. No more bleeding occurred, and in about a fortnight the peg came out spontaneously, or was pushed out by granulations growing in its track. Three weeks afterwards Mr. Hilton pulled out the second peg.

"On examining the leg there was no doubt that bony union was proceeding, but there was still some little yielding at the fracture, which was rendered evident on trying with some force to bend the bone at the seat of the fracture. The limb was then laid on a splint, and supported in position by side-splints, and a bandage so arranged as to leave the holes previously occupied by the pegs exposed. These apertures were covered by a bread poultice.

"On June 7th, four months after the introduction of the pegs, the splints were taken off, and consolidation found nearly complete. The patient left the hospital on the following day, with a bandage and pasteboard upon the leg, and was desired to continue to move about with his crutches for a week or two, and then to use his leg gradually, and with care.

"July 8th, five months after the operation, and one after leaving the hospital.—The patient can now walk with the aid of a stick; the bones are united, but the leg is weak, the muscles being much wasted from a protracted inaction of twenty-two months."

3. [Mr. Fergusson's case occurred in King's College Hospital, in a robust iron-worker, aged 30. The false-joint, which had existed thirteen months, had resulted from a comminuted fracture of the fore-arm. The operation was performed in July, 1852.]

"The patient was brought into the operating-theatre on the 10th of July, 1852, and narcotised with chloroform. Mr. Fergusson commenced by making a longitudinal incision behind the ulnar artery, about midway between the elbow and wrist. When by a careful dissection the bones were fully exposed, it was still somewhat difficult to distinguish the seat of the ununited fracture; but by causing the upper and lower portion of the ulna to move upon one another, it was found that the extremities of the fragments were situated in the wound just made, and surrounded by a fibrous capsule. Mr. Fergusson now passed his knife through this capsule, and proceeded to implant, with the hammer, between the ends of the fragments, a peg made of bone, about two inches long, and tapering to a fine point, having first made a hole for its reception with a common gimlet. Another hole was now made, about half an inch from the end of the upper fragment, with the same gimlet, and a second peg (ivory), of an almost cylindrical shape, introduced. A third peg (ivory) was placed in the same manner into the extremity of the lower fragment. The heads of the two latter pegs were cut off with the bone forceps, and the wound closed with two sutures.

"The man has since progressed extremely well, and the wound took on a very healthy action. About a fortnight after the operation one of the pegs became loose, and Mr. Fergusson extracted it; and one week afterwards it was found, on the bones being tried, that consolidation was already to a great degree established. It is very probable that in a short time satisfactory union will have taken place."

4. [Dr. Geoghegan's patient was a young man who had suffered for four years from false-joint in the lower-third of the fore-arm. Amesbury's plan of treatment by pressure and the seton had been tried previously. In carrying out Dieffenbach's plan—]

"Dr. Geoghegan cut down (by small incisions) on points corresponding to the middle of the fracture track of each bone. He then bored a hole, traversing obliquely the line of apposition of the fragments, and penetrating as nearly as possible the entire thickness of the latter, and introduced ivory pegs. A good deal of inflammation and suppuration resulted from these proceedings; and Dr. Geoghegan was obliged, from the intensity of these events, to remove the pegs on the ninth day after the operation. Considerable thickening about the fragments, and, as a consequence, great diminution of mobility ensued. This was, however, not the thickening of real callus, but merely albuminous effusion, which latter was gradually absorbed, and matters remained in their former state.

"When the parts had become quiescent, Dr. Geoghegan resolved to afford the patient a further chance. He practised again a small incision over the fracture track for each bone, introduced a narrow chisel upwards and downwards, and detached and broke up, as far as practicable, the ligamentous connection of the fragments. Dr. Geoghegan strongly scraped, at the same time, the opposite faces of the latter, so as to expose a *fresh osseous surface*, and open the Haversian canals. This operation, which was subsequently repeated, produced the second time much inflammation, but no *final* benefit."

5. [Mr. Square, of Plymouth, also tried Dieffenbach's plan in a case of fractured femur, placing pegs in the upper and lower fragments; but he failed, and was subsequently obliged to have recourse to amputation.]

ART. 50.—*On the value of the Seton as a Remedy in Ununited Fracture.*
By DR. VALENTINE MOTT, (U. S.)

(*Transactions of the New York Academy of Medicine, and British and Foreign Medical-Chirurgical Review for July.*)

Having in preparation a critical examination of the cases hitherto published, Dr. Mott furnishes us in the present paper with an account of the cases in which he has himself employed it; and this, as will be seen, with some encouraging results. Three of these cases (fracture of the humerus, tibia, and femur,) in which it was employed with success, have been already published. The *fourth* case was an example of fracture of the tibia, occurring in a man *æt.* 35. After many months' trial of various means, the suture was resolved on. As it was found impossible to penetrate the ligamentous connection of the fragments by means of a stilette, a common gimlet was used, and a skein of silk then passed through by means of an eye-probe. At the end of six weeks the seton was commenced to be removed thread by thread, and consolidation was found complete two months and a half after its passage.—The *fifth* case was an ununited fracture of the middle of the *os brachii*, of eight months' standing, in a boy aged 12,—the fragments being conical, and separated from each other by about half an inch. Two setons were passed at intervals, and respectively maintained for several months, without any benefit resulting. The ends of the bone were now sawed off, and a silver wire passed through each, twisted, and brought out exactly through a canula. The wire cut out from one of the bones in a few days, and the other was soon after removed. No great inflammation followed, and in a few weeks consolidation was complete. This case occurred in 1826, and is regarded by Dr. Mott as the first in which the ends of the bone have been brought into contact by the *wire suture*. Since then it has been repeatedly employed with success by the New York surgeons. It was thus employed several years prior to its adoption by Flaubert of Rouen, to whom Malgaigne attributes its origin.—The *sixth* case is precisely analogous to the last, an ununited fracture of the humerus, with widely separated fragments, being excised and joined by means of iron wire, which came away in two or three weeks, union being complete in between two and three months.

The *seventh* case was an ununited fracture of the femur at its upper end, in a man, *æt.* 53. Owing to the lower fragment being so firmly lodged behind the upper, considerable difficulty was found in lodging the seton between the fragment, and a large spike gimlet had to be employed to form a passage for the probe. Much inflammation, suppuration, and hectic fever followed, exhausting the patient's powers—so much that, at times, Dr. Mott was on the point of withdrawing the seton altogether. He succeeded in supporting the

patient's strength, and complete consolidation was effected in three months. A year after the occurrence of the first accident, the patient refractured the thigh at the newly-united part, but at the end of six weeks the bone was found firmly reunited, the ordinary amount of shortening only resulting.—The *eighth* case, a man of athletic form, set. 44, presented an ununited oblique fracture of the femur at a little above its middle. The close approximation of the fragments required the gimlet to be used. Much inflammation and suppuration followed, but consolidation was complete eight weeks after the introduction of the seton.—Dr. Mott regards the *ninth* case as unique, it being an example of *intra-uterine* non-union. The child, aged four months, was in excellent health and well formed. It was brought on account of a supposed dislocation of the foot; but on examination this was found to be normal, while an ununited fracture of the tibia and fibula existed about two inches above the ankle-joint. No pain was caused on motion, and the mother stated that the parts were just in the same state when the child was born. After in vain trying adjustment, movements of the ends of the bone, blistering, and galvano-puncture, a seton was passed with little pain, and gave rise to little inflammation or suppuration. In four weeks the union was firm, and some of the threads removed. Now, however, without obvious cause, violent inflammation seized the leg, the seton had to be removed, and the bones regained all their mobility. The parent refused a reapplication. But in a note to this communication, written in May, 1851, Dr. Mott states that three weeks since (the child then being 11 years of age) he had sawn off the ends of the bones, and connected them with a silver wire, and that thus far the case had done well.

Dr. Mott believes that the seton will usually be only found to succeed when the bones are in actual contact, or very nearly so; and that when they are not so, no operation promises better than that of resection of the fragments and their union by means of wire.

ART. 51.—*Spontaneous Fracture.* By DR. PARKER, Professor of Surgery in the College of Physicians and Surgeons of New York. (Reported by Dr. STEPHEN SMITH.)

(*New York Journal of Medicine for Oct.*)

[In this paper Dr. Parker, (through Dr. Smith,) gives six original cases of fracture arising from very trivial causes, and mentions some of the more remarkable of those already on record. His remarks agree with received views on the pathology of these accidents. We select two cases; the first occurring in Dr. Parker's practice, the second in that of Dr. F. Mettauer, of Virginia.]

1. "Mr. C—, aged 38 years, apothecary by occupation, fractured the right humerus in attempting to extract a tooth. Patient states that for more than a year he has suffered more or less pain at the seat of fracture, that the bone has seemed to him weak at this point; and he has been in the habit of avoiding using it when any effort was required, for fear it might break. During this time the bone has been

much enlarged in this place, and he has taken pretty constantly iodide of potass. for the relief of nocturnal pains in his head and limbs. He has nodes on his head, and these, with the enlargement of the humerus at the point of fracture, and the peculiar pains, mark it as a genuine case of tertiary syphilis. The bone united readily, but still remains very weak and quite useless. Much less than the ordinary amount of force was used in extracting the tooth."

2. "Alexander Mc—, a native of Scotland, about 70 years of age, rather below the common stature, of ruddy complexion, neither lean nor corpulent, of a sprightly, though irritable and pugnacious, disposition, had always enjoyed excellent health, an inhabitant of Petersburg, Virginia, for twenty-five years, was so remarkable for his great liability to fracture his bones, that if he was seen a quarter of a mile from his dwelling, it was very common to hear some one say, "There goes old Ellick; I'll engage he will break some of his bones before he returns." He assured me that it always appeared to him from early infancy, that his bones were more easily broken than any other person's, and that he believed he could break the bones of the forearm any time by pressing them between his thumb and forefinger—that he had several times fractured the ulna, radius, os humeri, clavicles, in giving blows. None of his bones seem exempt from this extraordinary brittleness; for since my residence in P., I know of ten or twelve fractures of different bones. I think it probable more may have occurred during the same period; for, latterly, the accident having become very frequent, his domestics managed his case, having from their experience become expert bonesetters. The tibia, fibula, os femoris, have been broken several times from a sudden twist of the body, and from efforts to save himself from falls. His thigh bones have been broken when attempting to get on horseback. His ribs have also been frequently fractured from slight causes. His speedy recovery astonished all who were acquainted with his case; for seldom, in any instance, has he been confined more than three weeks.

6. *Of Diseases in Bones and Joints.*

ART. 52.—*On Suppuration in Bones.* By HENRY LEE, Esq., F.R.C.S., Surgeon to the Lock Hospital, Assistant-Surgeon to King's College Hospital, &c.

(*London Journal of Medicine for Sept.*)

[This paper is a continuation of that which will be found at p. 95 of our last volume. In it the connection between purulent infiltration of bone and the secondary affections resulting from it, is explained by means of the free connection existing between the general cells of bony tissue and the venous system, and by the results obtained by Mr. Lee and others in certain experiments upon the influence of pus, fluidified fibrin, and putrid matters upon the coagulability of blood; which results are, that pus produces an immediate and firm coagulum when added to living blood, fluidified fibrin a looser coagulum which soon breaks up, and putrid matters a putrid state, by which coagula-

tion is altogether prevented.* Mr. Lee also takes occasion to introduce a long parenthesis in reference to these particular reactions, for which we have no space.]

“When suppuration takes place in bone, and the fluid is neither limited by a cyst, nor by condensed bony matter, it will escape into the surrounding cancellous structure. Any diseased secretions may in a similar way infiltrate a large portion of the interior of a bone, and may there produce much local and constitutional derangement. Unless relief be afforded by artificial means, the morbid matter has no means of escape, and can be removed only by being received into the circulation, or by the lengthened process of ulceration or necrosis.

“The free communication which exists between different parts of the cancellous structure of a bone is illustrated by a very simple experiment. If a small hole be bored in the sides of an adult bone, and water be injected, it will, without difficulty, permeate the whole of its interior; or, if the experiment be performed upon the bone of a younger animal (up to the time at which it attains its full development), the whole of the shaft will be injected, but none of the injection will penetrate to the epiphysis. In like manner diseased fluids, when they escape into the cancellous structure of bone, beyond the limit prescribed by the adhesive inflammation, are confined only by the dense osseous parietes, or by the junction of the epiphysis with the shaft.

“The line of separation, formed by the junction of the epiphysis with the shaft of the bone, is of much importance with regard to operations involving the extremities of the long bones in young patients. Up to the age of seventeen, and perhaps later, the epiphysis may be separated from a long bone without injuring its structure. In such cases, however much the epiphyses of bones may be injured, (as, for instance, in the excision of joints,) there is no probability that purulent or other infiltration will extend to the body of the bone, provided that has not itself been involved in the operation; or, on the other hand, if the shaft of the bone be the original seat of disease, that any morbid action will extend from it to the epiphysis. That diseased actions in bone are generally communicated by infiltration of the cancellous structure, and that such actions cease when they cannot thus be transmitted, is sometimes illustrated in the scrofulous affections of the bones of the fingers in children. The whole of the shaft of a bone may in such cases perish, leaving the articular extremities unaffected; recovery may then take place with a shortened finger, but without any interference with the natural motions of the joints.

“The experiment of injecting the interior of a bone will not only show that a very free communication exists between the different parts of its cancellous structure, but also that the injected fluid may be made to pass very readily from the cancelli into the nutrient vessels of the bone, and thence into the general circulation. If the experiment be performed upon a bone which has just attained its full development, the injection will pass freely from the nutrient vessels of the shaft, or of the epiphysis, according to the situation in which the opening into the bone has been made.

“It is easy, therefore, to understand, that disease may readily be propagated, not only from one part of a bone to another, but also from

the interior of a bone to different parts of the vascular system. This is doubtless the explanation of the very large proportion of cases, in which purulent infiltration of bone precedes secondary abscesses. In such instances, the course of the morbid action may be traced through the vessels of the bone into those of the general circulation. After amputation of a limb, terminating in phlebitis, for instance, it will sometimes happen that the divided extremities of the veins will show no signs of having participated in the disease, nor will any signs of inflammation be seen for several inches from the surface of the stump. But the first appearances of inflammation will appear in those veins, which are traversed by the blood derived from the nutrient vessels of the divided bone."

"When a portion of the cancellous structure of a bone has been injured, the blood in the Haversian canals of the injured part becomes necessarily stagnant between the injury and the next communicating branches. These stagnant portions of blood usually become coagulated and gradually absorbed. If the wound in the bone should suppurate, they at first serve the very important purpose of closing the vessels against the secretions of the part: an office which is subsequently much more permanently performed by the process of adhesive inflammation. It will occasionally happen here, as in the larger veins of the body, that the contents of the injured blood-vessels will become mixed to a greater or less extent with the secretions with which they are in contact. This may arise from some accidental mechanical cause, or from some inherent defect in the coagulating power of the blood.

"The admixture of diseased secretions will determine the coagulation of those portions of the blood with which it comes in contact, and thus the coagula will extend farther along the vessels than they would have done, had the blood at first firmly sealed the divided extremities of the veins. Uncontaminated blood will remain for a long time in the living body, either in its solid or fluid state, without undergoing much alteration; but this is not the case when the blood has become mixed with vitiated fluids. Farther changes will then readily take place in it; and we may judge of what takes place in the minute vessels of bone, by that which can be better observed in the larger veins of the body.

"There appears no doubt, from evidence derived from direct experiment, that a coagulum formed of vitiated blood may, and often does, in healthy states of the constitution, become gradually and entirely absorbed and eliminated from the system by the intestinal and hepatic secretions; but at other times, the vitiated and perhaps loosely-formed coagulum becomes softened down and poured into the adjacent veins. It here determines one of the three following physical results:

"1. The dissolved matter of the first formed coagulum mixing with fresh portions of blood may lead to the formation of fresh coagula. These may retain for a time the vitiated fluid; and, adhering at intervals to the sides of the vessels in which they are contained, they may prevent any of the foreign matter from reaching the general

circulation. Within a short period, however, the centre of the newly-formed coagula will become softened and gradually deprived of its colouring matter. The process of softening will proceed from the centre towards the circumference of each portion, until nearly the whole is converted into a white fluid resembling pus. Should there be an opening in the bone, this may escape externally; but otherwise, increasing in quantity by the secretions of the surrounding parts, it is forced forward in the course of the circulation to contaminate and mix with fresh portions of blood, which, in their turn, first become coagulated, and then softened down, and converted into the same purulent looking fluid. If an opening be made in a bone in which this process is going on, not only the cancellous structure, but the Haversian canals will appear filled with pus. It occasionally happens under these circumstances, that on making an opening into a bone, a distinct little jet of purulent looking fluid may be seen to escape from one of the canals of the nutrient vessels. In such a case, the cavities of the vessels must of course be accurately closed by firmly adhering coagula in the surrounding parts.

“The effects of purulent contamination of the blood usually extend in the course of the circulation.

“*Case.*—A man, twenty-six years of age, had a blow upon the head which fractured his skull, causing at the same time a scalp wound, which left a portion of the bone denuded. Eighteen days afterwards, he complained of a pain in the head, accompanied by nausea. To this succeeded what he termed ‘soreness of the stomach,’ which was soon followed by drowsiness and insensibility. He then became paralysed, and a good deal of irregular muscular twitching was observed in different parts of his body. He died a week after the commencement of the above symptoms. Yellow matter was found in the diploë of the parietal bone in the neighbourhood of the fracture, and purulent looking fluid, mixed with flakes of fibrin or lymph, occupied the *posterior half only* of the longitudinal sinus.

“It sometimes, however, happens that the effects of the disease extend in a course opposite to that of the circulation. In these instances, it is probable that the whole mass of the blood has become, to a certain extent, contaminated, those portions which are kept at rest, being the most liable to become first coagulated and then softened down. This is not unfrequently observed in cases of infection of the blood after childbirth. The blood in the common iliac vein will become coagulated in consequence of some diseased fluid poured into it from the uterus. This will cause the blood in the femoral and saphena veins to stagnate. Portions of the contaminated and stagnant blood in these, and in the vessels which supply them, will then become coagulated and undergo subsequent changes, involving the coats of the veins and neighbouring parts. Thus the disease will appear to have extended downwards, in a course contrary to that of the circulation. In the same way we must explain the curious fact, that after amputation of one leg or thigh, an abscess will occasionally form in one of the veins of the opposite limb. In such cases, *post-mortem* examinations sometimes show that the coagulation of the blood has extended from the amputated limb to the vena cava. An

obstruction there would of course act equally upon both sides of the body. It is a remarkable fact in these cases, that the coagulum will never extend beyond the opening of the hepatic veins; the double current from the portal system and from the veins opening into the inferior cava being sufficient to carry forward any viscid contents of the vessel.

"2. When the blood has become infected, instead of coagulating it may separate into its different elements. In this case the fibrin is left unmixed with either the serum or the colouring matter of the blood. This process differs from that of coagulation in this, among other important particulars, namely, that whereas a coagulum formed of all the parts of the blood fills the vessel which contains it, the separation of the blood into its different parts leaves the fibrin alone in the vessel, and allows the more fluid parts to pass on into the general circulation. The consequence of this is that the vessels in which such an action has taken place still remain pervious. The blood can still pass between the fibrinous deposit and the walls of the vein in sufficient quantity to carry on, although imperfectly, the natural circulation of the part; such a condition, unlike that of coagulation of the blood, offers no security against the passage of any diseased secretions along the vessels. This tendency to the separation of the blood into its different parts was strongly marked in the blood which has been detained in the saphena vein in the first case above related. It would appear to be an action which not very unfrequently takes place in the body, although necessarily difficult to illustrate with regard to the smaller veins. I have lately, however, had an opportunity of observing this change in the capillaries of the liver. From each small tube a delicate thread of fibrin could be drawn, leaving some of the fluid parts of the blood in the vessels, which were stained of a darker colour than natural.

"A case lately published in the 'Gazette Médicale de Paris,' affords a very good example of this separation of the fibrin from the other elements of blood. The case was that of a soldier, who died in St. Michael's Hospital, having suffered for a long period with symptoms of disease of the chest. Four months before his admission into the hospital, without any apparent cause, and in a single day, the eyelids and the cheeks became considerably swollen. The lower extremities and the forearms became at the same time œdematous. Upon a post-mortem examination, the vessels of the left lung were found to contain fibrinous concretions, having the form of ramified cylinders, which extended through the pulmonary artery into the right ventricle of the heart. These concretions were white, or of a chestnut colour, solid, and resisting. They adhered but very slightly here and there to the lining membrane of the vessels, and were in some parts of the pulmonary artery, and of its larger branches, surrounded by a layer of semi-fluid black blood.

"A similar condition has been observed with regard to the vessels of the brain; the longitudinal sinus has been observed to contain a firm yellow fibrinous mass, extending on the one hand in an arborescent form to the vessels of the pia mater, and on the other to the jugular veins.

"In such instances the sudden increase of the symptoms may mark with tolerable certainty the period at which the greater part of the fibrin is deposited, but this would appear to take place gradually in the majority of instances; and it is probable, as in the case of the soldier above mentioned, that it may exist for a long period, during which the circulation may be carried on sufficiently for the purposes of life. Upon a post-mortem inspection, the firm decolorised fibrin may at once be distinguished from the blood which has coagulated around it after death.

"3. The contaminated blood, instead of coagulating, or of separating into its different elements, may decompose. The whole of the constituents of the blood are then together involved in the changes which take place. The experiments above related show that the same impediments will not, under such circumstances, be offered to the passage of morbid matter into the circulation as when the blood firmly coagulates in the veins. An interval, however, even in the most strongly-marked cases usually elapses between the development of the infecting cause and the manifestation of constitutional symptoms. This is especially the case where diseased secretions enter the circulation through the nutrient vessels of bone. The morbid matter is detained for a certain time, during which the process of decomposition is established. The first infected portions of blood, together with the morbid matters which they contain, then pass on to infect the blood in adjacent vessels. The dissolved and putrifying fibrin from these will proceed further towards the centre of the circulation; in its course it will loosely coagulate fresh portions of blood, and then determine their decomposition. Each fresh portion of blood that is infected will add to the quantity of putrid dissolved fibrin in the vessels, and thus the disease will propagate itself, quite independent of the original source whence the morbid matter was derived. Each portion of blood which it attacked loses its vitality, passes into a state of decomposition, and becomes itself the means of infecting other portions. The contaminated blood may then be found in the vessels in every stage of decomposition, or it may have passed out of the vessels, having stained them, during its decomposition, of a deep livid colour. Long tracks of deep purple veins will occasionally be found, some being blocked up with the viscid blood in various stages of decomposition, and some having discharged their contents, and being comparatively empty.

"*Case.*—A man of rather intemperate habits, received a kick from a horse on the right leg, on the 15th of October, 1851. The right tibia and fibula were fractured, and the fracture communicated with a wound in the skin. He was purged, and kept upon low diet. On the 22d, some redness was observed around the wound, and the cellular tissue in the neighbourhood felt boggy. On the 1st of November he vomited after taking food, and on the following days he had several attacks of shivering. On the 4th, his complexion was yellow; he experienced no pain. Five days after this he died.

"No union had taken place between the fractured extremities of the tibia, and the parts immediately around the broken portions of the fibula were in a sloughing condition. The superficial and deep veins of the leg and thigh were greatly distended with dark thick blood, but

contained no coagula. The iliac veins contained small soft and dark coagula, but were otherwise healthy. In the middle of the right lung were two patches of secondary inflammation, and the right lobe of the liver contained several secondary abscesses, surrounded by firm and dark texture.

"The examination of the following case, conducted by Dr. J. W. Ogle, I had the opportunity of witnessing through the kindness of Dr. Wilson, of St. George's Hospital. A married woman, twenty-three years of age, miscarried, during the sixth month of her pregnancy, on the 4th of June, 1851. A few days afterwards she was attacked with intense pain in the abdomen, and two or three days later with pain in the calf of the left leg. The pain in the leg was accompanied by some swelling, which afterwards extended up to the thigh. She died on the 11th of July.

"A small putrid abscess occupied the course of one of the branches of the left hypogastric vein, at a short distance from the neck of the uterus. The iliac and the femoral veins of the same side were filled with blood in every stage of decomposition. The spermatic vein of the same side was stained of a dark purple colour, but its canal was pervious and contained no coagula.

"When the blood in one of the larger veins of the body decomposes, as in the preceding case, the period at which severe constitutional symptoms follow is comparatively short. Analogous affections originating in the minute vessels of bone usually require a longer period for their development. This is illustrated in the following cases.

"H. B—, æt. 19, sustained a fracture of the fibula. Three months after the accident, and three weeks before his death, he had an attack of diffuse cellular inflammation in the leg, which terminated in suppuration of the knee-joint. Upon examining the limb, the tibia in the neighbourhood of the fracture was exposed, and its structure was soft and of a black colour.

"J. C—, æt. 45, had an extensive scalp-wound. Nineteen days afterwards he experienced a rigor, and shortly became paralysed on one side. A portion of the skull, which was exposed, presented a dark green appearance, and when removed with the trephine, was of a putrid odour. The longitudinal sinus in this case contained contaminated blood, and there were secondary abscesses in the left lung.

"In some cases, where the most severe constitutional symptoms have followed injuries of bones, the original lesion has appeared of no very great importance, and the surface of bone exposed has been of very limited extent. In the following instance, the original injury was not regarded with any apprehension, yet it proved speedily fatal after the appearance of the symptoms of secondary inflammation.

"E. P—, æt. 50, had a lacerated wound of the foot, which detached a small portion of the base of the fifth metatarsal bone. This bone was also simply fractured towards its centre. After having for some time progressed without any unfavorable symptoms, pain in the chest, a rapid pulse, depression, with delirium, suddenly made their appearance, and were found, on a *post-mortem* examination, to have arisen

from inflammation of the right pleura, and the formation of secondary abscesses in the right lung. The amount of contaminated blood contained in the injured bone must in such instances be very small; and there can be little doubt that recovery would take place much oftener than it does, did not the disease propagate itself in the blood. When this takes place, it is usually indicated by one of the three classes of physical changes above described. The different natural processes which they illustrate may, however, take place in various degrees in the same case; and the condition of the blood upon *post-mortem* inspection will, in different parts of the vascular system, present corresponding varieties.

ART. 53.—*On the Pathology and Treatment of some obscure Cases of long-continued Pain in Bone.* By HENRY LEE, Esq., Surgeon to the Lock Hospital, &c.

(*London Journal of Medicine for Oct. 5.*)

[The object of this paper is to show that long-continued pain in bone may depend, among others, upon the following local causes:—the formation of pus within the bone, the deposition of solid material arising from the poisons of mercury or syphilis, the collection of tubercular matter, and the presence of necrosed cancellous structures, and to suggest the operation of trepanning as a remedy. In illustration of this object, the following cases are given; which cases, indeed, are in continuation of those recorded in our last volume, p. 95.]

“*Case III.*—A married woman, of a light complexion, and 24 years of age, was admitted an out-patient at King’s College Hospital, in the year 1849. The left knee-joint was at that time enlarged and painful, a puffy elastic swelling presented itself on the outer side of the joint, affording somewhat the appearance of a dislocation of the patella: very little fluctuation could be detected within the synovial membrane. The whole of the surrounding parts were painful, but the pain appeared to be of a very different character, and much more severe when the weight of the body rested upon the affected limb, or when the knee-joint was bent. The principal suffering was, however, experienced at night, and especially after she had become warm in bed. The deep-seated ‘pain in the bone’ would then entirely prevent her from sleeping. This condition had lasted, in a greater or less degree, for a year before she applied to King’s College Hospital. Three years previous to this she had been treated for syphilis, and had taken mercury several times.

“The joint was directed to be kept at rest, and three or four grains of the iodide of potassium were given three times a day. Under this treatment the swelling soon subsided, and the pain was much relieved. The joint could now be freely examined, and it became evident that the head of the tibia was the principal seat of the disease. Being relieved of her symptoms, the patient now discontinued her attendance, but remained free from pain for a short time only, when she again applied at the hospital: a repetition of the former treatment was again followed by complete relief. As soon as she discontinued

her medicine, however, the symptoms returned. In this way she continued under treatment for three years, and at one time persevered with the iodide of potassium for six months without any material intermission. As long as she took the medicine she was easy, but upon discontinuing it the pain invariably recurred.

"Being tired out with the long continuance of the disease, she now wished, if possible, that something more should be done, and I mentioned to her that permanent relief might possibly be afforded by trephining the head of the tibia, where, as I conceived, some local cause was keeping up the disease. The patient, who before had refused to go into the hospital, now readily consented, for the purpose of having the operation performed. On her admission, the left leg, round the head of the tibia, measured half an inch in circumference more than the right. There was comparatively little pain or swelling, as she had been taking medicine for some days; but she complained of tenderness upon pressure about the insertion of the ligamentum patellæ, and over the upper part of the internal tuberosity of the tibia, which was evidently enlarged. As the shaft of the bone was in no way affected, and the pain and swelling were confined to the immediate neighbourhood of the joint, it appeared that the epiphysis of the bone had originally been the seat of the disease. It became, therefore, necessary to apply the trephine to this part, taking care, at the same time, to avoid injuring the articulation. I had the advantage of Mr. Fergusson's and Mr. Partridge's advice; the operation was performed with their concurrence.

"On the 29th of May, a T-shaped incision having been made over the upper part of the internal tuberosity of the tibia, the parts below were carefully separated with the handle of the scalpel, until the bone was felt with the point of the finger. The trephine, which was made purposely, with a very deep blade, and not more than a third of an inch in diameter, was now applied. As soon as the outer shell of bone was perforated, the cancellous structure was felt to give way under the pressure of the instrument, and some minute and separate flakes of white matter were observed to escape with the blood by its side. After the operation, water dressing was applied, and an opiate ordered at night. On the 1st of June, the patient stated that her leg had not felt so easy for four years. She had slept well every night since the operation, and was free from pain. There was no fever.

On the 4th the knee felt stiff and sore, and rather uncomfortable, but she had had no return of the 'old pain;' a gutta percha splint was placed behind the joint.

"5th.—She was again free from pain.

"7th.—There was now, for the first time, some return of what she distinguished as the old pain.

"12th.—All uneasiness had now subsided without any medicine, and she felt quite comfortable.

"18th.—Had again some discomfort about the knee, but no further return of the former pain. The puffy swelling on the outer side of the tibia, which had in a great measure subsided, now increased, and became painful upon pressure; a diseased gland in the neck at the same time began to enlarge. She was ordered some citrate of iron in

combination with the small doses of the iodide of potassium, and was directed to get up, as it was supposed that her present symptoms depended in a great measure upon her confinement to bed. In a week after this time, she was enabled to leave the hospital, when her general appearance rapidly improved.

"On the 24th of August her health was quite restored; she could raise her leg without any pain or inconvenience, and had experienced no return of the 'old pain' since leaving the hospital.

"The idea of trephining the tibia in this case was suggested by a case which occurred at the Lock Hospital, during the period when I held the office of house-surgeon. A young and delicate woman, after other symptoms which it is unnecessary to detail, became subject to intense and uninterrupted pain in the right thigh. The disease was relieved by none of the means employed, and the patient at length, after most protracted and severe suffering, died, apparently worn out by the pain. On making a section of the bone, I found that its cancellous structure was occupied at different parts by a morbid deposit. This occurred in irregular patches, completely filled the cancelli, and was of a light brown colour. It was moderately firm in consistence, and upon a chemical examination by Dr. Beale, of Carey street, was pronounced to consist chiefly of fatty matter. The parietes of the bone were greatly thickened, and a kind of cancellous structure had been developed between the original outline of the bone and the newly-formed portions.

"The extreme distress which this patient endured arose probably from the tension produced by the interstitial deposit of bony matter: whether determined in this individual instance by the presence of diseased matter in the interior of the bone, or not, I will not undertake to say; but, in either case, it appeared probable that the pain which constituted the really serious part of the disease might have been relieved, had a sufficient opening been made in the bone. If the morbid deposit kept up the irritation and produced the surrounding thickening, an artificial opening might at once have afforded relief. The object of such an opening would be not necessarily to remove all the diseased matter in the interior of the bone, but that it might be dissolved and expelled in the subsequent suppuration. If, on the other hand, the real disease were independent of the deposit in the cancellous structure, the removal of a portion of the dense and hard crust of the bone would be the means most likely to relieve the tension of the parts. Such were the considerations which determined me, should an opportunity present itself, to try the effect of making an artificial opening in cases of long-continued pain in bone, not yielding to internal remedies, and following the action of a morbid poison upon the system. In such an experiment there is everything to be gained and nothing to be lost. For should the operation entirely fail in removing the symptoms, the patient is not left in a worse condition than before.

"The morbid deposit in the interior of bones to which I have alluded, may, I believe, take place so as to occupy a large portion of their cancellous structure; and that it then becomes a source of irritation in some cases, I cannot doubt, from the fact of openings being

occasionally formed by a natural process of ulceration in bones long affected, as if to allow an exit for the morbid matter.

"In the class of cases now referred to, there may be no formation of pus in the bone. In this respect they differ from those previously mentioned. Independently, however, of the actual pressure of the confined fluid, the cases are strictly analogous. The essential characters of the disease may be the same, whether the original cause of local irritation arise from confined purulent fluid, or from a deposit of morbid matter in a more solid form, or from a piece of necrosed bone.

"*Case IV.*—A. R.—, æt. 24, was admitted into King's College Hospital, May 21, 1852. Twelve months previously, she had experienced much pain in the left leg. This was attended with swelling and redness extending over the whole limb. After a time, she went into Guy's Hospital, where she remained twenty-two weeks, and then returning home, continued without attendance for three months.

"On admission into King's College Hospital, the two lower thirds of the left tibia were very much enlarged; the surrounding skin was red, and tender upon pressure; she complained of pain in the leg, which at night was occasionally sufficiently severe to cause her to get up and walk about the room. Generally speaking, she found that the leg was easier when hanging down than at other times. There was no external opening, nor any apparent constitutional or hereditary disease to account for the symptoms. She was kept, in bed for five weeks, and some internal medicines were given; but as no benefit appeared to be derived from these means, the operation of trephining the tibia was performed upon the 1st of July. It became apparent during the operation that the bone was very greatly thickened and condensed; and it was with some difficulty that the trephine was made to perforate its dense substance. When the first portion of bone was removed, the irregular rough surface of some dead bone could be felt beneath. It became therefore evident that the case was one of necrosis. The trephine, which was of small diameter, was now applied to different parts, so as to admit of a considerable portion of the newly-formed bone being removed by sawing between the openings. These would represent the corners, and the lines of the saw the sides, of an oblong. The portion of bone thus raised was half an inch thick at its thinnest part. Between it and the exposed and necrosed shell of the tibia there was no fluid whatever. A portion of the dead bone at the bottom of the wound was now removed in a similar way, and in the centre of the old bone was found a condensed and detached portion of dead cancellous structure. It is unnecessary to give any further details of this case, except to mention that, after the operation, the pain, as well as the redness of the skin of the leg, entirely subsided, and in less than two months she was sufficiently well to leave the hospital.

"Strumous deposit in bone may in like manner become the source of chronic irritation and long-continued pain. It is seldom, indeed, that crude tubercle is deposited in any quantity in bone, but the following case, for which I am indebted to Mr. Hewitt, of St. George's Hospital, will serve to show that when it does occur the symptoms will

bear a certain resemblance to those of chronic abscess. A man was admitted into St. George's Hospital with a tumour situated at the union of the middle to the lower third of the thigh. This tumour was unyielding in its nature and not painful when handled. Fifteen months previously the patient had begun to suffer considerable pain in the bone, of a shooting character. This deprived him of rest at night. Three months afterwards the swelling made its appearance, and gradually increased in size; seven months from the time he was first attacked his health began to fail, and the pain in the thigh had, with few intermissions, been continual and of a severe character. The year following his first admission into the hospital, he was attacked with erysipelas, and died. On examining the thigh, great thickening and condensation were observed between the muscles and the bone. The periosteum, which was much thickened, presented, on its free surface, a large patch of tubercular matter, enveloped in a dense cyst. The bone itself was irregular in shape, much hypertrophied, and very hard. Its medullary cavity at this point was filled with tubercular matter, surrounded by grey semitransparent lymph. Deposits of scrofulous matter were also found in other parts."

ART. 54.—*On a simple Mode of applying Pressure in Chronic Enlargement of certain Bones.* By Dr. INMAN, of Liverpool.

(*Medical Times and Gazette for Aug. 28.*)

The case is as follows:

M. C—, a delicate little girl of three years old, was brought to Dr. Inman with swelling of the left knee-joint. On measurement, he found that it was three quarters of an inch larger than the right. The swelling had commenced six weeks previously; had been slowly increasing; it was just beginning to be painful after exercise. The increased size was due to an enlargement of the head of the tibia and the condyles of the femur. Considering this to be a case more likely to be benefited by steady pressure than by more severe remedies, he had recourse, at first, to strapping; but, finding this of no use, he directed the mother to procure a piece of thin vulcanised India-rubber cloth, which she was to shape to the knee, allowing an interval in front of about three quarters of an inch. The edges were to be bound by a piece of thin leather, and a piece of wash-leather was to be placed as a tongue between the laced portion and the knee. Holes were to be made in the cloth behind the binding, and the whole was to be laced like ladies' stays. The elastic was to be worn during the day and night, or according as the patient was able to bear it. Exercise was not prohibited, and no medicine was ordered. He saw her again in ten days. The bandage had been worn for fourteen hours daily, and taken off at night. The knee was reduced a quarter of an inch in circumference.

In ten days she called again, complaining of pain and oedema of the leg, in the evening, from pressure. On removing the elastic, whose edges now overlapped, he found the knee restored to its normal size and shape. The child could run about without pain or inconvenience.

He directed the disuse of the bandage, unless the swelling should return.

It is unnecessary to make any long comments upon this case. The fact of a morbid deposit in bone being absorbed, or, one might almost say, a threatened white-swelling, cured in three weeks, without blisters, issues, or caustics, without confinement, or even complete rest, is sufficient to speak for itself. Of course, such a plan can only be adopted when there is no reason to believe that active inflammation or purulent deposits are present, and where there is no severe pain.

The only novelty in the idea is, probably, the kind of elastic adopted, which is superior to the elastic web, both on account of its cheapness and its smoothness.

7. Of Amputation.

ART. 55.—*At what time after an Injury requiring Amputation ought the Operation to be performed?* By G. J. GUTHRIE, Esq., F.R.S.

(The *Lancet* for May 1.)

[In a recent lecture, Mr. Guthrie proceeds as follows:]

"1. When the wound of an extremity is of so serious a nature as to preclude all hope of saving it by scientific treatment, that limb should be amputated as soon as possible.

"2. An amputation of the upper extremity may almost always be done from the shoulder-joint downwards, without much risk to life, and when necessary, the sooner it is done the better.

"3. An amputation of any part of the lower extremity below the knee downwards may be done forthwith, with nearly an equal chance of freedom from any immediate danger, as of the upper extremity at or near the shoulder-joint.

"4. It is otherwise with amputations above the middle of the thigh, and up to the hip-joint. They are always attended by considerable danger.

"5. There can be no doubt that if the knife of the surgeon could in all cases follow the ball of the enemy, or the wheel of a railway carriage, and make a clean good stump instead of leaving a contused and ragged wound, it would be greatly to the advantage of the sufferer; but as this cannot be, and an approach to it even can rarely take place, the question naturally recurs,—At what distance of time after the receipt of the injury or accident can the operation be performed most advantageously for the patient?

"6. In order to answer this question distinctly, it should be considered with reference to two distinct states of injury:

"1st. When injuries require amputation of the arm below the shoulder-joint, or of the leg below the knee, these operations may be done at any time from the moment of infliction until the expiration of twelve or twenty-four hours, without any detriment being sustained by the sufferer with regard to his recovery; although every one, under such circumstances, must be desirous to have the operation over. The surgeon having several equally serious cases of injury of the head or

trunk brought to him at the same time as two requiring amputation, may defer them more safely perhaps than the assistance he is also called upon to give to the other cases, the postponement of which may be attended with greater danger.

"2d. This state embraces those great injuries, in which the shoulder is carried away with some injury to the trunk, or the thigh is torn off at or above its middle, rendering an amputation of the upper third or at the hip-joint necessary; and it is this or nearly this state which alone implies a doubt as to the propriety of immediate amputation, and demands further investigation. It is the state to which attention is earnestly drawn for future observation.

"7. It has been implied, if not actually maintained, that a man could have his thigh carried away by a cannon-shot without being fully aware of it, or, if aware of it, that it did not cause much alarm—in fact, that it did not materially signify as to his apprehension, whether the ball took off his limb or the tail of his coat, or only grazed his breeches. An instance of this kind has not fallen under my observation.

"8. A surgeon on a field of battle can rarely have a patient brought to him, requiring amputation, under less time than from a quarter to half an hour; a surgeon in a ship may see his patient in less than five minutes after the receipt of the injury; and to the surgeons of the navy we must hereafter defer for their testimony as to the absence or presence of any constitutional alarm and shock; and if they occur, to what degree do they follow immediately after the receipt of such injury. The question must not be encumbered and mystified by a reference to all sorts of amputations after all sorts of injuries, but to the one especial injury—viz., that of the *upper half of the thigh*.

"9. My experience, which may be erroneous, like everything human, has taught me, that when a thigh is torn, or nearly torn off, by a cannon-shot, there is always more or less loss of blood, suddenly discharged, and which soon ceases in death, or in a state approaching to syncope. When the great artery is torn, this fainting saves life, for an artery of the magnitude of the common femoral does not close its canal by retracting and contracting, as a smaller vessel does; it can only diminish it; and the formation of an external coagulum is necessary to preserve life, which the shock, alarm, and fainting, by taking off the force of the circulation, aid in forming; and without which the patient would bleed to death. An amputation, in this state of extreme depression, might destroy life.

"10. If the cannon-shot, or other instrument capable of crushing the upper part of a thigh, should not divide the principal artery, and the sufferer should not bleed, it is possible he may be in the state alluded to, in which the patient, for he may not be called sufferer, is said to be just as composed as if he had only lost a portion of his breeches. Nevertheless, few have seen a man lose even a piece of his breeches by a cannon-shot, without perceiving that he was indisputably frightened.

"11. Whilst some persons, under the loss of a limb high up, are reduced to a state of syncope, or nearly approaching to it, which renders them almost, or even entirely, speechless; others suffer extreme pain,

and earnestly entreat assistance, under which circumstances, amputation should be performed forthwith. In the former, the administration of stimulants may render the operation less immediately dangerous.

"12. Chloroform, or other similar remedies, may produce an effect in such cases yet unknown. Its careful administration may not destroy the ebbing powers of life, and may render an amputation practicable, which could not otherwise be performed without the greatest danger. It may be otherwise; the point, however, is to be ascertained, although in all cases of great suffering its use should be unhesitatingly adopted.

"13. When the sufferer is brought to the surgeon at the end of half an hour, having lost a limb below the thigh or shoulder, by a cannon-shot, he will often be found in a state of such great depression, as to be likely to be destroyed by the infliction of a serious and painful operation like amputation. This has occurred to me so often, as to induce me to recommend delay for five, six, or even eight hours, if the unfortunate person did not suffer much, and appeared likely to be revived by the proper use of stimulants.

"14. This recommendation originated from the fact, that as one seriously wounded man has as much claim as another to the attention of the surgeon, all could not be attended to at the same time; and the success following the deferred cases of amputation was as great, if not greater, than in those on which the operation was more immediately performed.

"15. The advantageous results of *primary* amputations, or those done within the first twenty-four, or at most forty-eight hours, over *secondary* amputations, or those done at the end of several days, or three or four weeks, has been so firmly and fully established, as to admit no longer of dispute.

"16. When an amputation is deferred to the secondary period, a joint is often lost. A leg which might have been cut off below the knee in the first instance, is frequently obliged to be removed above the knee when done in the second.

"17. In the secondary period after great injuries, the areolar and muscular textures near the part injured are often unhealthy, the bones are in many instances inflamed internally, and their periosteal membranes deposit on the surrounding parts so much new ossific matter, as frequently to envelop in a few days the ligatures on the vessels, and render them immovable, necrosis of the extremity of the bone following as a necessary consequence, protracting the cure for months.

"18. Sloughing of the stump, accompanied by inflammation of the vein or veins leading to the cava, frequently takes place. This state of stump is often followed by purulent deposits in and upon the different viscera, and principally in the cavities of the chest. Where febrile diseases are endemic, they often prevail; the constitutional irritation is great; the stumps do not unite, or open out if apparently united and slough, and frequently after a few days implicate the veins."

8. *Of Anæsthetics.*

ART. 56.—*On the Mode of Employing Chloroform.* By J. CHITTY
 CLENDON, M.R.C.S., Surgeon-Dentist to the Westminster Hospital.

(*Medical Times and Gazette for June 12.*)

[The following remarks were made on the occasion of the recent death from chloroform in St. Bartholomew's Hospital. They are, in our opinion, of importance in two points of view,—in showing the advantage of the mask over the napkin, and the great value of the *breathing* as a test of danger. Their importance is enhanced, also, by the fact that they advocate a method which is applicable in cases where the medical man is left to his own resources.]

“Death from chloroform, and in the presence, too, of distinguished surgeons, is an event which cannot fail to shake the confidence of the Profession and the public in this important anæsthetic agent, and to induce much hesitation on the part of those who daily administer it.

“It seems, therefore, the duty of all whose attention has been directed to the subject, to put forward, for the consideration of themselves and their brethren, any observations which their experience may suggest as to the course most proper to be adopted on a question of so much moment.

“A great majority of the cases hitherto reported as fatal, have occurred on the Continent, or in the provinces; few, if any, have come under our own observation; and, while opponents have not failed to ascribe death, in each recorded instance, to chloroform, its advocates, on the other hand, have invariably attributed it to some latent organic disease; to want of tact and experience on the part of the practitioner; to the impurity of the chloroform, or to some error in the mode of administering it. From the clear and circumstantial account furnished, the present case seems to admit of none of these objections, for the patient had, a few days previously, been under its influence for a lengthened period without suffering the least inconvenience. Exactly the same chloroform was used on the second occasion as on the first, and the gentleman who administered it had had considerable experience in its use. The partial success which attended the several efforts to restore animation, would also tend to the belief that death resulted from functional disturbance, not from a morbid condition of any vital organ. Taking, therefore, the case as reported, without knowing what a *post-mortem* examination may reveal, I think there can be no doubt that death, in this instance, was attributable to chloroform.

“Now, if we admit that death *may* occur from chloroform, in a case where every care and precaution are taken, and where the patient is, to all appearance, healthy, it becomes a most important question, Are we justified in using it at all? This, it appears to me, is a point on which some authoritative decision should, if possible, be obtained, and which ought not to be left to individual will or individual responsibility.

“Some two or three years since, a death, supposed to be from

chloroform, occurred at Boulogne, on which the French government immediately instituted a medical inquiry; but in this country we cannot expect Government interference, nor consequently, any decision having the force of law. Yet, I think, if a committee could be formed of leading members of the Profession, to examine into and maturely weigh all the evidence for and against chloroform, the propriety of continuing its use, and the safest manner of using it, the deliberate opinion of such a body must have great weight with all classes of the community, would greatly reassure the individual practitioner, and could hardly fail to lead, in many instances, to an improved method of administering it. To select unbiassed judges might seem a work of some difficulty; yet, I think, such a committee might be formed, of gentlemen already in office by the choice of their medical brethren, namely, the Presidents of the several Medical Colleges and Societies in the metropolis, while, against the impartiality of a body so constituted, none could take exception. But, in the interim, or until something like uniformity in opinion and practice can be arrived at, one other question is of paramount importance for us all to consider, namely, by what method of administering, and by what indications during the process, can the safety of the patient be best insured, while we continue to mitigate suffering by this powerful agency?

“On both these points I wish to offer a few remarks; for, as I have given much attention to the subject, and had considerable experience in the use of chloroform ever since its introduction, I feel it my duty to state the conclusions I have arrived at, and I trust I shall be pardoned if, at the commencement, I refer to a pamphlet I published three years ago, and again earnestly call attention to the following quotations:—

“I usually administer it on sponge, placed on a small plated mask, with flexible edges, made by Messrs. Fergusson, the surgical instrument makers, near St. Bartholomew's Hospital. This little apparatus is cleanly and convenient for covering the mouth and nose; not being complicated with valves, it cannot get out of order, and it is perfectly easy to breathe through.

“I very much prefer this mode (the mask) to the napkin or handkerchief; patients complain of the latter producing a sensation of suffocation. The chloroform, too, is spread over a large surface, and when folded up cannot be so conveniently directed, nor kept so much under control. The mask I intrust to patients to hold for themselves; if they find the vapour too strong at first, they can remove it, and accustom themselves to it gradually.

“Now, as to the best method of administering it. I am aware that there are many practitioners whose opinions are deserving of respect, who still advocate the use of the napkin or handkerchief, and as far as I can ascertain, on the ground of its being the simplest mode, and the one always adopted in Edinburgh. But I doubt if it be the simplest mode; it certainly appears an unphilosophical one. A comparatively large and unmeasured quantity of chloroform is poured on a folded handkerchief, which quickly spreads over the greater part of its surface. As respiration could not be carried on through the handkerchief, it

is held at a little distance from the mouth; the chloroform must, therefore, evaporate, and mingle with the surrounding air before it can be inhaled. Besides the waste this occasions—an ounce being used when a drachm would suffice—there are no means of knowing how much of the vapour the patient is inhaling; that will depend in a great measure on the nearness of its approach to the mouth. The handkerchief shuts out from view a considerable portion of the face, and during the critical part of an operation, or when an operation possesses more than usual interest, there is a risk of the attention being withdrawn from the chloroform, and by the handkerchief being inadvertently allowed to press on the mouth and nostrils—of excluding air altogether.

“Another great objection to the use of the handkerchief I shall have occasion to refer to presently; but I think those already mentioned quite sufficient to counterbalance any advantage to be gained from its simplicity.

“Masks of various forms, for covering the nose and mouth, fitted with valves, are frequently employed. The object of the valves is, to prevent the breath returning through the sponge which holds the chloroform.

“During inspiration a valve opens, to admit air impregnated with chloroform; it then closes, and the expired vapour escapes through a second valve, the two opening and shutting alternately. This plan is cleanly and economical, inasmuch as it prevents a wasteful discharge of vapour into the apartment. Its great drawback is, the liability of the valves to get out of order, or to be impeded in their action; more especially when respiration becomes feeble, or when the patient inhales in a reclined or recumbent posture, the valves, which are arranged to act vertically, being then placed in a horizontal position. Under such circumstances, it is evident the requisite supply of air may be diminished or entirely cut off. I have seen this happen on more than one occasion, when, but for the warning afforded by the suffused state of the countenance, and the purple hue of the lips, the patient would have been suffocated.

“For these and other reasons, I prefer the simple mask before described, with a sponge just large enough to absorb a drachm and a half of chloroform; this, as it cannot possibly offer any impediment to respiration, requires no attention, unless to renew the chloroform, during the process of inhalation. I always allow patients to apply it themselves, as long as the power of holding it remains; by inhaling for a few moments and removing it at pleasure, they gradually become accustomed to the vapour, and confidence is gained. When these attempts have been renewed three or four times, the chloroform begins to take effect, and tranquillity is ensured; struggling, so painful to witness, and the consequent necessity for coercion, are thereby avoided. Relieved from all anxiety on this account, the practitioner is enabled to devote his undivided attention to the patient's respiration. To this end the throat and upper part of the chest should be divested of covering; and, from the commencement of inhalation until its termination, every respiration should be carefully noted; while the respiration is free, there cannot possibly be danger; the moment

hesitation or embarrassment is perceived, the chloroform should be removed, and then, by compressing the chest, a single free inspiration will suffice to place the patient in safety. In experiments on domestic animals, I have invariably found, however feeble respiration had become, if the chloroform were removed, and the animal exposed to the air, it quickly recovered; but when, on the other hand, breathing had entirely ceased—although no time were lost—neither artificial respiration, opening the jugular vein, nor any means I could employ, succeeded in restoring it; and I am, moreover, informed by a gentleman who has repeatedly tried galvanism and electricity with the same object, that his attempts were equally unsuccessful.

“When the handkerchief is used, continued attention is required to hold it in the proper position, and then it obscures so much of the face and neck that it is difficult to watch the indication I have spoken of. In such cases the state of the pupil is occasionally noticed, and the pulse from time to time referred to; but while the former is an uncertain, the latter may prove an unsafe guide, and ought never alone to be depended on. At times, and under the same circumstances, we find the pupil contracted, at others dilated, its condition seeming to depend on the temperament of the patient. During the early stage of inhalation, the heart generally beats quickly, and often tumultuously; yet I have known a pulse at 140—perhaps from the excitement of entering the operating theatre—gradually drop down to 100, under the influence of Chloroform; and I believe physiologists are agreed, that the heart's action may continue a minute or longer after respiration has entirely ceased.

“In the recent fatal case, the failure of the pulse appears to have afforded the first indication of danger; how long the patient had then ceased to breathe is not stated, and probably is not known. But, whatever the period, the attempts to promote respiration were partially successful, and,—although dangerous to push the chloroform so far,—had the failure been detected on the instant, is it unfair to believe the result would have been different?

“I would, therefore, again most emphatically repeat, *watch the breathing*. It is now more than three years since I pointed to this as an unerring guide; subsequent daily experience has tended to confirm the opinion I then expressed; and I can conscientiously declare, in the numerous instances in which it has fallen to my lot to administer it, I have never witnessed symptoms which caused me a moment's uneasiness; nor have I heard of subsequent effects more formidable than sickness and depression.

“A few words as to the quality of chloroform. I have obtained it from many sources, and to the credit of chemists be it said, with one exception, have found it pure. In the instance referred to, it was supplied by a wholesale druggist to a public institution; the odour was peculiar, and it left on the sponge a most offensive residuum. But, however pure and carefully prepared, chloroform is liable to decomposition. On one occasion, in replenishing a bottle in daily use from a larger supply kept in a cool cellar, I noticed a vapour resembling the fumes of nitrous acid, arising from the neck of the bottle: its effect on the nose was highly irritating, and, in that condition, could not have been

inhaled for an instant: in a less advanced stage it might have been administered, and produced unpleasant consequences. On referring to the chemist, from whom it was obtained, he admitted he knew of similar instances; it arose from a sudden decomposition, the causes of which he could not explain. This shows the necessity for watchfulness, taking nothing for granted. When we have satisfied ourselves that each step in the process has been carefully attended to, we need have little fear for the results.

ART 57.—*A Case showing the Value of Galvanism in the Suspended Animation of Chloroform.* Reported by Mr. JOSEPH EWART.

(*The Lancet for July 31.*)

[The following case, which occurred in Guy's Hospital under the care of Mr. Hilton, is well calculated to show the great value of galvanic excitation of the diaphragm in the suspended animation of chloroform.]

"C. R—, æt. 29, married for the last ten years, during which time she has been subject to fits of syncope, was admitted, under the care of Mr. Hilton, June 16, 1852. Her forehead is remarkably prominent, and the head altogether large, but the general health is good. From notes originally taken by Mr. Moon, it appears that eighteen months before the patient's admission a small swelling, accompanied in its progress with nocturnal pain, appeared on the dorsal aspect of the fifth metacarpal bone of the left hand, which swelling gradually enlarged up to about two months before the present admission. Mr. Hilton then laid it open, and extracted a piece of necrosed bone in process of exfoliation.

"The patient left the hospital, after this operation, for the benefit of country air, with strict orders to maintain the hand at perfect rest. She returned on the 16th of June, 1852, with the same metacarpal bone in a state of active disease, which bone, together with the corresponding finger, at the recommendation of Mr. Hilton, she determined on having removed.

"On the 26th of June, at half-past 1 p.m., the patient (at her own express wish) was placed under the influence of chloroform, of which three drachms were given. She had had her bowels relieved by medicine, and had only taken beef-tea for dinner. The whole of the metacarpal bone was then removed, with the exception of a small portion at the carpal extremity, which was left, to preserve the integrity of the carpal joints. At the completion of the operation, during the performance of which scarcely any blood was lost, the patient manifested perfect consciousness, and answered questions slowly but correctly. As she felt comfortable, and was expressing a wish to walk back into the ward to her bed, and not be carried, she was assisted by two attendants whilst rising from the table; but no sooner did she gain the erect posture than she fell back into the arms of those who were supporting her, and relapsed into a state of insensibility. The pupils were now minutely contracted; the respiration feeble, slow, and labouring; the expansion of the chest almost

imperceptible, and chiefly effected by the diaphragm; the pulse 60, feeble, irregular, and unequal in the force of its beats.

"Doors and windows were immediately opened, cold air admitted, and thrown in currents across the patient's face by fanning; cold water was dashed upon the face and chest, by which an occasional sighing inspiration was excited. Brandy and cold water were freely given, and strong ammonia applied to the nostrils. These means increased, for a time, the force and frequency of the pulse and respiration; but the insensibility and minutely-contracted pupils remained unchanged. Respiration was now aided by compressing the sides of the chest, with the palms of the hands firmly applied, during the act of expiration, but without satisfactory results.

"Notwithstanding the continuance of the above-mentioned means, the circulation remained feeble, slow, and unsteady, the respiration progressively diminishing in force and frequency, this decline being associated with a corresponding decrease of the temperature of the whole body.

"After a trial of two hours and a half of the remedies just described, as the danger was becoming imminent, the galvanic apparatus was procured, and shocks were passed over the chest and top of the spine, at the origin and insertion of the phrenic nerves, and continued during two or three minutes. This produced the happiest results, as evidenced by the following change in the symptoms:

"The patient raised her body from the bed, sighed frequently and profoundly; a general tremor, of about a minute's duration, ensued, at the end of which she opened her eyelids, complained of pain and fulness in the head, answered questions correctly, and when asked whether she suffered pain during the operation, replied that she had felt none until the ligatures were applied; pulse now 116, full, much stronger; pupils natural.

"There was a tendency to relapse into a state of insensibility after the use of the galvanism; but the occasional dashing of cold water on the face, together with the internal administration of the same fluid, appeared to prevent a recurrence.

"For a week after the operation the patient complained of great fulness in the head, and cephalalgia, which considerably disturbed her night's repose. The operation has been perfectly successful; and on the 17th of July, one month after admission, she was presented cured.

ART. 58.—*Ice as a Local Anæsthetic.* By Dr. BERRY, of Washington.

(*Philadelphia Medical Examiner for Sept.*)

[Ice, it appears, has been employed to deaden the sensibility of a toe or finger from which the nail had to be removed, with perfect success at the time, and without any injurious reaction subsequently. Dr. Berry has tried the experiment in one instance, and seen it tried in six.]

"The agent was first made use of in the wards of M. Velpeau, during the past summer, in Paris, by one of his internes, and afterwards successfully applied by himself in a number of cases. The ice is

powdered finely and mixed with a sufficient quantity of salt; next enveloped in a thin cloth, and the two phalanges of the great toe or thumb enveloped in it; the application should not be continued over five or six minutes, this time being sufficient to produce the most perfect anæsthesia. M. Velpeau proceeds with the operation in the following manner:—Immediately upon removing the ice, the nail is divided in its length with a common sized bistoury from its free extremity to the root, then seizing each half successively with a strong forceps, it is removed with a moderate *jerk*. M. Velpeau directs the application of compresses of cold water to the part during the first twenty-four hours; and the simple cerate dressing for a few days is all that is required."

(B.) OF SPECIAL SURGERY.

1. *Of the Head and Neck.*

ART. 59.—*Entropium; its pathology proved to depend on Muscular Action: the Source of the Muscular Power; a New Method of Operating.* By HAYNES WALTON, Esq., F.R.C.S., Surgeon to the Central London Ophthalmic Hospital, and to St. Mary's Hospital, Paddington.

(*Medical Times and Gazette for May 22.*)

[Mr. Haynes Walton regards Entropium as the result of inordinate contraction of the marginal part of the orbicularis palpebrarum, the muscular ciliaris; and the operation he proposes, is the excision of this muscle. A similar explanation and measure had been proposed thirty years ago by Mr. Key, and carried into practice, in one case at least; but Mr. Walton conducted his own investigations in ignorance of this forgotten fact. The first part of the paper is a refutation of certain received views on the subject:]

"Of the many reputed origins of the derangement, some are obsolete and need not be recounted; but several others, such as relaxation of the skin of the lid, thickening of the palpebral conjunctiva, shrinking of the tarsal cartilages, occasional faulty action of the orbicularis palpebrarum muscle, combined with one or other of those states, are entertained at the present time, and are ingeniously and plausibly advocated by their several propounders. I question the soundness of these speculations, but admit that there is reasonable probability in that which attributes the disease to occasional faulty muscular action.

"To say, that looseness of the skin of the lid allows of inversion of the tarsus, would be to affirm that, in a healthy eye, the skin is antagonistic to some power acting on the lids,—a statement physiologically erroneous. The skin of the lids is never tense, but always loose, as a natural provision for their unrestrained movements; and this is especially exemplified in the upper lid, where the motions are freer than those of the under. Moreover, it is singularly thin, and apparently devoid of elasticity, or, at most, possesses it in a minimum degree; and were it required to show more than this, I would point to the baggy and even sometimes pendulous state of it in

advancing life, co-existent with the perfect integrity of the ocular appendages.

"The supposed influence of the palpebral conjunctiva in producing the inversion has been taught for more than two hundred years, and has been particularly urged of late by Mr. Wilde, in a very instructive communication to the 'Dublin Medical Journal,' for March, 1844, and since in a pamphlet, for a copy of which I am indebted to the courtesy of the author. But it appears to me, that the morbid changes it may exhibit in these cases are merely the effect of the general irritation of the eye due to the inversion; for in incipient entropium, when the irritation of the cilia is confined to the conjunctiva of the globe, I have not been able to satisfy myself of any condition of the palpebral conjunctiva that may not be seen in a healthy eye. After a time, which varies according to circumstances, when the entire conjunctiva is involved in that general inflammation which is sure to ensue in the progress of the affection, that on the lids does exhibit various morbid appearances, which, as far as I can make out, differ in no respect from those resulting from inflammation from other causes, and from which the lid does not become curved.

"That the unnatural state of the lid may depend on some primary change in the shape of the tarsal cartilage seems most probable, and is that most generally received as the true explanation. To examine into its correctness is a matter of some difficulty, and the only reliable method I can suggest, is to select those cases of entropium that are not complicated with other diseases of the lids, either as a consequence, or what would appear to be usually a precursor, or excitant of the affection, and by which the cartilages may be influenced: for example, those in which there is neither inflammation, nor any of those changes in the lid which arise from inflammation. And it will simplify the inquiry even more to look principally to an inverted lower lid, because that lid offers a greater facility for observation, as the natural direction of its border is outwards and away from the globe; and any change or alteration in its direction can be better appreciated than in the upper, where the margin inclines somewhat inwards. Besides, there is a very marked difference in the size of the cartilages, and which may throw additional light on the inquiry; the lower is about half the breadth of the upper. In the most marked or aggravated stage of entropium in the under lid, the tarsus does not rest against the globe as though it bound it, because of being contracted in any direction; but the lid is so completely turned on itself, that the cilia are hidden, the narrow cartilage is, in fact, rolled up in the lid, and its position is completely reversed. It is evident from the narrowness of the cartilage, that no curve of it, nor any kind of contraction, could produce those changes in the lid. But, more than this, I have never been able to satisfy myself that the cartilage is ever at all altered or modified; and, if not, it cannot have any degree of influence in producing the inversion.

In entropium of the upper lid, the inverted cartilage rests against the globe, and the convexities of the cilia are then on the cornea, while their extremities are directed outwards, a position that their ends

assume from the handkerchief being used in that direction during the frequent calls for its application. In some aggravated cases they lie spread out on the globe of the eye. Now, this difference in the directions of the edges of the lids ought not, I think, to be sought in dissimilar causes, but attributed, I imagine, to the same causes acting on the dissimilar physical constructions of the lids. The cartilage is curved on itself, its breadth not allowing it to be rolled up, like the cartilage of the lower lid. *

"With an exception or two, the influence of muscular power has been regarded principally in the light of a partial secondary cause, blended with some one of the supposed primary causes that I have examined. And the more general opinion is, that its detrimental action is induced by tegumentary disarrangements, by relaxation, or by swelling of the skin over the upper part of the lid, by which its influence in supporting the muscular fibres of that part is lost, while the remainder of the muscle on which the skin yet acts continues its function, and rolls the edges of the lids inwards. The assertion of the action of the orbicularis depending on the binding of the skin, is thoroughly untenable."

[Mr. Walton then occupies a good deal of space in demonstrating the sufficiency of the muscular fibres concerned in the production of entropium, which he does by quotations from some of the older and more careful anatomists, by his own dissections, and by a curious power possessed by one of his colleagues in the Central London Ophthalmic Hospital, of voluntarily producing entropium in both the lower eyelids.

The operation itself is thus described:]

"An assistant (in the case of the right eye) stands behind the patient, and having made the lid tense by drawing it outwards and raising the brow, two incisions are to be made through the skin and muscle, one along the edge of the tarsus close to the cilia, and the second about the quarter of an inch above, and meeting the other at the extremities. The flap thus isolated, should be dissected vertically from the one side to the other, and not taken away by horizontal strokes of the knife, or else the muscular portion will not be effectually removed. The wound should be very carefully sponged during the operation. Any arterial jet must be checked by temporary pressure with the finger. I have never found a ligature to be necessary. The exposed surface must be inspected, and, if any muscular fibres have escaped, the forceps and knife must be reapplied. The assistant should not desist until the knife has been laid aside, for the proper retraction of the skin is essential to steady and effectual dissection. Three or four sutures should be used. The cilia might appear to be in danger of being dissected off, but in reality they are not. A part only of the dissection is over them, and, by the loose cellular connection, the muscle is readily raised from the dense fibro-cellular tissue in which they lie.

"Heretofore, when an operation for entropium has been undertaken with the design of removing any part of the orbicularis palpebrarum muscle, it has been executed on very different principles, and in a very different manner to that I now advocate, and with very different

results. The marginal part of the muscle, the *musculus ciliaris*, has been untouched, and only a bit of the centre of that on the lid has been snipped out. The only exception I know of is in the practice of Mr. Key."

[In concluding his paper, Mr. Walton makes some remarks upon the ordinary companion of entropium—*trichiasis* :]

"It is important, before operating for the entropium, to ascertain whether there is also *trichiasis*, and whether the restoration of the lid to its natural position will or will not counteract the maldirection of the cilia. Should it not be sufficient, then more skin must be taken from the lid than would otherwise have been necessary, and a slight degree of eversion of the centre of its edge produced, and which must necessarily have its limit. When it is apparent that such moderate eversion will not suffice, the treatment must depend on the degree of the *trichiasis*; if it be general, the entropium and it must be attacked by one operation. The cilia must be excised at the same time, that a sufficient extent of the skin of the muscle should be removed. But, when the *trichiasis* is partial—and, for the most part, it is—the muscle should first be dissected away, and then the irregular cilia removed. When there is doubt about the necessity of removing them, attend to the entropium alone, and observe the result, because it is not always possible, before the operation for the entropium has been done, and the lid recovered from it, as well as from any inflammation and swelling that the entropium may have induced, to ascertain with exactness to what extent the *trichiasis* may be benefited. If, as is commonly the case, a patient applies to be treated for entropium, with many of the cilia broken, and some just about to be restored after having been plucked out, it cannot be known what direction they may assume when growing out; and such cases should be watched.

"It can be very seldom that the removal of entropium from the lower lid does not at the same time separate any irregular cilia from contact with the globe, for a single exception only has occurred to me."

ART. 60.—*The Treatment of Ophthalmia, especially by Occlusion of the Eyelids.* By Professor FORGET.

(*London Journal of Medicine for Aug.*; and *Bulletin Générale de Thérapeutique for May.*)

M. Forget, after passing in review the different means used in the treatment of ophthalmia, directs particular attention to the use of cold applications, and occlusion of the eyelids.

The use of cold water he believes to be beneficial in almost all cases of ophthalmia. The application must be permanent, frequently renewed, and continued until the symptoms have completely disappeared. The addition of vinegar, acetate of lead, alum, &c., is almost useless. He has seen good effects result from this treatment in cases of simple injection, in severe inflammation, pain, photophobia, and even in ophthalmic blennorrhœa. Even in cases where topical applications are ill borne—in ophthalmia with relaxation of the tissues—the employment of cold water may still be useful.

This remedy necessitates occlusion of the eyelids; and M. Forget

doubts whether the benefit is not really owing to this circumstance. In many cases simple occlusion is sufficient, but cold applications are a useful adjunct where there is much redness, heat, pain, and swelling. The advantages of occlusion are, that the organ is kept in a state of repose, protected not only from light, but from the air and from foreign bodies; that the eye is maintained in a state of equable moist heat; and that the eyelids are made to exercise a mild, equal, permanent, *natural* compression on the inflamed parts. M. Forget relates some cases of severe ophthalmia, in which occlusion was tried with marked benefit, sometimes after the usual remedies had been employed without effect. It is sufficient to keep only the affected eye closed; a bandage is the best means. In cases of rheumatic, scrofulous, or other specific forms of ophthalmia, other means may also be necessary. When there is much muco-purulent secretion, it will be necessary to cleanse the eye carefully.

ART. 61.—*A New Mode of Operating in Strabismus.*
Under the care of Mr. CRITCHETT.

Medical Times and Gazette for Oct. 2.)

In the following case, which was under the care of Mr. Critchett, an original and successful expedient was resorted to for the relief of a deformity, which had resulted from a previous operation, and was too great to be remedied in the ordinary way.

Samuel Rice, a sailor, aged 25, acquired, in consequence of convulsions during childhood, a convergent squint of the right eye. Twelve years ago he submitted to operation in a provincial town, when the internal rectus was freely divided, with the ultimate effect of changing the squint into a severe divergent one.

On admission, July 25, 1842, the whole eyeball was much more prominent than that of the opposite side; the nasal canthus was unnaturally large and smooth, and the eye was directed outwards to such a degree, that he could make no use of it whatever.

Mr. Critchett first divided the external rectus freely, and next cut through also the internal rectus, somewhat further back than usual. The cut extremities of the latter muscle were then brought together by three fine sutures, in such a manner as to shorten it considerably,—the orbital portion being made to attach itself to the globe much further forwards than before. When the operation was finished, the eye looked decidedly inwards.

The sutures were left to drop out of themselves, which they did in about a week. During that period there was a moderate degree of inflammation of the conjunctiva, which afterwards subsided. When last seen, September 18th, the axis of the eye was directed straight forwards, the scars left by the operation were scarcely visible, and, excepting a slight undue prominence of the globe, all deformity was removed. The improvement in his personal appearance was most satisfactory. His vision, however, though much better than before, remained imperfect; he could see large objects, but could not distinguish type sufficiently well to be able to read.

In the performance of this somewhat delicate operation, it is necessary to insert the sutures as far as possible from the cut edge of the muscle, otherwise they will tear out. This is especially required in the case of the posterior portion, for in front the tendon and cellular tissue, and even the conjunctiva, if necessary, give good attachments. The division of the antagonist muscle must on no account be neglected.

ART. 62.—*Observations on Morgagnian Cataract, with Cases.* By W. R. WILDE, Esq., F.R.C.S., Surgeon of St. Mark's Ophthalmic Hospital, Dublin.

(*Medical Times and Gazette for Oct. 2.*)

[In this paper Mr. Wilde gives four cases of this very rare form of cataract, a form which consists mainly in an altered state of the fluid existing between the lens and its capsule, and he inculcates the expediency "of extracting at once, in all similar cases, as the presence of the fluid portion of the cataract in the anterior chamber for ever so short a time seems to produce a most deleterious effect." Two of these cases are subjoined:]

"The following case occurred in the person of an old woman, who presented at the hospital on account of blindness, which, she said, had been coming on for a couple of years. The left eye had previously suffered from internal inflammation, and the pupillary edge of the iris was completely attached to the front of the capsule of the lens, which was quite opaque. Upon the right side there was a muddy, grey opacity behind the pupil, which advanced flush up with its edge, so as not to leave the usual shadow seen in most cases of cataract. Upon dilating the pupil, a dark orange-coloured cloud, which altered its position from time to time, but finally subsided towards the bottom of the capsule, was then plainly discernible. When the eye had been for some time at rest, the amber-coloured nucleus of the lens having fallen forward against the capsule, confirmed the diagnosis that this was a case of Morgagnian cataract. In this instance, I determined to try the effect of opening the capsule, and allowing the opaque fluid or broken-down lens to be absorbed before I proceeded to extract the nucleus. I, therefore, introduced a needle through the cornea, and freely lacerated the capsule, which was quite transparent. The opaque matter spurted into the anterior chamber, rendering the aqueous fluid turbid and of a milky hue. After a short time the colouring matter gravitated to the bottom of the chamber, as if it was not quite miscible with the fluid of that cavity, and then the dark amber-coloured lens could be distinctly seen behind the pupil, which had contracted during the operation. Violent inflammatory action, characterised by intense orbital pain and some irritability of stomach, ensued during the night, for which the patient had to be cupped, and have a full opiate. In the course of a few days all these symptoms subsided, the redness disappeared, and the patient left the hospital. At the end of six weeks she was readmitted. Having made the upper section of the cornea, I extracted the lens by simple pressure in the ordinary manner. No inflammation followed, and the

woman recovered perfect vision, but died of cholera about a year afterwards.

“With respect to the pain and sickness of stomach which ensued on giving exit to the fluid portion of the cataract in this case, Mr. Dalrymple’s work, already alluded to, contains the following accurate observation:—‘There are some peculiarities which belong to this variety which it is necessary to mention. If an opening be made into the capsule, as in the operation of keratonyxis, we see the opaque fluid escape, and render turbid that of the anterior chamber. In a few hours after the operation, the patient is seized with nausea and violent vomiting, and with intense ocular or frontal neuralgia. (In one case, I remember to have seen the vomiting and neuralgia continue almost unremittingly for three days.) Upon what circumstance these phenomena depend, is wholly unknown to us. That it must, however, be closely connected with the poisonous presence of the contents of the capsule in a cavity in which absorption and reproduction are always going on, does not admit of a doubt; for, if such a cataract be removed by extraction, in which case the capsule generally escapes entire, no such state follows.’ In this latter observation, however, I cannot agree, as the capsule was not extracted in any of the four cases on which I have operated.

“Another case occurred during the present year in the person of a man aged 65. He was blind in both eyes; in the left there were evident traces of previous inflammation; the iris was altered in colour and structure, and its whole pupillary margin firmly attached to the capsule of the lens. On the right side the eye was more healthy, the iris natural, the pupil mobile and unattached; the lens was opaque, and of a peculiar uniform, dull, homogeneous drab colour. I suspected that this was a case of partially fluid cataract, but it did not at any time, even when the pupil was artificially dilated, present the appearance of Morgagnian cataract. In order to test the consistence of the lens, I introduced a fine needle through the cornea, and, having incised the capsule, found my suspicions confirmed, for a muddy, brownish-coloured fluid immediately rendered turbid the aqueous humour. Having already had experience of the consequence of allowing this irritating material to remain in the anterior chamber, I immediately allowed it to escape by introducing the grooved knife as in the former case. Upon the chamber becoming clear the brown lens was then seen completely filling the pupil. Six hours after the operation, violent pain came on, attended with the usual symptoms of internal inflammation, and accompanied by vomiting. Upon examining the eye, the aqueous fluid was found to have been regenerated, and there was no dislocation of the lens. The usual treatment was resorted to, consisting of local depletion, opiates, camphor, and the application of belladonna to keep the pupil dilated and prevent adhesion. In the course of a few days, a secondary attack of inflammation, chiefly engaging the sclerotic and iris, came on, for which tartarised antimony, calomel, and opium, in small and frequent doses, had to be administered. Under this treatment and occasional blistering, the iris resumed a healthy appearance in about two months. At the end of the ninth week, I proceeded to extract the lens, which proved

to be of the usual diameter, but thinned from before backwards, and, like that in the third case recorded, was remarkably smooth and polished on its surface. I made a full section of the upper segment of the cornea, on completing which a greater quantity of fluid was evacuated than could possibly come from the anterior chamber. It was also of a glutinous consistence, and continued to pour from the eye each time the pressure was made to evacuate the lens, evidently showing that the vitreous humour was fluid. I therefore passed the curette underneath the pupillary edge of the iris and behind the lens, and, by turning its curved point forwards, fixed it in the lens, and drew it forth without difficulty,—a manœuvre to which I resorted in the first case, as previously described. This man recovered without a single bad symptom, and returned to the country with very good vision."

ART. 63.—*New Instruments for Cataract, &c.*; by (1), M. GERDY; (2), M. LANGIER; and (3), Dr. FURNARI.

(1. *Gazette Médicale de Paris.* 2. *L'Union Médicale.* 3. *London Journal of Medicine.*)

1. *Instrument for depressing the Lens.*—M. Gerdy of La Charité, with the aid of M. Charrière, junior, has lately invented a cataract-needle, which is not unlike that invented by Mr. Bowman. It consists of a split needle; the two halves of which are connected by a collar attached to one of them. On moving this collar downwards, by the fore-finger, the attached half slides with it, and the point of the needle becomes double; on pushing it backwards the point again becomes single. In this way the point is made to have a scissor-like action. A further peculiarity is that the handle fits into the needle by a bayonet joint, so as to allow the needle to be removed, and the blades separated, and cleaned with facility. The accounts of the two following instruments are taken from the *London Journal of Medicine*.

2. *Instrument for depressing the Lens and dividing the Cornea.* By M. LANGIER.—Almost every surgeon must have experienced the inconvenience of the ordinary cataract needles, with a fixed point. Displacement of a fragment of the lens, or of a portion of the opaque capsule, can only be effected by making the lancet describe extended arcs of circles, having as a centre the point of the sclerotic traversed by the instrument. The extent of these arcs leads to too great lacerations of the hyaloid membrane, and sometimes even to injury or detachment of the iris. M. Langier believes that these difficulties and dangers may be partly avoided by articulating the point on the stem of the needle, the point being moved by means of a lever in the handle, like the key of a flute. By means of this modification, the centre lens, or a portion of its capsule, or false membranes, may be readily removed from the field of the pupil. It may be introduced quite straight into the eye; and, when arrived in front of the cataract, may be placed at any angle which the operator may desire, and is susceptible of alternate extension and flexion, according to the object which it is proposed to attain. The motion of the point resembles that of the third phalanx of the fingers; and it would be very easy to make

an instrument with two joints, which, however, M. Langier has not yet found necessary. With a single joint, the movements of flexion and extension of the point may be subservient, to a number of purposes, such as in breaking up the cataract, tearing through its adhesions, and even forming artificial pupil, either by tearing down adhesions, or by detachment of the iris.

M. Langier has also combined with the jointed needle a concealed cornea knife, by which he believes that the section of the cornea will be made more surely than with the scissors of Richter or others. This keratotome, at the end of which is the articulated point, is a little larger than the ordinary needle. It is much like a lithotome with a single blade; but the blade is not contained in a sheath, which would uselessly increase the size of the instrument, but it is merely applied to another blade, with blunt edges, which cover it, and which contain the spring for moving the point of the needle.

In operating, a large opening may be made in the capsule by the point of the needle, which is directed towards it through the dilated pupil. It will then penetrate the lens, and bring it, either by the movements which may be communicated to it, or by simple pressure above or below, into the anterior chamber. In withdrawing the instrument by the passage by which it has entered, the blade of the keratotome separates from the flat stem on which it lies, and incises the cornea, for a fourth, or third, at most, of its diameter. This incision is long enough in most cases. One advantage of the concealed cornea knife, M. Langier states to be that of incising the cornea from within outwards, so that the deep layers of the membrane are cut to the same extent on the superficial.

3. *Instrument for depressing the Lens and for the formation of Artificial Pupil.* By Dr. FURNARI.—The principal application of Dr. Furnari's instrument is to entirely remove adherent portions of the capsule, and thus prevent the formation of secondary cataract.

The needle, fixed in an ivory handle, is of the same size as Scarpa's; it consists of a stem ending in two perfectly equal branches, which unite to form a slightly-curved point, and having their internal surfaces toothed, to seize the pieces of opaque capsule. A sheath, extending into the interior of the handle, accompanies the needle as far as the base of its point. The instrument is moved by means of an apparatus in the handle. By pressing on the lever the sheath is withdrawn into the handle: the needle then separates, seizes and detaches the opaque bodies which obstruct the pupil, and, when the thumb is removed from the lever, the needle again closes, forming a true forceps. The advantage in this instrument is, that pressure on the lever opens the blades of the needle, by which it is rendered more easy of appliance than when constant pressure is required to keep the instrument closed.

Dr. Furnari also describes a forceps-knife (*conteau pince*), and a forceps-curette (*curette pince*), on the same principle.

ART. 64.—*A Rhinoplastic Operation upon the Face, in which a new method of counteracting the contractions of the Cicatrix was carried out successfully.* By Dr. F. H. HAMILTON, (U.S.)

(*Canada Monthly Journal for March. Buffalo Monthly Journal.*)

[The following operations—both of which are well deserving of attention, but the second particularly so—were performed upon a little boy, Martin Neuman by name, who had lost his entire lower lip and the greater part of the corresponding jaw, and with them the power of retaining his saliva and masticating his food. Dr. Hamilton writes as follows:]

"*First operation for the restoration of the lip.*—Jan. 14, 1850, in the presence of the class at the Medical College, I abraded the upper edge of the skin corresponding to the lower lip, to the extent of a quarter of an inch each way from the centre; from either extremity of this horizontal incision, I cut perpendicularly about one inch, and then starting from the lower end of these incisions, I carried the knife outward and downward to the left, and outward and downward to the right, one inch and a half. The two lateral pieces thus marked out, were now dissected from the jaw and slid upward and drawn together with sutures above the central piece; the lower edge of the lateral pieces thus united were stitched also to the upper and abraded edge of the central piece.

"The object in leaving a central piece attached to the jaw, and uniting the lateral pieces above it, was to prevent the lateral pieces, which were to constitute the new lip, from drawing down again by the contraction of the wound below. The plan was original, I believe, and proved successful. The lip, however, became, in process of time, through stretching and sinking, insufficient; and I made a second operation to increase the depth of the lower lip, and prevent more effectually the saliva from dribbling from the mouth.

"*Second operation,* Aug. 28, 1850, at my office, in the presence of Drs. Samuel Carey, Camp, and others. My mode of procedure was entirely new, and, as I believe, has established an important principle in this class of operations. The operation was as follows: A single incision was made just under the chin, extending along the lower edge of the inferior maxilla about three inches from side to side. All the integument comprised between the horizontal incision and the upper edge of the lower lip was now raised from the bone, and the entire mass slid upward until its lower edge was made to correspond with a line just below the upper border of the jaw. Here this edge was made fast to the *periosteum*, by several interrupted sutures. The gaping wound below was left to close by granulation. The result has been, that adhesion occurred between the lower edge of the flap, thus secured, and the periosteum, and no disposition was afterwards shown in the flap to draw downward as the wound cicatrised; but, on the contrary, the skin from below, that is, from under the chin and the neck, was somewhat drawn upward, and thus between the formation of new skin and contraction from the skin below, the wound closed.

"The new principle established is, that *by attaching the skin directly*

to the PERIOSTEUM, its displacement by cicatrisation and contraction is prevented. Every one who has operated for restoration of the lower lip, will see the advantages which this plan offers. There is nothing to which the upper, free border of the new lip can be attached, and there is consequently nothing but the mere transverse tension of the lip, to prevent its descending as cicatrisation progresses below. This tendency I sought to avoid in the first operation, by leaving a central piece untouched and adherent to the bone, and then bringing the new lip above it. But this procedure requires a sacrifice of a portion of the transverse diameter of the lip, and is often wholly inadmissible; and always objectionable, if the same end can be attained by another mode. This new mode, as we have demonstrated, prevents the sliding downward, without sacrificing any portion of the lid. These remarks are applicable especially to cases of *complete* loss of the lip. Where only a portion is lost, various other methods of supplying the deficiency may be practised; as by stretching the lip, or sliding from the cheeks, or even by an operation of 'torsion' from the cheeks.

"This idea originated in having observed elsewhere the capacity of periosteum to form skin. I have several times proved, contrary to the often repeated doctrine, that skin may form *de novo*, independent of old skin: as where there has been an extensive destruction of the integuments over a bone—where the parts have been torn away, or have sloughed, quite to the periosteum, and, consequently, no old skin could have been left from which the new could form, except at the edges: yet new skin formed in the oasis, and gradually spread outward in all directions. But this has always been where the periosteum was actually exposed, which first becoming white and spongy, has soon shown itself to be a nucleus of a new skin—in fact, it has become *itself converted into skin*, remaining ever afterwards depressed, immovable, and adherent to the bone at that point.

"The result of the case of the lad Neuman is, that he has a lower lip, sufficient to cover the gums and a part of the bodies of a set of artificial teeth. The lip is narrow, for we have not yet been able to prevent the contraction and rolling in of the upper edge as it heals, but it would certainly have been much narrower, or entirely lost, if the adhesion to the periosteum had not been effected.

"I will not omit to say, that by the constant effort to use the lower lip, or perhaps simply by the lapse of time, the lip has very perceptibly lengthened in its vertical diameter during the last six months."

ART. 65.—*Observations on a Case of Complicated Hare-lip, and the Method of Treating it.* By R. QUAIN, Esq. F.R.S.

(*Medical Times and Gazette for July 31.*)

[The following case possesses some novelty, both as to the nature of the malformation and the manner of operating. It is thus told:]

"The child was a female, two years and a half old, large of its age, and not unhealthy-looking. The deformity was an example of double hare-lip, (according to the incorrect designation in common use,) and of the worst kind. In addition to the ordinary malformation in such

cases, the central piece of the lip was out of the line of the lateral pieces. It hung from the septum, near the point of the nose. When the case was shown to me, that fragment of the lip was unsupported behind, but it had not been originally so. The bone which supported it had been in part removed; of this the remaining bone bore evidence in its roughness, and it wore at the time an unhealthy aspect. This outline of the case gives us not only the most extensive form of hare-lip, but likewise a complication calculated to add materially to the difficulty of the treatment. For while, in the ordinary states of the deformity, whether there be one fissure or two, the several parts serve for the construction of the lip, and they are brought into connection over a comparatively short space,—in the case before us, the central piece was so placed, that if it were united in the usual way with the lateral pieces, these being drawn forward to its level, the upper lip would be brought into unsightly connection with the point of the nose, and the nostrils would probably be in a measure obstructed. Again, it was evident (and it was proved in the operation) that the central part of the lip, when carried back to the level of the lateral pieces, would not have had sufficient length to join with these in their natural position. In short, it was necessary to construct the lip from the lateral pieces only; and these, therefore, instead of being drawn inwards to the middle of the corresponding nostril, as in other cases, must have been brought to unite together beneath the septum nasi. If, now, the central tubercle be put out of consideration, and the edges be supposed to be removed from the lateral pieces sufficiently for the purposes of the operation, it will be plain that the remaining fragments of the lip were very narrow, at the same time that the void they were eventually to cover, and the space over which they must have been drawn so as to be brought into contact, were proportionably very considerable, and it will be equally plain, that something more than the ordinary method of performing the operation was necessary in such circumstances.

“It was necessary, first of all, to detach the lip at each side freely from the maxillary bone,—much more freely than is ever required in ordinary cases. This process, in itself, would probably have enabled me to draw the two pieces of the lip together towards the lower, the unattached edge. Not so, however, the upper part; in order to make this sufficiently free, its connections must have been further separated. For accomplishing this purpose two plans occurred to me. One of these was, to carry an incision on each side straight outwards, on a level with the lower edge of the nose, for half an inch or thereabouts. The other plan consisted in making short curved incisions upwards, along the outer borders of the *ala nasi*, (one on each side,) and in removing, at the same time, a narrow slip, in the course of each incision, in order to leave sufficient room for the lodgment of the *ala* when the lip should be moved inwards. Either of these plans would, in my judgment, have allowed of the junction of the parts without undue stretching; but I preferred the latter, believing that the marks of the incisions would probably be the less perceptible, and especially that this plan would allow of the nose being made more symmetrical. It may be added here, that, in the operation, having found that the

nares were but little disarranged when the sides of the lip were brought together, after one incision had been made on each side, I did not form grooves for the outer borders of the *alæ* as I had proposed. This part of the plan, however, remained in reserve, if afterwards it should seem to be necessary to resort to it.

"The thick fleshy tubercle depending from the nose near its point was disposed of in the following manner:—After being thinned at its back part, it was turned back to the under surface of the septum. Its point then reached the seam between the side pieces of the lip, but did not pass down between them. The cicatrix of the lip was, therefore, a single straight line, not Y-shaped, as is customary in cases of the so-called double hare-lip.

"It is unnecessary for me to enter into the details of the operation, as in all respects but those already alluded to it was conducted in the ordinary way.

"In managing this case I derived essential assistance from the supporting spring which has lately come into use. This encircles the head from behind, and the two ends, furnished each with a pad, rest upon the cheeks, which are thereby supported in the position given to them. All dragging or stress upon the sutures is thus prevented; and pressure upon the lip, whether from the bones behind or otherwise, is guarded against.

"But to return to our case: its progress was in every way most satisfactory. Direct union took place over every part except at one point at the upper end of the main cicatrix of the lip, close to the septum nasi; and here the granulations (which were little more than the extent of a pin's head) were skinned over in a couple of days.

"At first the lower lip seemed loose, as if too long. This appearance was observed, even when the spring was first applied, two or three days before the operation,—during which time it was kept on in order to accustom the child to its pressure, and to regulate this. In about a week the appearance adverted to ceased; and now, on close examination, it is observable only, that the upper lip is not as loose over the gum as it is in the natural conformation of the parts. It is not in any degree notched, and the improvement effected in the child's appearance is very striking."

ART. 66.—*On the Injurious Effects arising from the Manufacture of Lucifer Matches, as observed in the neighbourhood of Manchester.*
By JAMES BOWER HARRISON, M.R.C.S.E., formerly House Surgeon to the Hardwick and Ancoats Dispensary.

(*Dublin Quarterly Journal of Medical Science for March.*)

In this paper Mr. Harrison furnishes us with additional evidence of the fact that "when this trade is practised *under disadvantageous circumstances*, the most formidable and appalling evils arise from it. An affection ensues which is so insidious in its nature that it is at first supposed to be common toothache, and a most serious disease of the jaw is induced before the patient is fully aware of his condition. The disease gradually creeps on until the sufferer becomes a loathsome and

miserable object, spending the best part of his life in the wards of a public hospital, and these evils are incurred for a remuneration of six or eight shillings a week. Many patients have died from the disease; many, unable to open their jaws, have lingered with *carious* and *necrosed* bones; others have suffered dreadful mutilations from surgical operations, considering themselves happy to escape with the loss of the greater portion of the lower jaw.

"The period necessary for the production of the disease must obviously depend on various causes, particularly on the constitution of the employed, as to whether it is scrofulous or otherwise; something also will depend on the condition of the teeth, whether carious or sound; also on habits of cleanliness; and the department in which the person is engaged. It will be seen, however, to range generally from two to six or eight years, but in some cases mischief did not arise before eleven or more, so that immunity for a considerable period should not render us certain that no danger is to be apprehended. Dr. Strohl* mentions several cases which occurred after various periods; the first case, which was fatal, happened in a female, it is stated, after *many years'* employment. The second also is a female, *æt.* 24, who was a dipper; the disease came on after five years of occupation, and commenced *three months after she had left*, when eight teeth became rapidly carious; the upper jaw became diseased as well as the lower, and the purulent matter had the odour of phosphorus. The third case, a female of 22, occurred after two years' employment; her health had continued good until the last two months of her engagement; the gums then began to soften and swell, violent pains came on in the teeth of the upper jaw, the teeth became *carious* and fell out, a fetid suppuration arose, and the bone became extensively diseased. The next case was likewise in a young woman of 22. Her department was to make up the parcels, but *this was done in the same room where the matches were dipped*; at first she experienced a defluxion from the nose; after three years the face began to swell, and she left the business; the upper jaw became carious after the formation of an abscess. M. Sedillot, of Strasburg, relates three cases which came on after about four years, all females, one died. In the manufactories at Vienna, cases did not occur until the employment had been pursued for eleven years. Again; in Mr. Taylor's cases reported in the 'Lancet' in 1849, the first patient, a man of forty-nine, had been engaged eight years; and the second, a man of forty-five, had been fifteen or sixteen years in the employment."

[Unfortunately there is not as yet much evidence to show the amount of good attendant upon prophylactic measures, but that this is by no means inconsiderable, may be gathered from the following passage.]

"Dr. Ebel has furnished an account of five years' experience in the factory at Waldmichelberg, as well as a digest of what has been previously written on the subject. In the factory, where his observations were made, about 200 individuals were employed, and these were male and female indiscriminately, chiefly between fourteen and eighteen

* American Journal of Medicine, 1846.

years of age. The hours of occupation were from five to seven, two being allowed for meals, the meals not being taken in the work-place. Attention is also paid to the health of those admitted into the establishment previously to their being engaged. There is less wonder, therefore, that the place is stated to be free from disease. It appears that caries of the teeth is common in the neighbourhood, but not more common in the establishment than elsewhere. Out of 200 persons 153 had some carious teeth. Dr. Ebel states that the health of the persons in the factory was, on the whole, better than that of those who were in a similar rank of life out of the employment, and that, after a few years, an improvement was remarked in their condition. The work, he says, is not laborious, and the rooms in which it is conducted are spacious."

[On the whole, as Mr. Harrison remarks, this report is very favorable; but perhaps a little premature, for the proprietor does not seem to have had more than eleven years' experience. It shows, however, how much may be done by a good system of ventilation and cleanliness, with spacious rooms; and leads us to suppose that still more may be expected when other hygienic measures are properly carried out—as the placing of vessels filled with turpentine, or strong alkaline ley, in the workshops, for the purpose of absorbing the phosphorus fumes,—the wearing of masks in the process of "dipping," and the adoption of some contrivance by which the dipper is enabled to stand at some distance from the molten composition,—and so on.]

ART. 67.—*Ablation of the Tongue by Subhyoideal Incision.*
By M. GIAMATTEI.

(*Gazette Médicale de Paris* for July 10. *Gaz. Med. Ital. Toscana* for Nov., 1851.)

The operation performed in the following case differs from that of Regnoli in three important particulars;—1st. In boldly cutting through the tongue, and then tying the lingual artery by itself, instead of including the whole mass of the tongue in the ligature; 2d. In dispensing with the use of the cautery; 3d. In endeavouring to procure union by the first intention in the external flaps.

The case.—A woman in her fifty-fifth year, of good constitution, was admitted into the hospital of Lucca, for the removal of a carcinomatous tumour of the tongue. The first steps of the operation were those laid down by M. Regnoli; the flaps were dissected back, the incision carried through into the mouth, and the tongue drawn through the opening down upon the anterior part of the neck. The diseased mass was then excised by a semi-elliptical incision, and a ligature placed upon the lingual artery. Then a portion of the anterior pillar of the fauces, which was found to be diseased, was cut away with a probe-pointed bistoury,—in doing which the hæmorrhage was such as to require the application of the actual cautery. And, lastly, the remains of the tongue were returned to the mouth, and the flaps fixed in their proper position by interrupted suture.

The result was very successful. The wound in the integuments healed by first intention, and without any difficulty. On the second

day, it was possible to swallow some tablespoonfuls of soup; and on the fourth to chew and speak. In a fortnight the patient was well.

ART. 68.—*Treatment of Bronchocele by Ligature of the Thyroid Arteries.* By M. PORTA.

(*Annali Univ. de Med. Rev. Méd.-Chir de Paris, May.*)

The superior thyroid has been tied in many cases of bronchocele, but the following case is the first in which the superior and inferior thyroid were tied at the same time:

The patient, a peasant between 17 and 18 years of age, was admitted into the General Hospital at Pavia in July, 1850, for a circumscribed, rapidly-growing goitre of the left side of her neck. The case was considered a favorable one for the double-ligature, and that operation was performed on the 28th of the month.

The incision was that for tying the common carotid. Then the cellular tissue towards the inferior part of the opening was broken up with the finger, and the inferior thyroid felt beating between the trachea and the trunk of the common carotid. The ligature was passed by one of Lawrence's needles and tied. The superior thyroid was then secured without any difficulty, as its course lay superficially across the upper angle of the incision.

The issue of the operation was a little retarded. First an abscess formed, and after this there was an obstinate hæmorrhage from the neighbourhood of the superior thyroid, so that the wound had not cicatrised until the end of October.

The cure, however, was complete: indeed when the wound healed there was neither tuberosity nor rigidity, and the neck had recovered its natural dimensions. The account further goes on to say that there was no return of the malady six months afterwards.

ART. 69.—*A New Mode of Abstracting a Foreign Body from the Larynx after Laryngotomy.* By DR. MAY, Professor of Surgery in the National Medical College, and one of the Surgeons to the Washington Infirmary.

(*American Journal of Medical Science for April.*)

[The following case is one of a series illustrating the extraction of foreign bodies. It is calculated to show that in some instances it may be better to use a probang, and push the foreign body back through the larynx into the throat, than to persevere in abortive attempts to extract it through the wound by forceps, scoops, or other contrivances. It is thus told:]

"On the 20th of May, I was desired to see a boy, five years of age, in Georgetown, for the purpose of extracting a grain of coffee, supposed to have entered the wind-pipe. On the 14th, while running about the room, he was suddenly attacked with a very severe fit of spasmodic cough, and he at once told his father that he had *swallowed*

the coffee which, a few minutes before, had been seen in his mouth. The cough, I was told, was soon followed by difficult respiration, which at times, though very distressing, was succeeded by such intervals of calm and quiet breathing, and moderation in the urgency of all the symptoms, that the physicians who had previously seen the child thought that the foreign substance might have been expelled in the efforts of coughing; at the period of my visit, however, six days after the accident, the symptoms had so increased in severity that it was very evident to all the little patient could not long survive unless he obtained speedy relief. The dyspnœa was extreme, the mother being obliged to hold him up constantly in her lap to assuage it, and he had scarcely slept at all for forty-eight hours.

"Throughout the lungs and trachea there was a strong mucous rhonchus, the lips and neck were livid, and there was continually a frothy discharge from the mouth. The superior lobes of the lungs, at every inspiration, projected much above the clavicle. The external jugular veins were greatly distended, and the inferior extremities were cold up to the knees, although they had been repeatedly placed in hot mustard baths.

"It was, in fact, plain that effusion must soon take place; I therefore lost no time in opening the larynx.

"An incision was commenced near the *os hyoides* and extended downwards about an inch and a half. The sterno-hyoid and thyroid muscles were separated, and the hæmorrhage, which, from the congestion of the parts, was freer than I anticipated, was arrested by compression with a sponge for a few minutes.

"The crico-thyroid ligament and the cricoid cartilage were then divided, and the incision was also carried slightly upwards into the thyroid, making in all an opening of about half an inch. As soon as this was done, a large quantity of yellow mucus was ejected through it by a sudden attack of the cough. It was so considerable, and it so much resembled pus at the first glance, that one of the gentlemen present thought an abscess had been opened. This, however, soon ceased, and the little patient was breathing through the wound as quietly as possible; the lips became red, and in a few minutes after the operation he fell asleep upon the table, the most perfect relief being afforded by the opening in the larynx. The foreign body could not, however, be discovered; but the moment the wound was closed with the fingers, the difficult respiration and the cough instantly returned as violent as before. I was satisfied that it was either lodged in one of the laryngeal pouches or about the *rima glottidis*. A probe, curved, and wrapped with a soft piece of linen, was repeatedly passed to the upper part of the larynx with the hope of detaching the foreign body, but without success; and, finding that considerable irritation was produced by such efforts, I determined to leave the wound open until the next morning, in the hope that it might be expelled in the interval. At my visit the next day, I found the child perfectly comfortable and surrounded with his playthings. He had slept quietly all night, and was still breathing calmly through the wound; but, on closing the opening with the finger, the dyspnœa and cough, in all their violence, instantly returned.

"On my return home the previous evening, I prepared a small whalebone probang, the sponge of which was calculated to fit the larynx rather closely, and thus to force anything it might encounter past the epiglottis. This I now introduced through the wound, and forced it up until, by looking in the mouth, I saw it pass the epiglottis. This was again repeated, and the instrument extracted. I now found I could close the wound perfectly without any recurrence of the cough or the least embarrassment in the respiration. I therefore brought the edges of it closely together by means of a single suture and adhesive plaster, and the little patient continued to breath calmly by the natural passage. Two leeches were directed to be placed on each side of the larynx; and being perfectly satisfied that the obstacle had been dislodged by the probang, and had fallen back into the pharynx and had been swallowed, I ordered a table-spoonful of castor oil to be given, and requested that the evacuations produced by it should be carefully examined.

"This opinion proved to be correct, for the grain of coffee was found entire in the first discharge caused by the purgative. The wound granulated and cicatrised kindly, notwithstanding the manipulations to which it had been exposed; and the child was soon about and well, with the exception of a hoarseness and roughness in the voice, which continued several weeks and then gradually subsided."

ART. 70.—*A New Method of performing Tracheotomy.*
By Dr. C. GERSON.

(*London Journal of Medicine*, Oct. *L'Union Médicale*.)

For the performance of tracheotomy, Dr. Gerson has contrived an instrument consisting of three moveable branches, which join at the end, so as to form a sharp point, and can be separated by means of a vice at the other extremity of the cone. By turning the vice from left to right, the branches diverge and form a cone, of which the base is turned towards the wound, and which thus resists the tendency of the cartilages to expel it from the aperture.

In operating, an incision of two or three *centimètres* (four fifths of an inch to one and one fifth) is made through the skin, the veins are put aside, and the incision, gradually diminishing in length, is continued until the space between two of the cartilaginous rings can be distinctly felt with the nail of the fore-finger. The trachea is then fixed; and the instrument is glided along the nail of the left fore-finger, and is made to penetrate into the space between the rings for about three or four *millimètres* (about one seventh or one ninth of an inch). An expansion about a quarter of an inch from the point, prevents the instrument from penetrating too deeply. The instrument being held steadily, the handle of the vice is now turned, and the branches of the instrument caused to diverge. When the opening is sufficiently wide to allow the canula to pass between the branches of the instrument, it is introduced into the trachea. The loss of blood is inconsiderable; and the air escapes with so much force, that it would expel every drop which might be inclined to enter the bronchi.

2. *Of the Chest, Abdomen, and Pelvis.*ART. 71.—*Incipient Angular Curvature of the Spinal Column.*

By M. DUVAL.

(Révue Médico-Chirurg. de Paris, Aug.)

In this paper, several cases are related which go to show that the earlier symptoms of this affection have all the protean uncertainty of those belonging to spinal irritation. The following symptoms, however, are of some diagnostic value.

The first mentioned is, a zonular sense of pain and constriction around the waist during fasting or exercise, and especially at night. This is sometimes so marked as to cause the patient to wake more than once in his sleep, and to keep him awake for some time afterwards. The precise seat of this feeling varies with the vertebra, or vertebræ, which happen to be affected. If in the chest, the respiration is often considerably interfered with. Sometimes the feeling of pain and constriction amounts to positive spasm.

The gait is peculiar. The trunk is stiff, and tilted backwards; the arms drawn to the sides; the shoulder-blades approximated, as if the spine were ankylosed. Sometimes, also, there is a slight lateral twist, which always remains the same, even at night.

Local spinal pain, increased on motion and by pressure, with feebleness of the muscles of the back and limbs, are of great value.

ART. 72.—*Case of Thyroideal Hernia.* By J. TEBAY, Esq.*(Med. cal Times and Gazette, Sept. 11.)*

[Cases of this form of hernia have been published in our former Volumes, but they are so rare and difficult of diagnosis, that every additional example becomes of value. For this reason we record the following:]

“Mrs. A—, aged 70, a spare and tolerably healthy subject, required my attendance on January 5, 1852, she having suffered constant pain in the hypogastric region for the preceding three days, accompanied the last twenty four hours, by frequently vomiting large quantities of green and yellow bilious fluid, as also of all ingesta. On seeing her there was tenderness, but no tension, of the abdomen. The tenderness was most marked in the left hypochondriac region, where there was some fulness and a sense of dulness; the tongue was clean; pulse 90. The bowels had been confined for the last four days, a frequent occurrence with her for the last three years, and for the removal of which she had never been in the habit of taking any aperient medicines.

“On the evening of the same day, vomiting of pea-soup character and faecal odour occurred; and on the following morning the countenance became sunken; pulse 126, feeble; hands cold and clammy; the stomach retaining no ingesta. In the absence of any indications

of hernial protrusion in the femoral or inguinal regions, which were repeatedly examined (there being also no perceptible tumour in the vagina), I requested Dr. Basham to see her. He suggested aperients and enemata, the latter being repeatedly and slowly given, and which were usually retained from twenty to forty or fifty minutes, but returned with slight alteration, on one occasion only scybalæ in trifling amount coming away. The symptoms recurred with variable severity, an immense amount of fecal fluid being ejected from the stomach, little or no pain existing, no action of bowels, and gradually increasing collapse, in which condition she died, on the fifth day from the occurrence of stercoraceous vomiting, and the ninth day from her first complaining of abdominal pain.

Autopsy Thirty-six Hours after Death.—On opening the peritoneal sac (which contained no fluid) the stomach appeared relaxed, and of great size, covering the intestines, its greater curvature extending nearly to the os pubis. The rectum and almost all of the colon were extremely contracted, in some portions resembling a small white cord; several feet of the small intestine, principally ileum, were greatly distended with flatus, highly vascular, and evidently in an advanced state of inflammation.

“On removing the mass of intestine from the pelvic cavity, a small portion of jejunum near its termination remained, attached by a knuckle to the obturator foramen, at the point through which the vessels emerge. On further investigation, this proved to be a hernia, small in extent, not entirely embracing the calibre of the bowel, and readily removed from its abnormal position by gentle traction; the condition of the incarcerated portion did not indicate approaching gangrene, as it retained a chocolate colour, and bore rough usage with the fingers without any appearance of injury.

“In this case it may be borne in mind, that the tenderness of the abdomen was most marked in the left hypochondriac region, and a little below that part. The opening through which the intestine had passed admitted the forefinger pretty readily, being much larger than on the opposite side.”

ART. 73.—*Treatment of Irreducible Hernia.*

By B. B. COOPER, Esq., F.R.S.

(*The Lancet*, July 19 and Aug. 7.)

[For fifteen years past Mr. Cooper has endeavoured, and, in many instances, successfully, to reduce irreducible herniæ by a long-continued recumbent position, a strict system of diet, the use of purgative and lowering medicines, the application of cold to the tumour, and the frequent employment of gentle taxis; and now he recurs to the subject and collects a number of cases, because other claims to this method have recently been urged in a French periodical. Of these cases the following will serve as examples:]

“In 1837 (writes Mr. Cooper,) a gentleman named W—, came to my house to consult me respecting his son, a lad of seventeen, who was afflicted with an irreducible congenital hernia, which had become

irreducible about two months before he was brought to me. During these two months he had twice suffered severely from obstruction in the descended bowel.

"In this case I attempted to reduce the hernia by the taxis; but failing in this, I adopted the following treatment:—I first ordered an enema to empty the lower bowels; then a purgative pill at night, with saline purgative draught in the morning. His bowels were freely opened by these means; but as the hernia still remained irreducible, I ordered that he should keep himself in a recumbent position, with his shoulders raised by pillows, and his thighs bent upon the pelvis, so that the muscles of the abdomen might be perfectly relaxed; ice was frequently applied to the surface of the tumour; he was kept upon very low diet, with the bowels moderately open. This treatment was continued for nineteen days; nothing remarkable occurred during that time; but on the nineteenth day the hernia was reduced almost accidentally by the hand of the patient himself, who was feeling to ascertain whether the tumour had diminished in size. A truss was at once applied, and from that time I never heard that the hernia had descended again.

"In 1838 a patient was sent to me by Mr. Hutchinson, of Witham, in Essex, with a large irreducible scrotal hernia; it had been irreducible about three months, during which time he had only once or twice suffered from any symptom of intestinal obstruction. The inconvenience arising from the size of the tumour was, however, so great, that he was very anxious to have any operation performed for its reduction. I recommended in this case a plan of treatment exactly similar to that last described; but in addition, as the patient was very plethoric, I ordered that he should first be bled from the arm; but either from fearing the restrictions required in my method, which I had explained to him, or perhaps from some reason connected with his avocation, (that of a farmer,) he did not at once submit himself to the treatment, although at first he appeared so desirous of doing so. After about three weeks, however, he placed himself under Mr. Hutchinson's care, and adhered to all my directions with the greatest exactness and patience. He lay for fifteen days, and on the evening of the fifteenth, Mr. Hutchinson easily reduced the hernia by gentle taxis. A truss was applied, and there was never afterwards, to my knowledge, any symptom of the hernia again returning.

"My late friend, Dr. Badeley, of Chelmsford, hearing of the result of the treatment in the last case, at the end of the same year sent me an old gentleman, who had had a scrotal hernia for four years. During this time his life had once been in great danger from protracted obstruction of the protruded bowel. I described to Dr. Badeley the treatment I had adopted in Mr. Hutchinson's case. I directed him to keep his patient recumbent, to freely evacuate his bowels, to apply ice to the tumour, and to limit him to very low diet. It was five weeks before the tumour became reducible in this case; it then went up suddenly as the patient was getting up out of a chair, in which he had been sitting whilst his bed was making. In this case, as in the others, a truss was put on at once, and, four years after, the patient told me that the hernia had never returned. I had subsequently a second

case of this kind from Dr. Badeley, which was treated upon the same principle, and terminated equally successfully. I have published an account of this case in my 'Lectures on Surgery.'

ART. 74.—*On the Radical Cure of Reducible Hernia by Injection.* By Dr. JOHN WATSON, Surgeon to the New York Hospital.

(*New York Journal of Medicine, July. New York Medical Times.*)

[The following case is similar to one recorded in p. 139 of our 13th volume, and to others scattered or collected elsewhere, but it is still rare enough to deserve quotation:]

"Joseph A. Seavell, of Ohio, seaman, aged 31, was admitted into the New York Hospital, Nov. 24th, 1851, with a large inguinal hernia, occupying the left side of the scrotum, which had been then protruding for several hours, and had resisted several well-directed efforts for reduction. The patient for the last four years had been occasionally troubled by the protrusion, but had never before been baffled in his efforts to reduce it; and by the use of a truss he had been able to follow his regular occupation. With some little trouble the tumour was reduced by taxis, soon after his admission, and on the 29th of November, having explained my object to the patient and obtained his consent, I attempted to effect a radical cure of the hernia.

"While the patient was lying on his back, with his scrotum and left spermatic cord drawn slightly towards the right side, and with the integuments over the left external abdominal ring slightly on the stretch, I introduced the point of a delicate bistoury through the integuments, directly down to the crest of the os pubis, the point of the instrument touching without dividing the lower termination of Poupert's ligament and made to work freely in the loose tissue immediately in front of the ring, but without wounding the spermatic cord. Having made the puncture and withdrawn the bistoury, the nozzle of a small syringe, charged with tincture of cantharides, was introduced through the wound, and about a drachm of this fluid injected into the bottom of the cut, the hand of an assistant, in the meanwhile, resting firmly over the inguinal canal to prevent any portion of the injected fluid from entering this, or passing through the sac into the abdomen.

"The whole procedure was the work of a few seconds, and gave the patient little or no uneasiness. I next applied a compress and spica bandage, to keep the parietes of the inguinal canal in close apposition, and administered an anodyne, keeping the patient on his back, with directions to apply an evaporating lotion, should severe inflammatory symptoms supervene.

"In a few minutes after the operation, he began to speak of pain from the injection. The sore became more troublesome, and extended for several inches in every direction, but was severest along the ascending track of the spermatic cord. He slept but little during the following night, but next morning the pain had subsided, a slight soreness only remaining in the part. The patient was at the same time suffering from chancres. I made the treatment of these the pretext for keeping him on his back, with the compress and bandage

applied as above, for several days. He spoke of no uneasiness from the operation after the second day. On the 12th of December, he was walking about without his truss, and with no apparent tendency to a recurrence of the hernial protrusion. On the following day, being desirous to join his vessel, which was about to sail for South America, he requested his discharge, promising to write to me, and report the further progress of his case, should the swelling reappear; and, if possible, to report in person, at the close of his voyage. But, as yet, I have not heard of him."

ART. 75.—*New Mode of Reducing Strangulated Hernia.*
By Dr. THOS. A. WISE, H.E.I.C.'s Service.

(*Edinburgh Monthly Journal of Medical Sciences*, May.)

[Dr. Wise writes as follows to Professor Symes:]

"The following are the particulars I promised to send you, regarding a new method of reducing strangulated hernia. While I had charge of an hospital in India, an elderly man was brought to it with a strangulated inguinal hernia. After in vain employing the usual means of reduction, I was preparing to liberate the gut with the knife, when a Mussulman gentleman suggested, that the following method should be first tried, as he had seen it successful. As it appeared most simple and effective, I at once proceeded to try it. The patient was placed upon a table, and a long sheet, folded several times on itself, was carried round the lower part of the abdomen of the patient, was twisted on itself in front, and again on the sides, so as to enable an assistant, standing on each side of the patient, to hold the extremities of the sheet, and to pull them gently upwards, or towards the patient's head, while a third assistant held the feet steady, and the surgeon used the taxis.

"As the gut immediately above the strangulated portion was superficial and distended with air and liquid, it was drawn upwards with considerable force from the hernial sac, which was assisted by the surgeon using the taxis; when the strangulated portion was immediately reduced.

"This simple method may, in a very large portion of cases, be employed with perfect safety and at an early period, before inflammation and thickening have complicated and increased so much the danger of the operation, which is thus rendered unnecessary."

ART. 76.—*Remedy for Intussusception of the Bowels.*
By Mr. A. G. BALDWIN, (U. S.)

(*American Journal of Medical Sciences*, Aug.)

[Mr. Baldwin proposes to inject large quantities of warm water so as to distend the lower bowels to their utmost capacity. He tried this plan successfully in a case which for several days had withstood a judicious and active treatment, of which two injections by means of the long tube formed a part.]

"An ivory tube, having a shield around it, was introduced and passed up until the shield was pressed up against the sphincter ani, a cloth was wrapped around this and pressed up firmly; the tube was now connected by an elastic tube with the pump, which was placed in a wash-basin of warm water, which was slowly injected into the bowels, pressure being kept up to prevent its return. Another basin of water was brought, half of which was thrown up. The abdomen was, of course, much distended by this quantity of fluid, and considerable rumbling and commotion of the bowels were produced, the pain at the point of obstruction was, for a moment, acute, causing the patient to cry out. The pressure and tube were removed, and we found he had the power to retain the injection until he could be helped to the chair, when about five quarts of the injection was passed; becoming faint, he was laid upon the bed, and brandy and water administered; he soon rallied, and passed as much more, coloured by fecal matter; soon after, a copious and regular, but very offensive stool was had, in which the oil, taken several days before, could be distinguished. After this, he had no farther difficulty, except debility, and a sensation of soreness at the point of obstruction, which lasted for a few days, when he returned to his work, that of a carriage-maker, and up to the present time he has had no return of the complaint."

ART. 77.—*Case of Stricture of the Colon, successfully treated by Operation, after Thirty days' obstruction; with an Analysis of Forty-four cases of Artificial Anus.* By CÆSAR H. HAWKINS, Surgeon to St. George's Hospital.

(The Lancet.)

The following is an abstract of the paper recently read at the Royal Medical and Chirurgical Society:

In this case a lady, aged about forty-four, was relieved by the performance of Amussat's operation on the descending colon, in August, 1851, from the effects of nearly complete obstruction in the sigmoid flexure of the colon, and continues in good health to the present time, experiencing so little inconvenience as to be able to enter as usual into society, the artificial anus being kept free by means of an ivory plug of proper size and length, the natural passage being only in part restored. The author proceeded to say, that although M. Amussat could only find six instances of artificial anus, when he brought forward his *Memoirs* in 1839 and 1841, the operation had been performed in almost every year since that time, and four persons were now living in London, whose lives had been saved by its performance, and therefore he thought that sufficient cases might now be brought together to show what was the real value of the operation in surgery. He had therefore framed tables of every published case with which he was acquainted, and of seven unpublished cases besides his own, for the particulars of which he was indebted to the operators. The tables were divided into those which had been operated on through the peritoneum, seventeen in number, and those in which the bowel had been opened external to the peritoneum, which amounted to twenty-seven

cases; and they showed the name of the operator and the date of the operation, with references to the published accounts of each case; the sex and age of each patient; the nature of the obstruction; the part which had been opened, and the mode in which the operation was performed; and the result, with the date of the death or of the last account of the case; and, finally, the cause of death and the condition of the patient, if alive. The *results* of the operations were next tabulated, from which it appeared (omitting one case in which the operation was performed for fistula) that ten had died within forty-eight hours after the operation, and twenty-one within the first five weeks; and that twenty-two only could be fairly considered as having recovered from the operation. It was next shown, that of the twenty-two which recovered, six died in about six months from the time of the operation; others were still alive, or were so at the last known date; and that only nine patients were as yet known to have survived as much as one year. Against this apparently unfavorable result the author brought forward proof that, whatever the time was that the patient had survived, the life had in every case been clearly prolonged by the operation, since Mr. Luke's case was the only one which the fæces had chiefly passed by the natural anus after the operation; in Mr. Clement's case, which lived three years, not even flatus had passed per anum; and in Mr. Maitland's case none whatever had passed naturally after the first two years, although the patient survived the operation seventeen years. A number of tables were next brought forward, but were only partially read at the Society, to show how far the results might be influenced by different circumstances. The sex of the patients did not appear to have any influence; the table of ages showed the curious fact that of eight persons not exceeding thirty, who had been operated on, no less than five had died, while of seven exceeding sixty, only two had died; but nevertheless, the age exerted less influence than might be supposed from this circumstance, since the cases below forty and those above fifty, each showed nearly an equal number of deaths and of recoveries. The table of diseases for which the operation was performed, showed that no less than seventeen were believed to be cancerous; but although the immediate deaths were slightly increased by the debility of cancer, the deaths of those that recovered were not produced at an earlier period than in non-malignant diseases. It was next shown from the tables of the assigned or apparent causes of death, both in those who recovered, and in those who died in the first five weeks, that scarcely any died of the operation, but that organic changes or other effects of the disease itself could in almost every case be clearly traced as the ground of want of success at first, or of death at an early period after the operation. The tables of the situation in which the artificial anus was made, led to remarks on the comparative propriety of Littré's or Callisen's operations, from which it appeared clearly right to operate externally to the peritoneum on the right side of the body; but the question was left undecided as to the descending colon, so far as the much smaller number of eight cases, compared with twenty, could decide the point; the dangers of peritonitis, the facility of keeping open the artificial anus, and the errors of diagnosis, being discussed

seriatim, with reference to the choice of the mode of performing the operation. With regard to the latter point of the diagnosis, Mr. Hawkins showed that very few errors appeared to have been committed in deciding whether the opening ought to be made in the right or left colon, and consequently that there was no necessity for always operating on the right side, as M. Baudens had advised, even when the obstruction was believed to be in the rectum or sigmoid flexure. But the author brought under notice several cases, showing the difficulty of distinguishing whether an obstruction was situated in the small intestines or in the large, and that even when the peritoneum was opened, the seat of the obstruction had not always been discovered, the difficulty being, as it seemed, liable to be increased still further by the existence or supposed existence of a hernia, of which some instances were also given at the conclusion of the paper.

ART. 78.—*On Excoriations and Ulcerations of the Rectum.*

By R. QUAIN, ESQ., F.R.S.

(*Medical Times and Gazette*, July 3 and 24.)

[The following remarks upon the surgical interference necessary in these very common and very painful disorders occur in a recent clinical lecture at University College Hospital. They are preceded by the account of several cases, and by some general observations:]

“The method of performing the operation is as follows:

“The fore-finger of the left hand being applied upon the diseased point, a probe-pointed bistoury (that which I use is narrow, and the cutting edge reaches only over one half the blade) is drawn fairly through the sore into the subjacent tissue. This is the method for ordinary cases; but, where the ulcer is extensive, or complicated with other diseases, as fistula, some addition to the simple incision is necessary, according to the nature of the complication.

“The sphincter is not necessarily interfered with; but it is very probable that the muscle is scored or notched, as the incision is carried quite through the ulcerated part.

“The operation is, according to my experience, invariably successful in cases of the ordinary kind; but, inasmuch as it is not the operation commonly resorted to or recommended by the highest surgical authorities, a few further remarks upon the subject are necessary.

“The eminent French surgeon, Boyer, it was who first relieved this painful disease by an operation; but this surgeon believed that the contraction of the sphincter ani was the chief disease to be overcome, and the incision he practised went through the muscle. There cannot be a doubt of the efficiency of the operation so performed. Moreover, it was a great improvement in surgery; for, those afflicted with a most painful malady, before the introduction of this operation, were left to suffer on without real remedy. Little wonder, then, that the operation, and in the same form, should have been universally adopted by surgeons. But the result of our cases proves, that this operation is a much larger and more serious one than was necessary,

because it was attended with infinitely more risk of the dangers of surgical operations, viz., abscess, erysipelas, &c. In common with others, I practised the same method of operating, until a circumstance occurred which led me to adopt a different plan. A little more than twelve years ago, being about to perform Boyer's operation upon a female in this hospital, the patient, who was lying in bed and not held with sufficient firmness, having suddenly moved away, I drew the bistoury through the mucous membrane and integument only. It occurred to me at the moment to ascertain if that slight incision would be enough to relieve the patient. The success was complete; and from that period I have used no other operation in ordinary circumstances. At the time I thought that this method had originated with myself; but, upon examining various books with a view to be assured upon this point, I found in a lecture of Sir Benjamin Brodie's a remark which satisfied me that priority in this matter was due to another surgeon. This will be apparent from Sir B. Brodie's words:—'The ulcer is always cured by a division of the sphincter. This, however, is not always necessary, unless the muscle be actually contracted. Mr. Copeland has observed, that, when there is a simple ulcer, the mere setting of the mucous membrane at liberty by dividing it longitudinally, so as to include the ulcer in the incision, is sufficient to effect a cure.'—(*Medical Gazette*, vol. xvi, 1835.)

"No case shows better than this how long an erroneous system may be pursued in deference to an erroneous theory. The sore to be cured was a small one, such as would, in most other parts, give little trouble to the patient or the surgeon; and the sphincter seemed to be mainly concerned in the disease, because of its being in a state of violent contraction, resisting very forcibly all efforts for the examination of the part. But this state of the muscle is, in my judgment, no more the actual disease than the spasm of the orbicularis palpebrarum is the curious and painful malady so often met with among children,—strumous ophthalmia. The passage of fecal matter is, in the one case, what the stimulus of light is in the other. The muscular contraction is equally intense in both; and the division of the muscle is no more necessary for the cure of the one than of the other. Doubtless the spasm very largely aggravates the suffering in both cases; but its cessation in the complaint we are specially engaged with, by division of the ulcer and the mucous membrane only, proves sufficiently that the muscle is not the seat of the disease."

ART. 79.—*A curious Case, in which a Foreign Body was removed from the Rectum by Incision through the Abdominal Parietes.* By M. REALI.

(*Gazette Médicale de Paris*, Aug. 3. *Bulletino dell. Scienze Mediche*, Nov., 1851.)

In December, 1848, a peasant was admitted into the hospital at Orvieto, in the last degree of feebleness and prostration. Under the idea that he would save the trouble and expense of eating, he had plugged up his rectum with a piece of wood. *This was nine days previously. Many attempts had been made in the interval to relieve him from this awkward predicament, but without success.

After his admission, M. Reali reiterated these attempts, but their only effect was to force the foreign body further from the outlet, and to increase the impaction. Already this body had passed beyond the reach of the finger. Under these circumstances, it was determined to expose the descending colon by cutting through the abdominal parietes. Having done this, attempts were again made to force the piece of wood from the termination of the colon, at which it was distinctly felt, into the rectum, and so downwards, and again without success. An incision was therefore made into the bowel, and the foreign body—the dimensions of which were 16 centimetres by 3, and the form a bluntish cone—was extracted through the opening.

The edges of the wound in the intestine and parietes were united by suture, and cold applications placed over the usual dressings.

During the first few days there was much flatulent distension of the abdomen, with considerable sickness and vomiting, for which symptoms three bleedings, three applications of leeches, and some doses of croton oil were thought necessary. The bowels acted on the 5th day. The wounds had healed on the 14th, when the patient was well, though for the sake of prudence he was kept two months in the hospital. And now, two years and nine months afterwards, he continues well, eating and drinking all before him, and no longer disposed to distress himself on the ground of his appetite.]

ART. 80.—*Puncture of the Bladder through the Symphysis Pubis.*

By H. T. CHAPMAN, F.R.C.S.

(*The Lancet*, July 10.)

[The following important communication is in the form of a letter to the Editor of the *Lancet*. It runs thus:]

"The question as to the best method of puncturing the bladder for retention of urine has recently attracted much attention, having been ably brought before his class and the profession, in the excellent clinical lecture delivered by Mr. Simon, and mooted with some vivacity at the Medical and Chirurgical Society, in the discussion that followed the reading of Mr. Cock's paper. By neither of these gentlemen, however, nor by any of the fellows of the society who took part in the discussion, was allusion made to an operation for the relief of retention of urine, suggested and performed some years ago, in India, by Dr. Brander, surgeon in the company's service, a memoir on which was communicated by him to the *Quarterly Journal, or Transactions, of the Medical and Physical Society of Calcutta*, I believe, for 1838.

"Inferring from this silence on the subject that none of the parties to the discussion had met with Dr. Brander's paper, or were acquainted with his operation, I make no apology for sending you the following brief account of it, drawn up from memory, as I have been unable to find the volume in which it appeared, either at the library of the College of Surgeons, or in that of the Medical and Chirurgical Society.

"Commencing his memoir by a critical review of the three operations by which the bladder is ordinarily reached, and setting forth the difficulties, inconveniences, and dangers, attending them all, Dr.

Brander states, that it occurred to him, from a consideration of the anatomical relations of the viscus, that there was yet one situation which had hitherto been overlooked, where the bladder, in its normal condition, approached nearer to the external surface of the body than at any other point, and where, moreover, the simplicity of its relations promised not only to facilitate its puncture, but, at the same time, very materially to diminish the risk and inconveniences of the operation. This situation is the symphysis pubis; and Dr. Brander at once proceeded to verify his impression of its superior eligibility by introducing a trocar into the bladder, at this point, in the dead body, and afterwards dissecting the parts carefully. The satisfactory result of his experiments induced him, at a subsequent period, to operate on the living subject, and with complete success, *quoad* the operation; the death of the patient, in a few weeks, from another malady, affording him the opportunity of a post-mortem examination, which demonstrated that no injury had been caused by the puncture, either to the organ itself or to any other part, the small wound being so perfectly healed, that its cicatrix could scarcely be detected.

"The particulars of a second successful case are given in the appendix to the same volume; and Dr. Brander informed me, when in England on furlough last year, that two more operations of the kind had since been performed in India. He employs a flattened trocar, and has never experienced the slightest difficulty in plunging it directly into the bladder, through the centre of the fibro-cartilage, in the dead or living subject. In his first operation, he divided the soft parts over the symphysis before introducing the trocar; in his second, he dispensed with this preliminary.

"In the absence of Dr. Brander's data, I lay before your readers the following details of two trials of the operation which I have made upon the dead body. After injecting half a pint of water, I attempted, in the first instance, to pass Ponteau's curved trocar, used for puncture of the bladder from the rectum, through the symphysis; but it was too large to enter. I then tried a small hydrocele trocar, which glided readily between the bones, and drew off some water. On opening the abdomen, I found that the canula, which was a little more than two inches in length, had barely penetrated the bladder, but an incision through a considerable layer of fat over the os pubis allowed me to push it nearly an inch farther. The canula had entered the bladder midway between the vesical orifice of the urethra below and the reflected peritoneum above, a full inch from the latter, even in the undistended state of the organ. The passage between the bones lay exactly in the centre of the symphysis, where it recedes downwards and backwards at the root of the penis. The direction of the instrument was at right angles with the symphysis, or at an angle of forty-five degrees with the axis of the body prolonged between the thighs. At no other point would the trocar enter, nor could I give it any other direction.

"In my second experiment I used a flattened, curved trocar, rather more than four inches in length, with a lancet point, the canula of which, in its narrow diameter, was not larger than a No. 3 catheter. With my fore-finger resting firmly on the side of the canula, about

two inches from the point, as a guard, I experienced no difficulty in introducing thus much of the instrument into the bladder at the spot indicated, and drew off its contents in a full stream. On laying open the bladder, an inch of the canula projected into its cavity, this subject being much emaciated. I then pressed it forward until the entire four inches had been introduced; but even now its extremity did not come in contact with the opposite mucous lining, as the curve of the canula gave it a more downward course than that taken by the straight hydrocele trocar. As nearly as I could judge, it pointed towards the junction of the sacrum with the os coccygis.

"The facility and immunity from danger of this operation will scarcely, I think, be disputed. The peritoneum cannot be wounded, even should the bladder not have risen above the pubis. There are no vessels nor other important parts to be avoided, and extravasation is far less to be apprehended in this situation than in any other. On the last point I may mention, that, having removed the bladder in order to examine more minutely the seat of puncture, I could no longer discover the orifice; and although the viscus was then filled with water, and considerable pressure made upon it, not one drop escaped. It would thus appear, that should the canula be withdrawn immediately after evacuation by puncture, or its point accidentally slip out of the bladder, there would be little or no risk of effusion; the walls of the bladder gliding upon each other to such an extent during its contraction, as to produce a valvular closure of the opening. Ossific union of the two bones is the only obstacle which seems likely in any case to impede the passage of the instrument; but this occurs far too seldom to be brought forward as a valid objection to the operation."

ART. 81.—*Polypus of the Urinary Bladder.* By W. S. SAVORY, Esq.,
Tutor at St. Bartholomew's Hospital, &c.

(*Medical Times and Gazette*, July 31.)

Wm. Morgan, aged 13 months, an infant of sickly appearance, was admitted into Lucas Ward, under the care of Mr. Stanley, on Saturday, the 22d of March, 1851.

Immediately beneath, and partially surrounding the umbilicus, is a firm swelling, two or three inches in diameter, but the limits are not well defined. To the touch is conveyed that peculiar feeling of induration which so often precedes suppuration. It is evidently very tender, and the muscles are forcibly contracted when the abdomen is pressed. The pain is much increased by all attempts to pass the urine, which merely dribbles away. It appears tolerably healthy, but is collected in small quantities only, with considerable difficulty. The child is much emaciated, and seems very ill. The countenance is expressive of great pain; the brows are knit; face pale; skin dry and harsh; pulse 96, small, somewhat sharp, but easily compressed; tongue red at the sides and tips where the papillae are prominent, and covered at the dorsum with a thick pale brown fur. The bowels act regularly.

The child has been ill for eight weeks. The mother first noticed that micturation caused pain in the lower part of the abdomen, and this was soon followed by an almost constant desire to void the urine. During these attempts the stream was frequently interrupted, and after a momentary pause would again flow. The child was making frequent attempts to grasp the penis, as if to relieve some pain or uneasy sensation in that region. The body at this time was well nourished, and he appeared very healthy. The mother brought him to Mr. Stanley soon after these symptoms commenced, who, from their character, suspected stone in the bladder. A sound was introduced, and a careful examination made, but no foreign body was detected. The surface of the bladder, however, felt rough and rugous, a peculiar but not uncommon sensation being conveyed through the instrument when passed over its interior, well known to those who have had frequent occasion to search the bladder on a suspicion of calculus. Since that time, the child has been brought as an outpatient to the hospital, but notwithstanding various plans of treatment, no relief has been obtained. He has continued constantly to complain, screaming during a greater part of the night, and always when the urine is voided, apparently from violent attacks of pain in the abdomen. The mother declares that both flesh and strength are rapidly disappearing. The swelling about the umbilicus commenced a few days ago.

Mr. Stanley, now thinking that the bladder might be distended, introduced a catheter, but not more than two or three ounces of clear and healthy urine escaped.

No medicine was ordered, but a poultice composed of equal parts of bread and linseed meal was applied to the swelling, and the child was ordered milk diet.

March 24th.—There is a blush of redness over the surface of the swelling which is not so tense, and upon careful manipulation an indistinct sense of fluctuation is perceptible. In other respects, the child is much the same.

25th.—The swelling is more red and prominent, and there is distinct fluctuation. Mr. Stanley punctured it with a lancet. Some turbid serous fluid first escaped, in which no urinous odour was detected, and this was followed by about two ounces of tolerably healthy pus. The application of poultices was continued as before.

28th.—It was thought on the day after the opening had been made, that some urine escaped from it; there is now no doubt, for the greater portion of the urine passes into the poultice, and scarcely any by the natural channel. It occasionally flows almost in a stream from the aperture. The abdomen is softer and more tolerant of pressure. The tension of the swelling has considerably abated, and the surface is much paler. The condition of the child in other respects is not materially altered. He is perhaps more emaciated, and lies exhausted, with a pain-worn countenance, becoming more restless towards night.

April 2d.—No change for the better has occurred. Mr. Stanley again passed a sound into the bladder; the rugous surface was still very perceptible.

April 3d.—The child was removed from the hospital, and after lingering in a wretched state for a few days, died.*

Post-mortem Thirty hours after Death.—The body was much emaciated. Upon opening the abdomen, an abscess was found between the posterior surface of the abdominal parietes and the peritonæum, extending from the umbilicus nearly down to the os pubis. The omentum was adherent to the posterior wall. The bladder, much contracted, lay behind the os pubis. A small papillary process projected from its upper surface, and to this point the cavity of the abscess was traced. Upon removing the bladder, and laying it open by a vertical incision through the anterior wall, a soft lobulated mass protruded; this was carefully examined, and proved to be a pedunculated growth from the inner surface, stretching transversely across the fundus of the bladder, immediately behind the apertures of the ureters, which were much dilated. This mass was attached at either side, but free in the centre, and was so situated that it might lie forward over the urethral orifice, or be propelled in that direction when attempts were made to void the urine, and thus obstruct the stream. Some portions of the tumour resembled lobules of common fat; others, being more translucent, appeared like clusters of hydatids; but the preparation is in the museum of the hospital, and its more prominent characters are well shown. In minute structure it closely resembles mucous membrane, being chiefly composed of the several elements of that tissue. Mr. Paget describes it as presenting "an interior substance, composed in part of very fine filamentous fibro-cellular tissue, and in much greater part of granular or dim homogeneous substance, with imbedded nuclei. Over these was an immense quantity of tessellated epithelium, with well-formed and large scales, like those of the mouth. The epithelium was by far the most abundant constituent of the small lobes of the polypus." It is interesting to remark the character of the epithelium, of which so great a portion of this polypus is composed. It is decidedly tessellated; whereas the particles of the ordinary epithelium of the mucous membrane of the bladder approach more nearly to the spheroidal form.

The walls of the bladder are much thickened, both in their mucous and muscular coats, and the surface presented the rugous or columnar appearance, which was so plainly felt during life. The small papilla upon the upper surface of the bladder before mentioned, proved to be the remains of the urachus. A bristle could be passed from the summit downwards to some little distance, but without violence it would not enter the bladder, and all attempts to discover a communication between the cavity of that viscus and the abscess failed. There can be of course no question that the two communicate, as the urine continued to escape by that outlet up to the time of the child's death; but probably the aperture is very minute and perhaps valvular; and these facts, together with the peculiarity in the situation of its external orifice (in the apex of the small process projecting upwards) would sufficiently explain why no pus escaped

* The mother, who was carefully questioned on the point, declared that up to the time of the child's death, the urine flowed freely from the aperture at the umbilicus, and that, latterly, none escaped by the natural channel.

into the bladder. This small process was undoubtedly the remains of the urachus, for it was situated in that part of the bladder from which the urachus springs, and no other remains of this structure appeared; it was, moreover, perforated.

The right kidney, more especially its cortical portion, was considerably enlarged and congested. Its texture was altogether softer than natural, and more easily lacerated. The ordinary section displayed one or two irregular patches in which suppuration had commenced. The left kidney was congested and slightly enlarged.

The foregoing details have been furnished on account of the many points of interest connected with the case. The more important of them may be briefly alluded to.

It is seldom that so complicated a series of symptoms occur during life, admitting of so complete an interpretation from an examination after death. The morbid growth obstructing the urethral orifice prevented the urine from escaping by the natural channel; and had the little patient been much older, no doubt severe symptoms of retention would have frequently supervened, but in this case, from the early age of the child, a most interesting and instructive method of relief resulted. The urachus had not yet become the mere fibrous cord; we find it in after life serving as a ligament to support the bladder. It is well known, that at the period of birth the urachus often remains tubular to a greater or less extent above the bladder; the metamorphosis of the allantois not being then fully completed. It is impossible to say how soon after birth this morbid growth was produced, and how early it became necessary to use unnatural muscular efforts to expel the urine. The contents of the bladder thus unduly pressed on, would be forced into the orifice of the imperfectly closed urachus. The result is obvious; the canal is gradually reopened upwards, under the constantly-acting and gradually-increasing pressure, and by and bye reaches the neighbourhood of the umbilicus. Other consequences then ensue. The presence of urine in this unnatural situation is sufficient to account for the production of inflammation; an abscess forms,—is opened, and an artificial channel for the urine is established. The abscess extends in the tract of the urachus, towards the bladder; the urachus, thus surrounded, is gradually destroyed, the extremity communicating with the bladder alone remaining; and this contracts into the small eminence found after death. The urine, constantly escaping, would require only a minute outlet. It has been already remarked, that the communication between the cavity of the bladder and the abscess was not absolutely demonstrated after death; yet reason forbids us to doubt its existence.

ART. 82.—*On the Combination of Lithotomy with Cystotomy.*

By (1), M. PETREQUIN; and (2), Dr. PAGELLO.

(1. *Brit. and For. Med.-Chirurg. Rev.*, July. 2. *Dublin Quarterly Journal of Medicine*, May.)

1. Among the dangers of lithotomy, the voluminous size of the stone stands foremost, so that when this has proved excessive, various authors have recommended the operation to be left unfinished. The

older surgeons attacked these calculi by various forms of crushing forceps, all of these being of a most gigantic size. The moderns have more turned their attention to the improvement of the operative procedures; but in spite of any directions of extent that may be given to the incision, there are calculi too large to be removed by the perinæum with impunity, notwithstanding the dilatibility of the prostate and elasticity of the neck. Large incisions, also, favour the infiltration of urine.

To meet such cases, M. Petrequin adopts a combination of lithotomy with lithotripsy. He does not mean that cystotomy should be resorted to after lithotripsy has failed, for fruitless attempts to crush the stone only add to the danger of subsequent cutting. Simple lithotomy should be confined to cases in which it is best calculated to succeed, viz., calculi capable of removal by a moderate perineal incision; and when the calculus is too voluminous we should call in the aid of lithotripsy to reduce its size. Two cases are related in which this combination was attended by a happy issue, notwithstanding the presence of numerous serious complications.

2. The chief purport of Dr. Pietro Pagello's communication is to claim for his countrymen the merit of having first practised the combined operation of cystotomy and lithotripsy, and to give the particulars of the case in which, in 1798, Dr. Marché operated on Valentine Urban in the Civic Hospital at Belluno. He has had no personal experience in the matter.

ART. 83.—*Observations on the Symptoms resulting from an Undescended Testicle, which were of so painful a nature as to necessitate its removal.*
By JOHN HAMILTON, Esq., Surgeon to the Richmond Hospital, and Examiner in Surgery to the Queen's University in Ireland, &c.

(*Dublin Quarterly Journal of Medical Science*, May.)

[The following very interesting case is preceded by some general remarks upon undescended testicle, and by a case of a similar kind from the pages of the *Révue Médico-Chirurgicale*, in which the symptoms were mistaken for those of strangulated hernia, and the operation for that affection actually carried into effect. Upon the case itself Mr. Hamilton writes as follows:—]

“Mr. W—, aged 45, always had a swelling in the right groin, which he and others fancied was a rupture. At one time he got a truss, but the pressure caused such pain that he could not bear it.

“About seven weeks since, while lifting a heavy weight on board ship, he felt something in the situation of the swelling crack ‘like an egg-shell,’ attended with great pain shooting up the back and round the hip. The pain was so severe that he could not stand. Leeches were applied; he was cupped in the loins, and he was purged with relief, but the pain again returned, with such general illness, that his brother-in-law sent for me, fearing it was a strangulated hernia.

“I found a tumour, resembling in appearance and situation an inguinal hernia of the right side. It was situated in the inguinal canal, and a little below the external abdominal ring, about the size of a hen's

egg. The integuments were natural, but so exquisitely sensitive that examination could scarcely be borne. I ascertained, however, that it had much the feel of a rather firm hernia; that it was smooth and elastic, and *had not moved by coughing*. That part of it which protruded below the ring was very hard and somewhat irregular, and seemed even more tender than the rest. He suffered great pain not only in the swelling, but up the abdomen to the right loin. He was sick in the stomach, *but the bowels were open*. Skin hot; tongue whitish. As no testicle could be felt in the scrotum of the same side, I had no hesitation in attributing the symptoms to inflammation of an undescended testicle. The inflammation was probably caused by the testicle having been violently dislodged from its usual position in the inguinal canal, and forced into a narrower one, when it became subjected to severe compression by the unyielding tendinous expansion of the external oblique muscle. The violence of the attack speedily yielded to leeches, tartar emetic, and mercury; but the tumour still remained very sensitive, and that portion which projected, external to the ring, was hard and very tender. When he got up and attempted to walk, he suffered pain shooting from the testicle up the back, and was forced to go about with the body bent forwards, the erect position causing pain in the testicle. A fortnight had scarcely elapsed when, without apparent cause, the testicle became again inflamed, and in the short interval of seven weeks, he had altogether four attacks of orchitis. The manner in which it took place was this: He would get apparently quite well, except some soreness of the lower end of the epididymis; and pain shooting up to the back and round the crest of the ilium, evidently in the tract of the circumflex iliac nerve; but the swelling would have subsided, the firm oval tumour have become a soft and pulpy one, and tolerant of moderate pressure. After going about, however, for a few days, uneasy in the erect position and from the motion of walking, he would suddenly suffer such severe pain in the undescended testicle, that he had instantly to take to his bed, and undergo treatment. His own idea was, that the testicle had become displaced, for he was conscious of its moving and then being "gripped." In one of these attacks, the sudden increase in the size of the inflamed testicle was most remarkable, and the lower globules of the epididymis became distinct, very hard and very tender; the tenderness in the testicle itself was intense,—he could not even bear the weight of a piece of lint wet with lotion; from the same cause, the first application of leeches gave such pain, that I thought it counterbalanced any benefit derivable from them. At one time, about the hard lower globus of the epididymis, there was a softer fluctuating swelling, and the pain and tenderness being then at their height, I almost looked to the formation of matter; but in proportion as the inflammation subsided, this soft fluctuating tumour receded. I know not that it was caused by effusion of serum into the tunica vaginalis of the undescended testicle.

"As I have mentioned, I treated the first attack with leeches, cold lotions, antimonials, and mercury; but the subsequent attacks differently. In the second I tried the anodyne plan, recommended by Mr. Gray, of the Free Hospital, London, which I have found useful in several cases of ordinary gonorrhœal orchitis: a pill composed of two

grains of extract of hyoscyamus, with three of Dovers' powder every fourth hour, warm poppy-head stupes, and, finally, a blister. The last certainly had a most surprising effect; directly it rose the pain and swelling subsided. In the last attack I removed the inflammation and its effects by a purge and blister alone.

"This attack came on in a most unexpected manner: he had recovered from a former one more completely than usual, and, not to risk a relapse, he remained in bed for a few days, after being, to all appearance, quite well; when, turning in bed, he felt the testicle suddenly slip and go wrong, and inflammation commenced in it immediately. It now became clear, therefore, that though these attacks yielded to treatment, no safeguard existed against their repeated return. In consequence of the effects of the first effort, the position of the undescended testicle had been so changed, that it was not only uneasy during any moderate exertion, but liable in a moment to become further displaced, and to be injuriously compressed by the neighbouring parts. So circumstanced, he could not follow any calling which demanded the slightest effort; his future prospects were, therefore, as gloomy as his present state of suffering was distressing. Something more effectual must be attempted. Two plans presented themselves. First, to cut down to the external abdominal ring, slit it up, and that portion of the tendinous expansion of the external oblique muscle which forms the anterior wall of the inguinal canal, and which covered the testicle. This operation was suggested by Sir Philip Crampton in consultation. It appeared to me, however, that after all it might prove only palliative; for where the wound had healed, and cicatrization taken place, the hard cicatrix might be as bad as before. It would be little more severe to remove the testicle altogether.* To the removal of the testicle the patient most readily consented, though it was explained to him, that the operation was not quite free from danger; the risk depending in a great measure on whether the serous sac, or tunica vaginalis, in which the testicle lay, communicated with the cavity of the abdomen or not.

"Dec. 22d, 1851, assisted by Sir P. Crampton, Dr. Frazer, and my pupil, Mr. Mulock, I removed the testicle, the patient being under the influence of chloroform.

"An incision, between three and four inches long, was made over the tumour, and the layers of fascia repeatedly divided down to the sac in which the testicle lay,—the tendinous fascia of the external oblique was much thinner than usual; the walls of the sac felt thick, and it evidently contained fluid. I made a small cautious opening, when a quantity of transparent yellow serum flowed out, the same in appearance as that of ordinary hydrocele. The sac was slit up, and the testicle could be seen lying in the tunica vaginalis; the membrane

* Mr. Curling mentions, that in Germany, to relieve the pain of the undescended testicle, the testicle was exposed, separated from the parts in which it lay, drawn down and fixed in a place made for it by incision in the scrotum. I rejected this plan because the final result of the case is not stated, and it appeared to me very doubtful whether a cord so stretched, and so fastened down by adhesions as this must be, would not be more painfully affected by the ordinary movements of the body than even before such an operation.

smooth and serous, but much more vascular and red than natural, and many bright red bands of adhesion existed between it and the surface of the testicle. There was no communication with the peritoneal cavity. The testicle was smaller than ordinary, its surface smooth and serous, but red; it was dissected out, along with its enveloping sac, from the subjacent parts, and the cord was carefully separated. This was less easy, and required more caution than in ordinary castration, as there was little space between the upper part of the testicle and the internal abdominal ring. A ligature was put round the cord, which was then divided, and the testicle taken away. There was very little bleeding. The case went on with scarcely a troublesome symptom; and in little more than three weeks after, he walked into my study with the wound just healed, and with perfect freedom from any of his former morbid sensations.

"After removal, examination showed the testicle to be smaller in the body than natural, but having the usual pulpy feel. The tunica albuginea was unusually thin; and when a portion of it was dissected off, the tubuli seminiferi appeared natural, but the division into lobes was very much more distinct. When a piece of a seminal tube was placed in the field of a microscope, the structure was quite normal, but the fluid in it contained no spermatozoa, only seminal granules. Some of the fluids expressed from the vas deferens exhibited the same character,—no spermatozoa. The attempt was made by Mr. Carte to inject quicksilver down the vas deferens, but it stopped at little more than an inch from the orifice, in consequence, as was found, of its being blocked up by a yellow substance of firm consistence. The epididymis presented characters quite peculiar; it was unusually long and large; the inferior globus, which was felt external to the abdominal ring, was much elongated and very hard; there was an appendix from the upper part of the epididymis, and a single hydatid was discovered in it. The vas deferens, of the ordinary size but very hard, had not the usual zigzag convolutions on itself, but was very straight. The same firm yellow substance which blocked it up, was also found to fill the vasa efferentia.

"As far, therefore, as the condition of the testicle went, there can be no doubt that its functions were irretrievably gone; and no regret can be felt at its removal. The deposits were, no doubt, the result of frequent attacks of inflammation: the intense redness of the tunica vaginalis, and the vascularity of the surface of the testicle, along with the adhesion, show this inflammation to have been of an unusually severe character."

ART. 84.—*Collodion in Inflammation of the Testes.*

By M. DECHANGE.

(*Archives Belges de Méd. Militaire, January.*)

In this periodical M. Dechange gives the particulars of a case of testitis, in which the symptoms were almost immediately relieved by smearing a thick coating of collodion over the scrotum. The benefit is ascribed partly to the gentle compression and support exercised by

the varnish, but chiefly to the exclusion of the atmospheric air,—air, according to the author being a powerfully exciting cause of inflammation.

ART. 85.—*A Case showing an Ingenious Mode of Extracting a Broken Gutta Percha Bougie from the Urethra, and the general undesirableness of such Bougies.* By M. MONTOZON.

(*Journ. des Connais. Medico-Chir.*, July 31.)

After trying ineffectually several ways for getting hold of the end of the broken fragment, M. Montozon succeeded in pushing it out by introducing his finger into the rectum and then exercising proper pressure upon the deep portions of the urethra.

The undesirableness of gutta percha as a material for bougies, appears in the fact that the instrument broke three or four times, and came away in small portions, while M. Montozon continued his attempts to pull it from the urethra by getting hold of its end. In the first instance, also, the fracture took place without any improper violence.

ART. 86.—*A Case of Urethral Fistula in a Child; showing the evils of a Meddling Treatment.*

(*Gazette Médicale de Paris*, Aug. 21st.)

The case described is one of accidental urethral fistula, in a boy eleven years of age, in which sutures, catheterisms, cauterisations with nitric acid, nitrate of silver, lapis infernalis, and actual fire were tried repeatedly and unsuccessfully for the space of five months. Then, after an interval of two months, in which the surgeon had lost sight of the case, his patient is brought back to him quite well, and with this story. For a month the father of the child had imitated, as far as he could, the proceedings of the surgeon, when, finding matters no better, he had laid aside the catheter and caustic, and gone on plastering the fistula over with simple wax cerate—his object in so doing being to oblige the urine to find its way through the natural outlet. This he continued to do for three weeks, when the child was cured.

This case is told as an illustration of the good effects of cauterisation and wax ointment; but we leave it to our readers to determine how much the *far niente* had to do with the matter.

ART. 87.—*On the Treatment of Primitive Venereal Sores by the Local Application of Acetic Acid.* By M. HEUROTAY.

(*Archives Belges de Méd. Militaire*, January.)

M. Heurotay was led to the adoption of this mode of treatment by a fact which transpired in the course of M. Ricord's investigations on syphilitic inoculation. This fact is the power possessed by acetic acid of destroying the inoculable properties of the syphilitic virus. He

refers to two cases of Hunterian chancre, growing rapidly in spite of the ordinary mode of treatment, which were immediately stayed in their progress, and presently healed, by occasional applications of the acid, and by dressings of the charpie soaked in the same—precautions being taken to prevent any destructive action upon the sound parts.

He refers also to similar results as having been obtained by MM. Dechange and Gougée.

ART. 88.—*On the Local Application of Copaiba in Gonorrhœal Discharges.* By M. Marchal, of Strasburg.

(*Révue Médico-Chirurgicale de Paris*, August.)

For many years Professor Marchal has tried this mode of treatment. He has tried it in three different modes:—1. By injections of the pure balsam. 2. By injections of an emulsion consisting of 8 parts of balsam, 6 of mucilage, and 100 of water. 3. By means of bougies formed of 20 parts of common lead plaster, 10 of yellow wax, and 6 of copaiba; or else of equal parts of the three. In some instances also he has endeavoured to secure a continuous application of the fluid balsam or emulsion, by inclosing small quantities in portions of elastic catheters, properly fixed in the urethra. Commenting upon these different modes he says that the bougie was the least successful.

M. Marchal also adds that he has carried out the same plan successfully in discharges from the vagina and uterus, but upon this application he does not enter into particulars.

3. *Of the Upper Extremity.*

ART. 89.—*Case of Disease at the Elbow, in which the Joint was Excised.* By H. SMITH, Esq., Surgeon to the Westminster General Dispensary.

(*Medical Times and Gazette*, Oct. 30.)

"Omer Blareau, aged 10 years, a deaf and dumb boy, and exceedingly intelligent, was brought to me at the end of June last, with extensive disease of the left elbow. Four months previously, he had received a severe blow upon the joint, upon which great swelling and pain occurred. He was seen by a practitioner, who continued in attendance for some time; but the part became more painful and much more swollen, and his bodily health, which had been hitherto good, began to give way; he became very thin and pale. When I first saw him, the elbow-joint was immensely swollen, and fluctuation was very evident, and it appeared to me that there was extensive disease. I had the boy placed under the influence of chloroform, and then I ascertained that the bones grated one upon the other. I thought I would take this opportunity of trying the method lately advocated by my friend Mr. Gay, viz.,—laying the diseased joint freely open, and accordingly made a deep incision on either side, and evacuated a quantity of matter. By inserting the finger into the

joint, the extremities of the bones composing it were felt to be rough and carious. The patient was ordered to keep his bed, and the arm was placed in a convenient position. A generous diet was allowed him. Immediate relief was given by this operation; the swelling of the joint became much less, and the boy improved in his general condition; but, at the end of a month, the bad symptoms began to return; he complained much of his arm, perspired a great deal, and continued thin, and the sinuses left from the half-healed incisions did not close. I therefore deemed it proper to excise the elbow-joint, first having submitted the case to Mr. Fergusson and Mr. Wade, who agreed with me in the necessity of the proposed measure; accordingly, on Friday, July 30th, I performed the operation. Having first placed the boy under the influence of chloroform, I made an incision on each side of the joint, about four inches in length, and then connected them by a transverse cut; the flaps of skin were dissected upwards and downwards. The olecranon process was now bared, and cleared of the soft parts, and the head of the radius was also exposed; and both these portions of bone were removed by means of the saw; the lower extremity of the humerus was then cleared, and cut through, and the operation was finished with little trouble. There was much disease of the joint. The whole articular surface and portion of the body of the olecranon process were carious. The articulating surfaces of the radius and humerus were in a similar condition. The wound was brought together by sutures, and a pasteboard splint was placed upon the arm, which was kept in a flexed position.

"The patient went on so well, that, on the 12th of August, he was able to sit up; and, on the 25th, he came to my residence; the wound had almost entirely healed, and the health had very much improved; and, at the end of another fortnight, the parts had become so firm, and there was such power of motion, that I took the splint off, and desired that the boy should use his limb to a slight extent every day."

[Three weeks afterwards the patient unfortunately fell down a flight of stairs, and so injured his lame arm as to require its removal at the shoulder-joint. This gave an opportunity of ascertaining the actual condition of the elbow.]

"The condition in which the artificial joint in the place of the elbow was found upon dissection was most satisfactory; and it shows how very well the parts become adapted for useful purposes after excision of a joint; for the ends of the bone had become very firmly knit together by surrounding tissues, and, if the arm could have been saved, there would doubtless have been a considerable degree of motion in the part; as it was, the patient, before the second unfortunate accident, could move the limb with ease, and use his hand and fingers with facility."

ART. 90.—*On a New Mode of Reduction in Dislocation of the Thumb Backwards.* By M. DEMARQUAY.

(*Gazette Médicale de Paris*, May 1.)

The principal impediment to reduction in this case is the strangulation of the head of the metacarpal bone in a kind of button-hole

between the short abductor and the external part of the short flexor muscle on the one side, and the transverse adductor and the tendon of the long flexor on the other side. In this hole the dislocated bone is fixed, and the more extension is made, the more tightly is it held.

In order to remedy this difficulty, M. Demarquay proposes that extension should be kept up for a little time in the usual manner, and then an inward movement of rotation given, by means of which the thumb may be made to slip beneath the edge of the strangulating orifice. The rotation inwards is preferred to the rotation outwards, from their being less resistance to the return of the bone in that direction.

M. Roux succeeded by means of this method in a case which had for some time resisted all attempts at reduction.

4. *Of the Inferior Extremity.*

ART. 91.—*Statistics of the Operation of Amputation at the Hip-Joint.* By STEPHEN SMITH, M.D.

(*New York Journal of Medicine*, October.)

[The following summaries form the conclusion of Dr. Smith's paper:]

Summary of Cases occurring in Continental Practice.—Whole number of operations, 35, of which 14 were successful, and 21 fatal; being a mortality of 60 per cent. *Sex*, 24 males, 7 females. *Age*, varying from 5 to 50. *Causes*, 17 were for severe injuries, of which 12 were gun-shot wounds; 7 recovered and 10 died; 16 were some chronic form of disease, involving extensive suppuration and constitutional deterioration; of these 6 recovered and 10 died; 2 not given.

Four died within 24 hours, of which two were in military service, amputation being performed at their own request contrary to the surgeon's wish; 2 were exhausted from previous disease; 1 died on the third day after a journey of twenty-four hours; of the remainder, 1 had the plague; 1 phlebitis; 2 sunk from exhaustion; 2 from imprudencies in diet had fever and dysentery; 1 fever; 1 tetanus; 2 doubtful. Of those whose time of death is uncertain, 1 died while being removed with the army; 1 died of fever. Anæsthetics were used in two cases, both successful; in one ether was employed, in the other chloroform.

In addition to the cases given in the tables, the following are alluded to by authors, the result only being given. Of the successful cases, Orthon, Rossi, Hysern, Wedemeyer, Delauney, Langenbrek, have each had single examples. Of unsuccessful cases, Ravaton, Graef, Pelletan, Velpeau, Gouraud, Vidal, Gensoul, have each had 1; Kerst 2, Dupuytren 3. These cases added to the foregoing make the whole number of operations on the continent 53; of which 20 were successful and 33 fatal, increasing the mortality before given to over 62 per cent.

Summary of the Cases in British Practice.—Whole number of operations, 25, of which 11 were successful, and 14 fatal; being a mortality of 56 per cent. *Sex*, 18 males, 5 females, 1 not given. *Age*,

varying from 2 to 40. *Causes*, 11 were for severe injuries, including gun-shot wounds; of these 7 were primary amputations, of which 4 died and 3 recovered; 4 were secondary amputations, of which 2 died and 2 recovered; in 11 some chronic form of disease, of which 5 died and 6 recovered; 2 not given. *Previous amputation* of thigh in 5 cases, 1 died and 4 recovered.

"Two died within twenty-four hours; 4 between 24 and 48 hours; the remaining 6 between the 5th day and 8th week. Of those dying within 24 hours, 1 had uncontrollable hæmorrhage in an exhausted system; 1 was in a most unpromising condition from the severity of the injury. Of those dying between 24 and 48 hours, 1 suffered severely from the shock of the operation, 1 primary amputation after a severe injury; 2 not given. Of those dying after the 5th day, 4 died from extension of previous disease, 1 had fever not depending on the operation; 1 had ascites. In 1 chloroform was employed, and with success.

"The following cases, as in the preceding summary, being too deficient in details to be admitted into tables, may here be noticed. Those reported as successful are Dr. Millengen, 2; that of an English sailor at the battle of Aboukir; as unsuccessful, Mr. Thompson, Mr. Brodie, Mr. Brownrigg (2), Mr. Syme, and Mr. Liston. These cases, added to those already given, make the whole number of British operations 34; of which 14 were successful and 20 unsuccessful, being a mortality of over 58½ per cent.

"*Summary of Cases occurring in American Practice.*—Whole number of operations 11, of which 8 were successful and 3 fatal, being a mortality of 1 in 2⅓, or of 27⅓ per cent.; 7 were males, 4 not noted. *Age*, varying from 10 to 43, majority under thirty, 4 not given. *Cause* in 5 cases was some chronic form of disease, of which 4 recovered and 1 died; 2 were severe accidents with primary amputation, both fatal within 48 hours; one painful affection of joint, cured; 3 not given; 2 followed previous amputation of thigh, both of which were successful. The *operation* in 3 cases was performed with lateral flaps, 1 successful, 2 fatal; in 3 cases with anterior and posterior flaps, all successful; in one by the circular method, which was fatal; 4 not given. In 3 cases anæsthetics were employed, all successful; in 2, chloroform was used, in 1, chloric ether.

General Summary of the Operation of Amputation at the Hip-Joint.

	Whole No.	Died.	Cured.	Ratio of Mortality	Per cent.
In Continental practice	53	33	20	—	62⅓
In British "	34	20	14	—	56
In American "	11	3	8	1 in 2⅓	27⅓
Total,	98	56	42	—	57½

Cause of Amputation in Sixty-two Cases.

	Severe Injuries.	Died.	Cur'd	Per cent. of deaths.	Chronic Disease.	Died.	Cur'd	Per cent. of deaths.
In Continental practice	17	10	7	58 $\frac{1}{4}$	16	10	6	62 $\frac{1}{2}$
In British "	11	6	5	54 $\frac{5}{11}$	11	5	6	45 $\frac{5}{11}$
In American	2	2	—	100	5	1	4	20
Total,	30	18	12	60	32	16	16	50

"In reviewing the history of this operation, it is found that the percentage of mortality has not gradually diminished from the earliest introduction of the operation, but quite abruptly. Thus for the twelve years previously to 1840, there were twenty-nine cases reported, of which six were successful, and twenty-three fatal, being a mortality of over seventy-nine per cent.; while for the twelve years subsequently to that date, as already noticed, the mortality was reduced to but fourteen per cent. It is difficult to account for this feature in the history of the operation, except in a general way; for the ratio of accidents and injuries to chronic diseases of the thigh, remains nearly the same in both periods. We may suspect, however, that the cases were better selected, that the operation was more skilfully executed, and above all, that much is due to the employment of anæsthetics."

ART. 92.—*On Excision of the Knee-joint.* By DR. TANNER.

(The Lancet, Nov. 5.)

[The following important information is gathered from an article on a different subject:]

"We cannot shut our eyes to the fact that a limb may be saved at the expense of life. As regards the upper extremities, there can be no doubt that surgeons now successfully save many arms which would have been condemned only a few years since; and by the judicious removal of necrosed or carious bone, or by the excision of the shoulder, elbow, or wrist-joints, preserve useful members. As regards the expediency of the same class of operations in the lower extremity generally, we entertain more doubt; but we have no doubt of the inexpediency of one of these proceedings—resection of the knee-joint. As far as we have been able roughly to ascertain, the knee-joint has been excised fifteen times; and it may not be unproductive of good to put these cases before our readers in a tabulated form:—

EXCISION OF KNEE-JOINT.

Date.	Surgeon.	Name and Age of Patient.	Result.
Aug. 23, 1762.	Mr. Felkin.	{ No name or age given; case very imperfect and unauthenticated }	" On Nov. 21, 1762, he was got so well as to require no further attention."
July 2, 1781.	Mr. Park.	Hector M'Caghen, a sailor, aged 33	{ Cured; was afterwards able to perform all the duties of a seaman.
June 22, 1789.	Mr. Park.	Chas. Harrison, a wheelwright, aged 30	{ Died of exhaustion, Oct. 13, 1789.
Sept. 17, 1792.	M. Moreau.	Mons. Clause, apothecary	{ Died of dysentery, three months and a half after operation.
—	M. Moreau.	No name given	{ Died very soon after operation.
—	M. Moreau.	No name given	{ Cured.
Oct. 21, 1809.	M. Mülder.	"A pregnant woman"	{ Died of tetanus, Feb. 8, 1810.
—	Sir P. Crampton.	"Young woman"	{ Successful.
—	Sir P. Crampton.	"Young woman"	{ Died exhausted three years and two months after operation.
Dec. 7, 1829.	Mr. Syme.	John Arnot, aged eight	{ Cured.
Dec. 28, 1830.	Mr. Syme.	Anne Mackintosh, aged seven	{ Died Jan. 8, 1831.
Jan. 19, 1851.	Mr. Jones.	Sarah Hansford, aged 25	{ 15 months after operation, the surgeon says: "the knee at present is almost entirely healed." She could walk with a stick, some apparatus being applied.
—	Mr. Fergusson.	A man at King's College Hospital . .	{ Died on ninth day.
April 27, 1851.	Mr. Jones.	John Le Gros (a boy)	{ Aug. 25, 1851.—"Is now quite convalescent." In May, 1852, however, there were three or four superficial ulcers keeping up a slight discharge.
Sept. 4, 1851.	Mr. Jones.	A Lady	{ Died Sept. 17, 1851.

"Now, on analysing this table, we find that there are fifteen cases, of which eight may be at once disposed of, because in this number the operation proved directly or indirectly fatal. What then was or is the condition of the remaining seven? The first case ought not to be noticed at all, on account of its wanting authenticity. The second patient, after enduring much risk and suffering for nearly twelve months, as appears from the report, may be said to have been cured. Of the third successful case, we only know that the patient could not move without crutches for a long time, though ultimately the limb became useful. Of the fourth, we learn that death occurred at the end of twenty years, having of course nothing to do with the operation. Referring, however, as we believe, to this case, Mr. Fergusson remarks:—'Unfortunately, the limb had not been steadily kept in the extended position, and ankylosis had taken place with the bones at a right angle. The member, therefore, could be of little use.' But it is proper to mention that the patient was pleased with it. Of the fifth subject, Mr. Syme says, about twelve months after the operation, in his treatise on 'Excision of Diseased Joints,' published in 1831:

"I have no doubt that ultimately it (the mutilated limb) will be nearly as useful to him as ever; but even at present he would be very sorry to exchange it for a wooden one.' (p. 138.)

"This is satisfactory enough certainly; but what does Mr. Syme say of this same patient seventeen years afterwards? Just this:

"The knee-joint may be excised, but not with the effect of preserving a limb so useful as an artificial substitute after amputation of the thigh. I tried the operation nearly twenty years ago on a boy, who recovered perfectly from it, and seemed at first to possess a limb little inferior to its fellow, except in so far as it was stiff at the knee. But, in the course of time, it was found that the growth of the two limbs was not equal, and that the one which had been the subject of operation gradually diminished in respective length until it wanted several inches of reaching the ground when the patient stood erect.' (Contributions to the Pathology and Practice of Surgery, &c., p. 225.)

"Of the success of the last two cases, in which death did not occur, our readers can judge from the table. From the foregoing it will be seen that the case stands thus:—

"15 cases of excision of knee-joint.

"8 cases died.

"Of the remaining 7—

"1 case unauthenticated.

"2 cases recovered, with members of little use.

"2 cases cured, though we have no particulars of one of them.

"2 cases, when last reported, were by no means well.

"With these unsuccessful results before us, it may not prove un-instructive to inquire, how it happens that the operation has lately been revived? We can only account for it in one way—namely, that some practitioners collect their facts so loosely that the inferences drawn are erroneous, and consequently lead to erroneous results. Thus, the latest writer on the subject we are considering, Mr. Jones, of Jersey, regards these operations upon the arm or leg as identical in character, for he says:—

"Four successful operations out of five, or eighty per cent., cannot otherwise than prove that excision of a joint is by no means more dangerous to life than is an ordinary amputation."

"It would of course be supposed that these instances of excision all referred to one kind of joint; this is not the case, for of the five, there were three of resection of the knee, and two of the elbow."

"Mr. Jones is also under misapprehension as to the experience of others, for in one place he wonders that the operation should be denounced by any one seeing that 'in the hands of Park, Crampton, and others, it has been eminently successful;' and in another place he expresses a wish to advocate 'a mode of practice so much approved by Syme'—eminent success and approval, the nature of which has been shown."

"Putting aside, however, the severity of the operation and the immense wound, the risk of hæmorrhage, the severe shock to the constitution; it is still a question whether the limb is worth the risk of saving. Mr. Syme's opinion, as already shown by a quotation from his writings, is unfavorable. It is known, also, (at least it was so stated by Antony White,) that bones cease to grow when their heads are excised, and hence a question whether the limb must not necessarily be short and unsatisfactory if the operation in question be performed in children, or before the bones had attained to maturity."

ART. 93.—*A Case of Fracture of the Femur by a Gun-shot Wound, in which the limb was saved.* By Dr. C. R. HARRIS, U.S.

(*Stethoscope* (U. S.), January.)

"I was called in great haste, May 19th, to see Mr. W. C—, aged 30, who had accidentally received a wound from a large rifle ball in the hands of a neighbour whilst exhibiting the gun in a crowd at a regimental muster.

"The ball entered a short distance above the insertion of the glutei muscles, and, going at an angle of 35 degrees, lodged or buried itself in the bone, where it remained, the fracture occurring about two and a half inches below the neck.

"The patient, being at a distance of six miles from home when the accident occurred, was carried to his residence on a litter by his neighbours previous to a permanent adjustment of the fracture. Before removing him, cold-water dressings were applied, the limb surrounded by a strong roller, to prevent undue contraction of the muscles, pain, and further displacement.

"On the morning of the 20th, assisted by my friend, Dr. Blair, we proceeded to adjust the fracture permanently. The patient had rested well the night previous under the use of the cold-water dressings and a little wine and water occasionally administered. Slight venous hæmorrhage during the night. Reaction induced during the night, and the patient expressed himself as feeling pretty well previous to the operation. The apparatus of Dessault, as modified by Dr. Physic, was applied. The patient complained of great pain, but

bore the operation well, and afterwards expressed himself as feeling quite comfortable.

"21st.—Patient complained of some uneasiness about the wound, with slight febrile excitement. Cold-water dressings continued, which had been freely applied since the occurrence.

"22d.—Considerable fever; pulse 110, corded and full; pain and heat of limbs increased. V.S. \bar{x} l Ep. salts and super. tartrate potassa. Bowels freely opened during the day.

"23d.—Slight fever; heat diminished; very little pain. Cold water frequently applied; solution of tartar emetic every four hours.

"24th.—Patient easy; no fever; slight heat of the limb; swelling diminished; no change in treatment. Barley-water acidulated allowed.

"25th.—Suppuration commencing; patient easy.

"26th.—No change. Rice allowed.

"27th.—Wound discharging more freely. Tea and toast.

"28th.—Slight rigors; little or no fever.

"29th.—Wound discharging freely. Chicken soup allowed.

"30th.—No change. Diet more liberal.

"July 4th.—Up to this date there was no change in the case, with the exception of an increased discharge of pus, with two or three spiculae of bone.

"5th.—Patient complains of great prostration. Liberal diet; quinia and port wine allowed every four or five hours. The patient had to contend with the dry and excessively hot summer, which added greatly to his uneasiness during his confinement in the months of June and July.

"16th.—Dressing removed in the presence of Mr. R. and Dr. Robertson. Fracture permanently united; the limb shortened only three quarters of an inch, the ring of primary callus giving the limb a deformed appearance; now there is no evidence of deformity.

"The patient is a hard labourer. The ensuing harvest after the injury, he himself cut thirty acres of wheat and rye (his own crop), and by increasing the height of the heel of one shoe slightly, you can scarcely perceive any unnatural movement in his walk."

ART. 94.—*Case of Severe Injury to the Knee-Joint, with Recovery without Amputation.* By ROBERT MARTIN, Esq., Holbrook.

(*Proc. Med. and Surg. Journal*, Aug. 18.)

[The following case is reported as establishing the fact contended for by modern surgeons, that severe injuries to large joints, even with extensive penetration of their cavities, do not invariably require amputation.]

"John Rumsey, aged 37 years, while mowing grass, March 8, 1849, fell with his bent knee on the edge of his scythe, which divided the whole anterior part of the joint, the ligamentum patellæ and lateral ligaments. To all appearance the leg hung by the integument on the back of the limb, by the posterior ligaments and the flexor tendons. The patella was retracted, and a breadth of four fingers could be

readily inserted between the head of the tibia and the condyles of the femur. On first visiting the patient, the question of amputation immediately suggested itself; but eventually the limb was placed in a comfortable position, with the heel raised, and the edges of the wound brought together with sutures.

"On visiting the case some hours after, Mr. Martin found the patient free from pain, the limb easy, and no constitutional disturbance. All went on prosperously for three days, when heat and pain, with profuse discharge, rendered it necessary to remove the dressings, the edges of the wound retracted, and the fearful extent of the wound became apparent; extensive abscesses formed in the course of the surrounding tissues, and high irritative fever set in. These symptoms, however, gradually yielded to treatment; and after fourteen weeks' treatment in bed, and a further confinement of three months, he was enabled to get about; and now, at the end of eighteen months, he again maintains a large family by his labour as a husbandman.

"It will be noticed, that although great pains were taken during the progress of ankylosis to keep the leg straight, yet the inflammation and consequent shortening of the biceps, flexor, cruris, and outer head of the gastrocnemius, have produced a necessity in progression for eversion of the foot.

"Although aware that Dr. Rhea Barton and Dr. Gibson, both of Philadelphia, are reported to have successfully operated for the removal of ankylosis of the knee-joint, I am too well satisfied with the result of this case to contemplate further interference."

[We had an opportunity of seeing the subject of this case, and were not more struck with the surprising power of nature in allowing recovery from so frightful a wound, than with the surgical skill which mainly promoted it.]

ART. 95.—*Popliteal Aneurism Successfully Treated by Pressure.*
By (1), Mr. CRITCHETT; (2), Dr. SWETTENHAM; and (3), Mr. HEATH.

(*The Lancet*, Oct. 9, and *Medical Times and Gazette*, June 5th.)

1. [Mr. Critchett's case occurred in the London Hospital, in a hawker, æt. 32, weak and unhealthy, and recently afflicted with laryngitis. The aneurism was as large as a small shaddock. Mr. Nathaniel Ward, who reports the case, writes as follows:]

"The compression plan was systematically commenced on the seventh day after the admission of the patient, who had been previously instructed in its nature, and the mode of carrying it out. Prior also to the instruments being used, the mattress, sheets, and pillows on which the patient lay were firmly fixed to the bed-frame, and the square pad on which the left limb, in a state of partial flexion and abduction was placed, was also fixed; and, at the bottom of the bed, a large pillow was secured by bandages, and served as a *point d'appui* for the right foot, so that, by this means, any gliding of the body could be avoided; a large cradle, finally, was placed over the body, in order that the bed-clothes should not interfere with the proper action of the instruments. One drachm of acetate of potash

was ordered to be taken three times daily; and the patient was placed on the middle diet without beer, and was requested to drink as little as possible. The hair was shaved from off the skin over the pubis, and the integument dusted over with flour.

"A variable, and occasionally interrupted, amount of pressure was maintained for eight days, through the medium of a four-pound meat weight (acting on a common tourniquet pad) to the groin; and a clamp at the thigh, applied at two distinct parts, the one two inches above the upper boundary of the aneurism, and the other a little higher. The weight at the groin and the clamp were alternately had recourse to. The former was kept on sometimes for one hour, at others for half an hour, and prior to its being removed, the clamp was adjusted, and was kept on for a period ranging from five to fifteen minutes.

During these eight days the patient slept at intervals four or five hours each night, the pressure of course being not so uniformly kept up as during the day, but the same method being followed out as far as possible. As the man regulated the application of the instruments almost entirely himself, the amount of annoyance from the pressure was soon tolerated. He found the application of the weight much more agreeable than the clamp.

"On the fourth day after the use of the instruments, a small superficial vessel could be detected pulsating along the inner border of the patella; and on the fifth and sixth the man had a sensation of pins and needles over the upper part of the tumour, which had become much harder and diminished in size, and sensibly hotter to the hand than the surrounding parts. The pulsation on the sixth day was just perceptible, and, on auscultation, only an impulse, like the first sound of the heart, but much more feeble, was detected. On the seventh day the hair was again removed from the groin and the middle of the thigh, and on the eighth day the pulsation in the aneurism had entirely ceased. Between the fifth and eighth day four or five small vessels were detected pulsating in the neighbourhood of the patella. On the ninth day after the aneurism was cured, another small superficial vessel was observed running over its centre. The pressure was continued for a week after all pulsation in the tumour had ceased, and the patient became an out-patient in the beginning of July, having been in the hospital fifty-two days. There was a good deal of œdema of the leg when he went out, but this gradually subsided after careful bandaging.

"*Remarks.*—In the treatment of popliteal aneurism by compression, one of the main elements of success appears to me to be a careful attention to the accompanying general details.

"In the two cases which I have had an opportunity of watching, these details were sedulously attended to, and thus rendered a method, which otherwise might have been attended with considerable annoyance, devoid of such, and of any particular distress to the patient. If it be borne in mind, that the individual, the subject of the compression treatment, must be confined to bed for a considerable period, and that, for the speedy and successful issue of the method, the slipping of the pads of the instruments away from the artery should be avoided as

much as possible, the necessity will be at once apparent of firmly fixing the pillows, mattress, bedclothes, &c., as also the pad on which the affected limb rests. The ease and comfort of the patient while recumbent are thus, moreover, materially aided, and, from the circumstance of a large cradle being thrown over the body, he can manipulate the instruments with freedom and facility. The shaving of the hair from off the parts of the limb subjected to the pressure of the pads; and the constant use of flour, oxide of zinc, or French chalk, are also matters of the greatest possible importance; and it should have been mentioned in the description of the above case, that the instruments having been applied for a short time without these measures having been taken, the patient complained of the pain having been most severe, and barely tolerable. It may appear, at first sight, trivial to make much of such matters, which have been strongly insisted on, I believe, by the Irish surgeons; but experience forcibly points out the necessity of attending to them.

"The constitutional measures must, of course, vary with the condition of the patient. These have been fully considered by Dr. Bellingham in his recent valuable communication on the "Treatment of Aneurism by Compression," published in vol. xxxiv of the "Transactions of the Medico-Chirurgical Society;" and those adopted in the above case are merely interesting as confirming the propriety of his remarks.

"I am strongly of opinion that if the treatment, general and local, recommended by him, Mr. Tuffnell, and others, be carefully and attentively followed out, there are but few cases in the class of aneurisms adapted for the compression treatment in which it would not be found to answer."

2. [Dr. Swettenham's case occurred in the Naval Hospital at Gibraltar, in an able-bodied healthy seaman of H.M.S. Phaeton. The aneurism was about the size of a pigeon's egg. The essential particulars are the following:]

"On the 15th of July, the instruments at hand above alluded to were attempted to be adjusted; but being found in many respects objectionable, and requiring some alterations, were not reapplied until the 21st, when both the pelvic, or upper instrument, and the lower, or circular, were put on at the same time, with the thigh kept slightly bent on the pelvis, and the leg on the thigh, resting on a pillow. The pressure was first commenced on the pubis. He was duly instructed as to the *modus operandi* of the cure, and directed that when the pain became severe he was to relax the upper and screw on the lower instrument; which was left lax on the thigh at the upper third. During the first and following day, he was unable to bear the pressure of either instrument for a longer period than half an hour to an hour—sometimes less; and experienced considerable pain in the calf of the leg, as well as along the tibia. It was, however, remarked that he bore pain unusually long; and, being an intelligent man, he controlled the circulation by the feeling of pulsation in the tumour, which he was sensible of, and which he was cautioned not to obstruct completely.

"On the 22d, he says he passed a restless night, from pain in the knee; but towards morning he relaxed the instruments, and slept; a slight turgescence of the veins around the knee being only perceptible when pressure was put on. The temperature of the limb is not much lower than the opposite; it has a flannel roller applied. The pressure throughout this day was kept up regularly and alternately with the two instruments, and at no period entirely obstructing the pulse in the tumour, or discontinuing pressure. He had each night, from the 15th, half a grain of acetate of morphia, and eight drops of tincture of digitalis, as a draught.

"23d. The tumour is sensibly harder, and a few turns of the screw of the lower instrument easily controls the circulation through it. The pressure from the pad in Scarpa's angle has irritated the integuments, and the lower instrument was moved down, and pressed on the artery in the middle third of the thigh: this enabled him to bear the instrument on a much longer time, and being without sleep, he observed the pressure having regularly and completely controlled the pulse in the tumour during this night.

"In examining the limb on the morning of the 24th, I relaxed both instruments, and found the pulsation of the tumour quite ceased; nothing more than a *fremitus* perceptible. The instruments were kept on the thigh, with but slight pressure, to ensure safety, for the two successive days. The tumour felt hard, and he complained only of stiffness in the knee-joint. The temperature of the limb was somewhat less, but no œdema whatever occurred, nor was there any lividity visible during the whole period of pressure.

"26th. The tumour is perfectly solid, and diminished in size; feels no inconvegence but rigidity of the limb, and his health has in no way suffered.

"31st. Is walking about the ward, able to extend the limb, and place his weight on it; surface of the tumour painted with iodine; and gentle friction is relieving the rigidity.

"August 13th. Still in the hospital; the tumour in the ham is not larger than a Spanish filbert; has perfect good use of the leg; the pulsation of the femoral artery felt to the inferior third of the thigh, likewise in the collateral branches; is in very good health, but the heart's action has been feeble throughout; and upon minute examination of the aorta in the epigastric region, a soufflet is audible, distinct from the heart's action; from which fact it is my intention to invalid him from the service, the fleet at present lying in the Bay."

3. [The two following cases occurred in the Newcastle Infirmary under the care of Mr. Heath, and are reported by Mr. G. A. Hutton:]

"Case 1.—J. B—, æt. 48, blacksmith, admitted October 30th, 1850; a pale, sallow-looking man, a hard liver and drinker; has popliteal aneurism of the right extremity, which commenced six months ago as a small pulsating tumour. He did not pay much attention to it, until pain and numbness of the limb and increase of the swelling obliged him to lay up.

"At present, the foot and leg, up to above the knee, are much

swollen and cold; the knee is a good deal bent and fixed. The limb around the tumour measures in circumference $20\frac{3}{4}$ inches. The opposite limb at the same part $12\frac{1}{2}$ inches.

"To be kept quiet, and a cold lotion applied to the part.

"Nov. 3d.—The screw tourniquet of Weiss applied to the femoral artery.

"4th.—The leg is more swollen; there is some ecchymosis over the tumour, and at one side of the patella. The leg and foot are quite warm. He bears the pressure tolerably well. Two tourniquets are in use, which are slackened alternately, in order to avoid pain and excoriation.

"The increased swelling and ecchymosis appear to have been caused by the pressure produced when making a cast in plaster of Paris of the tumour.

"15th.—The ecchymosis is fading; he now bears the pressure much better.

"The limb to be firmly bandaged from the toes, and the pressure continued as before.

"20th.—Mr. Bellingham's instruments for applying pressure were substituted for those of Weiss.

"29th.—The tumour is diminishing in size; the patella is more defined, and the ecchymosis nearly gone; general health improved.

"Continue as before.

"Dec. 13th.—The bandages removed from the limb. The tumour continues in the same state as at last report; has no pain; bears the pressure well.

"Continue as before, but the pressure to be relaxed a little.

"Jan. 10th, 1851.—Compression removed altogether; no pulsation can be detected in the tumour; the articular arteries are felt distinctly pulsating. The tumour is not much diminished in size, but it has a soft, elastic feel.

"An elastic bandage to be applied to the limb.

"24th.—Since last report, he has continued to improve; complains of no pain; gets up and walks about on crutches. The tumour remains in the same state.

"Feb. 4th.—He is very unwell; erysipelas commencing about the knee of the affected limb.

"9th.—The limb is much swollen; the erysipelas now extends from the toes to above the knee. The tumour fluctuates distinctly.

"12th.—The tumour burst to-day, and about twelve ounces of dark matter, resembling coffee grounds, were discharged, but there was no hæmorrhage.

"23d.—He feels much better; considerable discharge from the opening in the tumour. Several portions of firm coagula of blood have been evacuated; no hæmorrhage.

"March 16th.—Since last report he has considerably improved; scarcely any discharge now; sits up and walks about occasionally.

"21st.—He is very unwell again this morning; erysipelas present from the toes to above the knee; breathing with difficulty. These symptoms increased, and he sank and died on the 22d.

"Remarks, &c.—Previous to the examination of the limb, the

femoral artery was injected with plaster of Paris. On dissection, the femoral artery was found injected down to the sac; the sac itself was filled with injection, lacerated in several places, and the injection extravasated into the surrounding tissues. The posterior tibial was partially injected. This case presents us with an instance of popliteal aneurism cured by pressure, but the ultimate result was unfortunate, the patient sinking at length from repeated attacks of erysipelas prevalent at the time. The patient was not a very favorable subject for any mode of treatment; his constitution had been injured by hard living; the tumour itself had attained great size, and interfered with the circulation of the limb, which was greatly swollen and cold. The complete cessation of the pulsation, however, and the absence of hæmorrhage when the sac gave way during the first attack of erysipelas, show that a coagulum must have formed at the entrance of the artery into the sac, thus cutting off its cavity from the general circulation. The coagulum was not probably very firm, as the injection was found after death to have made its way into the sac by the main artery. No conclusions adverse to the pressure treatment can be drawn from this case; erysipelas, indeed, would have been even more likely to have attacked the limb had a wound been made and the artery tied. In the broken-down constitution, too, of this patient, the risk of purulent infection, which we sometimes see follow the most insignificant wound, would have been very great. The *post-mortem* examination shows that, as Mr. Bellingham has already stated, the artery is not obliterated at the point where the compression is applied.

"Case II.—The following case, which I have taken from Mr. Heath's Case-book, occurred before I became dresser.

"E. O—, æt. 41, labourer at the Glass Works; healthy man, of temperate habits; admitted August 4th, 1848, with pain of the left knee, and swelling of the leg from the middle of the thigh down to the toes. The leg is very œdematous, and colder than the other. There is a tumour extending from about the lower third of the femur to two inches below the popliteal space, with distinct pulsation and bellows murmur in it. The circumference of the limb around the tumour is 20 inches; the opposite limb, at the same part, 15½ inches. It was observed only a fortnight ago, and was then a considerable size. He knows no cause for it. General health good.

"9th.—Pressure applied to the femoral artery with Weiss's screw tourniquet.

"15th.—The tumour feels softer; the pulsation is much diminished; the circumference 19½ inches.

"22d.—The tumour and the general swelling and œdema of the leg diminishing. The temperature of both limbs is now about the same.

"Sept. 1st.—Can now get up and walk about a little. No pulsation can be detected in the tumour. Popliteal space much more defined. Pressure removed.

"29th.—Greatly improved; has no pain; the swelling is much diminished; can walk well now.

"Oct. 15.—The circumference of both limbs the same; a little hardness remains in the popliteal space. Cured.

"This man remained perfectly well in the autumn of 1850.

"*Remarks.*—This case affords a striking contrast to the preceding one, and presents us with a very favorable specimen of the pressure treatment. The patient, seven years younger than the subject of the first case, was of sound constitution and temperate habits. The case was so far complete at the end of three weeks, that the pressure was then safely removed, and the patient might have left the hospital a month earlier than he did, had it not been thought right to detain him for a time, with the view of watching the diminution of the sac. The cure of the disease was here effected as rapidly, with as little pain, and certainly with less danger than if the operation of tying the artery had been performed."

ART. 96.—*Amputation at the Ankle-joint, versus Chopart's Operation.*
By Professor SYME.

(*Monthly Journal of Medical Science.*)

[The following remarks occur in one of Professor Syme's recent clinical lectures:]

"There are at present in the hospital two cases requiring amputation at the ankle-joint. In the girl 14 years of age, who is now before you, there is extensive disease of the tarsus, not leaving room for the performance of Chopart's operation, even if I deemed it expedient, which I have long ceased to do, from conviction of its inferiority to that of the ankle, especially in regard to the protection afforded against relapse. In one year alone I performed three secondary amputations at the ankle to remedy the sequela of Chopart's operation. This patient has been sent here to suffer whatever may be thought necessary, and I do not hesitate in deciding upon amputation at the ankle, which, while effectually removing the disease, will enable her to retain a limb hardly diminished in length or impaired in utility; and, what is of still more consequence, will expose her life to much less danger than removal of the leg would do. This difference depends upon the smaller portion of the body abstracted—upon the branches instead of the trunks of blood-vessels being divided—and upon the cancellated texture of the articulating extremity which is exposed, instead of the dense substance and medullary cavity of the bone. That the operation would prove safer than amputation below the knee, I anticipated from theoretical considerations, and am now able to establish on a large experience. If a patient's dissolution is inevitable from other causes, I do not mean to say that cutting off his foot will save his life; but the operation itself I believe to be as free from risk as the removal of a finger or a toe. The great and obvious advantages just mentioned have quickly established amputation at the ankle-joint in Scotland and most parts of the Continent; but in England and its capital the progress of the operation has been very slow; and as so many of you are connected with that country, I may mention what seems to me the probable explanation of this. If Mr. Liston had lived longer, the case, I believe, would have been different, since he had adopted this mode of amputation, and shortly before his

death performed it twice with complete success—the second of these operations being the last he undertook. I had an opportunity of seeing both the stumps, and can testify to their excellence. But of the surgeons at present in London, the only one who has openly espoused amputation at the ankle-joint is the professor of Surgery at King's College, who some time ago published five or six cases of its performance by him; in all of which, with one exception, so far as I recollect, there happened either death of the patient or mortification of the flap. Indeed, he at the same time expressed his conviction that sloughing was unavoidable. Now, such untoward advocacy—such damnatory evidence, professing to come from a friendly quarter, could not but prove more detrimental to the character of an operation than either silence or direct hostility; and when from the same, as well as other sources, were added representations as to the extreme difficulty of the operation, together with serious doubts as to the comfort and usefulness of the resulting stump, it is not surprising that there has been excited a prejudice which may require some time for its removal. Upon you who have an opportunity of judging from your own observation, rests the obligation of counteracting such groundless and injurious misrepresentations. You see that the operation is accomplished, without the slightest attempt at hurry, in less than a minute, and therefore cannot be very difficult—that the flap does not slough, unless through some error in the operation or after-treatment—and that the stump is so perfect that it may be used, even without any protection whatever, for standing, walking, or running.

ART. 97.—*On Corns, Bunions, and In-growing of the Toe-Nail; their Cause and Treatment.* By J. T. ASHTON, Esq.

(Treatise; John Churchill, Princes Street, Soho, 1852.)

[The following quotation from the paragraphs on the treatment of corns is a specimen of the contents of this very useful little book:]

“By proper and judicious treatment, a patient with corns may be maintained in comfort, but the disease cannot be entirely removed without the removal of the predisposing cause, namely, the malposition of the toes, and wearing boots and shoes not fitted to the feet.

“A common practice prevails with chiropodists for the purpose of relieving pressure, of applying pieces of thick leather, spread with adhesive plaster, and having a hole in their centre over the projecting joint where a corn is situated. For a short time this answers the purpose intended, but soon increases the evil designed to be remedied, by the joint becoming more angular, and peering through the aperture in the leather, the thickness of which is then from time to time increased, till at last the phalanges of the offending toe are completely doubled one on the other, and the second state of the patient is rendered worse than the first.

“A corn having formed, it is necessary that the indurated cuticle composing it should be removed, so that the tender cutis beneath may be relieved from pressure and irritation. This may be done by various means, as by the application of nitrate of silver, or the con-

centrated nitric acid, or by reducing it by means of friction with some rough substance, or by removing it with a small sharp scalpel, a method much simpler, shorter, and better than the preceding.

"After a corn is removed, its re-formation may be greatly retarded, but not entirely prevented, by the proper application of plasters and pads to relieve the parts from pressure. For this purpose, leather is very objectionable, from its becoming hard by the perspiration of the foot. The plaster acts beneficially in two ways,—first, the pressure of the boot is diffused over a larger surface; secondly, the resinous matter of the plaster prevents the induration of the cuticle. When the integument beneath a corn is irritable and painful, benefit will arise from the use of a plaster composed of alcoholic extract of aconite and lead plaster spread either on amadou or soft felt.

"The evil arising from the use of pads intended to relieve pressure has been adverted to. This may be remedied by applying a piece of thin plaster over the toe previous to the application of the pad,—which should not be formed of buckskin or other leather, but of amadou, or felt somewhat similar to that used for the hammers of pianofortes, only of fine wool;—by this means all bulging of the joint will be prevented. If the toe be inflamed, water-dressing should be applied, which will be found equally efficacious and much less inconvenient than a poultice.

Should suppuration occur in the bursa beneath a corn, the existence of which will be known by increase of pain, the corn having a pearly-white appearance in the centre, by the redness and swelling of the toe and foot, and by the constitutional disturbance not unfrequently produced, no time should be lost ere the confined matter is evacuated, and which will be followed by immediate relief.

ART. 98.—*Onychia, or Inverted Toe-Nail.*

By E. LACY, Esq., of Poole.

(*Medical Times and Gazette*, Aug. 14.)

[Mr. Lacy thinks that the ulcerated parts in this affection are in that state because they have lost the natural support of the nail, and his treatment consists in the application of escharotics and carefully adjusted pressure. He first passes nitrate of silver over the fungus, and then puts on a coating of the nitric oxide of mercury. Afterwards he makes an artificial nail of a piece of cork and fixes it firmly in position by means of adhesive plaster. The pain is usually transitory and trifling, and if not it is of no great moment, as the dressing does not require to be renewed for three or four days.

The following are the deductions to which he has arrived after five and twenty years' experience:]

"1. If the nail, or any portion of it, be separated from its secreting surface, or cells, the natural defence to the latter is gone, and a sprouting ulcer (pterygium) is produced, which is not readily curable by any plan hitherto recommended for that evil.

"2. That when this fungus is produced, it impinges on the adjacent edge of the nail, and being highly sensitive, causes intense pain, inflammation, &c.

"3. If on the toe, the weight of the body, when in an erect posture, pressing the flesh upwards, increases the impingement, so does the lateral pressure of a boot or shoe.

"4. That the filing away the edge of the nail, the scraping it, the lifting it up with stuffing, the mere application of escharotics, and the use of the scalpel (without it is meant to remove the secreting cells as well as the nail) is bad, and is no improvement on the practice adopted by Aëtius, Celsus, Haly, Abbas, &c. (See the Sydenham Society's edition of 'Paulus Ægineta.')

"5. That the tearing away the nail, either wholly or in part, but rarely cures; it affords present relief, but if the after-treatment be not such as to keep the pterygium and entire fleshy margin (nail-band as it is called) from encroaching on the surface secreting the new nail, the case of the new nail is often worse than that of the old one. That the mode of operating was not defective may be implied from the fact that in one case (that of a banker at Manchester) the late Mr. Liston was the operator.

"6. That poultices, water dressing, and unguents, encourage the growth of these excrescences.

"7. That no convex, or thickened nail, should be cut at its lateral edges to prevent its 'growing into the flesh,' without it is (as some are) detached; when the secreting surface being already so far perished, no injury follows cutting the nail.

"8. That the least painful, the readiest, and the surest way to cure, is the reverse of that hitherto adopted; that the natural defence and pressure of the nail should be imitated, not further removed; and that the flesh around the nail should be kept from tre-passing on its edges, whilst pressure on the fungus reduces it to a proper level, and restores its healthy functions. It is the practice, in fact, necessary to adopt after the operation of removal, if that operation is to be successful.

"9. That the arg. nitr. allays the inflammation; that the hydr. nitr. ox. rubr., not only acts as an escharotic and stimulant, but forms, after two or three applications, a coating which acts as a defence, and with the pressure, assists the reduction of the ulcerated excrescence, as well as the healing process.

"10. That it is bad practice to remove this coating, however dirty it may look (from the lead in the empt. adhes.), though the surrounding parts should be wiped clean at each dressing.

"11. That cork being flexible, and easily reduced to any required shape, is the cheapest and best substance with which to make gentle and uniform pressure.

"12. That, if the 'union of the papillary layer of the dermis, with the lamellated structure of the nail;' or, if the nail band be ruptured by an abscess, the nail being intact, an excrescence will frequently follow, but that such is curable by pressure alone."

PART III.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A.) MIDWIFERY AND DISEASES OF WOMEN.

ART. 99.—*How to form a correct estimate of the Dimensions of the Female Pelvis.* By G. VROLIK.

(*Nederlandsch Lancet, and Monthly Journal of Medical Sciences, Sept. 1822.*)

Vrolik asserts, that no writer on obstetrics, from J. L. Baudelocque to J. E. Rosshirt, whose works he has referred to, proceeds upon a sure principle in estimating the dimensions of the female pelvis, and, in particular, of the inlet of the lesser pelvis. On the contrary, the oblique measurements should not be taken in a direction so which it is certain that the fœtus cannot naturally be accommodated, nor should the transverse diameter be taken so far back or forwards as to bear no necessary relation to the head of the child. To exhibit that correspondence between the fœtus and the aperture necessary for the passage of the former, all the lines of diameter should, according to Vrolik, be so drawn as to intersect each other in the central point of the brim of the lesser pelvis. This holds good no less of the transversely oval and obtusely heart-shaped pelvis, than of the round pelvis of the Javanese and of some European women. The direction of the oblique diameter, in order to correspond with the place which the head must occupy at the inlet, should not be from the sacro-iliac synchondrosis to the upper part of the pectineal eminence, or ischio-pubal synostosis of the opposite side, but to a point a few lines further forward on the horizontal ramus of the pubes, *i. e.*, excluding about three-fourths of the length of the ramus. (In his illustrations of the different forms of pelvis in different races, published in 1826, Vrolik has already pointed out this.) If a fœtal head of average size be applied to the pelvic inlet, with its long diameter in any other oblique direction, whether more forwards or backwards, resistance will immediately be experienced either against the promontory of the sacrum, or one of the superior rami of the pubes. What is true of the inlet, continues true of the passage and outlet, for the centre of the inlet is to be regarded as the axis of the lesser pelvis. Vrolik further points out, that the antero-posterior diameter of the outlet is by most authorities represented by a line touching the extremity of the coccyx while that bone is directed forwards; if the line be drawn to the coccyx directed backwards, its middle point will, as at the brim, be also the centre of

the transverse diameter. Ritgen, who assumes four diameters drawn through the middle point of the inlet, cavity, and outlet of the lesser pelvis, has, in the determination of his measurements, proceeded upon an erroneous principle. The head, in the successive positions which he believes to be necessary for natural labour, must, before leaving the mother's body, describe a half circle; but as the body, firmly embraced by the contracted uterus, cannot follow all these movements of the head, displacements of the cervical vertebræ, or rupture of their ligaments, would frequently ensue.

ART. 100.—*On the Manufacture of Sponge Tents.* By Dr. RIGBY.

(*Medical Times*, Dec. 6, 1851.)

[The following directions are given:]

"A piece of tolerably fine sponge, previously well dried, should be soaked in *Mistura acaciæ*, and rolled up into a cylindrical form, somewhat in the shape of a small cigar, tapering to a point at one end. The other, or thick end, must be rolled round a middling-sized awl, partly for the purpose of leaving a central perforation into which the end of the instrument which carries it is to be inserted, and partly to fix it, while a piece of stout cord is wound tightly and closely round it from the thick end up to the point. By this means, the sponge is is powerfully compressed into the cylindrical form above mentioned, and, if well dried, becomes as hard as a piece of wood, and retains its compressed state perfectly when the cord is removed. Any little projections or roughnesses may be trimmed off with a sharp knife; and, lastly, the tent is to be dipped several times in melted tallow rendered harder by the admixture of a little white wax, until it has become thickly coated. A piece of string or tape is fastened to the lower or thicker end to assist in removing it from the os uteri when expanded. The heat of the part soon melts the unctuous covering, and thus enables the tent to slide up in its own grease as it gradually melts, when otherwise it might have been difficult to introduce it. The secretions of the part slowly pervade the sponge, and dissolve the hardened gum with which it has been soaked, and the sponge gradually expands as it returns to its full size.

"Twelve hours is usually a sufficient period to effect this in; and the degree of dilatation produced will guide us as to the introduction of a larger tent on the removal of the first."

ART. 101.—*On Sudden Death in the Puerperal State.*

By ALFRED M'CLINTOCK, M.D., &c., Dublin.

(*Dublin Medical Press*, March 10, 1852.)

[The author of the following paper has endeavoured to elucidate a subject which has not met with much attention. According to him, though numerous instances of sudden death after delivery have been recorded, there has been no systematic inquiry into their causation, and it is this defect which he is anxious to remedy. He thus proceeds:]

"Writers on medical jurisprudence recognise three diseases which may rapidly extinguish life and leave no morbid appearance; which are, the simple apoplexy, of Dr. Abercrombie, syncope, and asphyxia. No unequivocal instance of the first, in a puerperal patient, has come to my knowledge; but of the latter two some instances may be adduced. Idiopathic asphyxia causes death almost instantaneously, or in a few minutes. The symptoms are those of fainting; and the only appearance in the dead body is flaccidity of the heart, with unusual emptiness. Of this an example has been recorded by Dr. Beatty.

"M. Chevallier's original paper on the disease was published in the first volume of the 'Medico-Chirurgical Transactions,' and he there narrates an example of sudden death from this cause, in the person of a lady who had given birth to twins about three hours previously. He himself conducted the post-mortem examination of the body, and from what he there found, he inferred that death could only be attributed to this peculiar species of asphyxia. The same author also cites from Morgagni a case of rapid death in childbed, in which the necroscopic appearances led him to think that the woman's existence was terminated from the same cause. I am much indebted to the kindness of Mr. Barker, of Cumberland-street, for the permission to mention here the circumstances of two cases that came under his own observation some years ago, which serve very forcibly to illustrate this part of my subject. In each of these cases, death took place quite suddenly and unexpectedly, not very many days after delivery. In both instances a coroner's inquest was held, which was the occasion of Mr. Barker's knowing anything about them. As may be well supposed, he submitted the bodies of these women to a very extensive and close scrutiny, but he failed in discovering anything to account for death, except an unusual flaccidity of the heart, with a complete absence of blood in its cavities. We may fairly conclude with him, therefore, that dissolution was the result of idiopathic asphyxia, or of some cognate syncopal affection.

"These cases require no comment. The evidence they contain of death having been produced by the operation of a cause similar to that pointed out by M. Chevallier, is to my mind conclusive. That there are not more instances of the kind to be found recorded may, in some measure, be accounted for by the attention of observers being too exclusively directed to the abdomen in their examination of these cases post-mortem; and secondly, from the fact of the subject of M. Chevallier's paper not having been as generally known and understood as it ought to be. If the actual possibility of such a cause of death as this be admitted, there is no reason that I can see why a puerperal woman may not be the subject of it. Further, if we look upon the idiopathic asphyxia of M. Chevallier as nothing more than a variety or form of syncope, the liability of its invading a woman in childbed becomes still more apparent, from the state in which her constitution is left by the act of parturition—a state, of which the prominent characteristics are, an unusual proclivity to diseased action—an excitable condition of the vascular, and a morbid susceptibility of the nervous system. The shock of labour is not recovered from for many days,

and during this period (the length of which necessarily varies under different circumstances,) the *vis vitæ* is minus: hence any impression of a severe kind, whether affecting the mind or body, is not met by same vital resistance as at other times. With these well-known facts before us, there need be little hesitation in our drawing the conclusion, that many of the unexplained cases of sudden death in the puerperal state, are to be ascribed to idiopathic asphyxia, or fatal syncope.

"Let us now pass on to the consideration of some of the other reputed causes of this catastrophe. It is an acknowledged law, that protracted pain exhausts the principle of life, and in this way it is attempted to account for some of the anomalous cases of speedy dissolution after delivery. Touching this point, Mr. Travers has given some observations which it would be culpable to omit, coming from so high an authority. 'Pain,' says this author, 'when amounting to a certain degree of intensity and duration, is of itself destructive. Difficult and protracted parturition is every now and then fatal from this cause; and even in cases in which neither extraordinary difficulty nor protraction was experienced, a fatal prostration has sometimes supervened which has admitted of no other explanation. The delivery has been complete, without any degree of physical injury, and not more than an ordinary quantity of blood has escaped from the vessels of the uterus. Yet the woman, in spite of the encouragement derived from the consciousness of safety to herself and infant, and of comfort from the conclusion that her sufferings were at an end, has never rallied either in strength or spirits; but after an interval, not exceeding a few hours, passed in a low and sinking state, has unexpectedly, and with little perceptible alteration, expired.'—(*Inquiry*, 2d edit., p. 48.)

"In a large proportion of the cases, where this state of prostration or collapse has manifested itself, there had existed some time previously a strong mental impression or foreboding of disaster, which presentiment, as it is termed, must have contributed materially in bringing about the fatal result. That a lengthened occupation of the mind by one dominant idea of a gloomy character should exercise a marked depressing influence upon the vital energies, is a fact of which every physician is fully aware, and of which there are innumerable examples on record."

[The author quotes several cases illustrative of this form of sudden death, from Dr. Ramsbotham, Mr. Travers, and Dr. Gartlau of Dundalk, he then continues to notice the further literary history of the subject, alluding to the entrance of air into the uterine sinuses as a cause of the catastrophe; which reputed cause we have had occasion to notice in a former volume.]

"About the year 1808, Le Gallois, in the course of some experiments upon animals, observed in three different cases air to penetrate into the vena cava from the uterine veins, and that this was followed by instantaneous death. His son, writing twenty-one years afterwards—viz., 1829, after citing these experiments, asks this question: In many of the cases of sudden death after delivery, might not this event have been caused by the entrance of air into the circulating system through the uterine vessels? We find Ollivier repeating the same suggestive query in 1833, in the article 'Air' of the 'Diction-

naire de Médecine.' Since then, the advance of obstetric knowledge has placed nearly beyond a doubt the possibility of such an occurrence, and thus added one other to the manifold causes of death in the puerperal state. To Dr. Rose Cormack belongs the praise of having elucidated this very obscure subject; and of his instructive essay I have largely availed myself in the subjoined remarks. His experiments and reasoning, together with subsequent observations, justify our drawing the following conclusions—1st, that the admission of a certain quantity of air into the current of the circulation is capable of destroying life almost instantaneously—a fact, indeed, which the records of surgical practice fully corroborates; 2dly, that the possibility of air occasionally finding an entrance into the vascular system through the uterine vessels, seems highly probable; and 3dly, that in some few instances of sudden death soon after delivery, the only cause for the catastrophe which a minute inspection of the body could discover, was the existence of air-bubbles in the heart and vena cava.

"It would be irrelevant to my present purpose to enter into the general question of the history and pathological effects of the presence of air in the veins. Those who are desirous of an enlarged acquaintance with this interesting topic, I would beg leave to refer to an essay by the late Dr. John Reid, published in the same volume with his other researches. This will be found to contain a most able and comprehensive analysis of all that is known on the subject.

"The mechanism, so to speak, by which the introduction of air into the uterine veins can be effected, admits of being explained in a few words. The veins of the gravid womb present four remarkable characters—namely, their extraordinary large size; their freedom of inoculation; the total absence of valves; and their termination on the internal surface of the uterus at the site of the placenta, by large open orifices. If the uterus be examined soon after delivery at the full term, the majority of these apertures will readily admit a goose-quill, and some will even allow the little finger to penetrate without laceration. During contraction of the uterus, all these openings are hermetically closed, but when it is relaxed they again become proportionately more or less patulous. From this it is manifest that the same condition of the organ which causes flooding, is exactly that which is indispensable for the ingress of air; so that the latter, when it does take place, is almost of necessity preceded or accompanied by hæmorrhage. This fact is of some value, viewed in connection with the history and progress of those cases where it was supposed that air had gained admission into the circulation through the uterine veins after delivery; for Amussat found in his experiments upon the entrance of air into the venous system, 'that the period of death was hastened considerably in those animals whose vessels had previously been depleted of part of their blood.' (Reid.) But, it will naturally be asked, does the air ever gain access to the uterine cavity, for otherwise it could not possibly find its way into the vessels of the womb? This question, I am of opinion, can safely be answered in the affirmative. Confining ourselves to the simple matter of fact, it may suffice to state, that Professor Meigs assures us he noticed the expulsion of

air from the uterus immediately after delivery, 'a great many times.' Dr. Rose Cormack has made the same observation; and I have myself remarked a similar occurrence on at least three or four different occasions. Dr. Meigs, in his Letters to his Class, minutely describes the process by which the air is drawn up into the uterus; but it is unnecessary here to quote his remarks. With these considerations before us, then, we are in a position to adopt the language of Dr. Cormack:—'I have, therefore (writes this gentleman), not only no difficulty in believing, but am constrained to admit that, should any impediment be offered, in such cases, to the free exit of air by the os uteri, it must be forced into the uterine veins, were their mouths not protected by coagula; and thence it would rapidly pass, by the current of the circulation, up the vena cava into the right auricle.' ('London Journal of Medicine, vol. ii. p. 941.')

"The intensity of the symptoms when air is taken up by the uterine veins would seem, as in other cases, to depend very much on the quantity, and on the condition of the patient. Death may ensue in a few moments from the rapid distension of the right auricle with air, and its consequent inability to contract. This first danger over, she may still perish at a remoter period from asphyxia, induced by gradually augmenting pulmonary obstruction.

"Dr. Cormack refers, in support of his views, to seven cases from different authentic sources, in all of which death was supposed to have been more or less directly occasioned by the passage of air through the uterine veins into the vena cava and heart. These cases, taken collectively, form a body of evidence which it is hard to refute. In six of them, the presence of air in the veins was demonstrated upon inspection of the body, and no one of these cases exhibited any other morbid lesion adequate to account for death. In all, with a single exception, where there was prolonged retention and putrefaction of the after-birth, the fatal event took place within a very few hours after parturition. The symptoms which presented themselves in these cases were very various; and those most frequently observed were by no means pathognomonic. Great anxiety of countenance, embarrassed respiration, with a sense even of impending suffocation, and a weak, rapid, faltering pulse, seem to have been the prominent features of the cases where there was time for the development or observance of symptoms.

"Besides the seven instances above alluded to as being adduced by Dr. Cormack, I find another recorded in the 'Provincial Medical and Surgical Journal' for November 27, 1850, by Mr. Berry. The leading features of this case it may be well to give. A woman, æt. 22, was delivered of her first child after a natural labour, at seven in the evening of June 17, 1850. The placenta came away in twenty minutes, unattended by any immoderate loss of blood. At half-past eight, she expressed herself comfortable, and at eleven took some gruel. At one o'clock of the same night, her husband, who lay in the room with her, became alarmed by the patient's difficult breathing and feeling of faintness, and immediately sent for her medical attendant, but before his arrival, at two o'clock, she was dead. She lived seven hours after delivery. 'The cause of death could not be accounted for

as there was no hæmorrhage, and apparently nothing in the condition of the patient to prognosticate such a termination. . . . Upon opening the abdominal cavity, the uterus was seen midway between the umbilicus and pelvis, the peritoneum covering it, and the intestines healthy, but pale; the stomach contained a small quantity of fluid; liver healthy; the kidneys presented a granulated appearance, and the urine which remained in the bladder was ascertained to be, by the application of heat, slightly albuminous. Upon cutting into the uterus it was found empty, and the vessels where the placenta had been attached, patulous; the vagina contained, at its superior part, a moderately-sized clot of blood; within the chest, both lungs were congested, and contained scattered tubercles within upper lobes; the heart was the size of a male heart, and apparently distended. Upon making an incision into it, a gush of air escaped, and the organ became flaccid; no blood was found in its cavities. About an ounce of serum was observed in the pericardium. The brain was healthy in every respect. No signs of decomposition existed in any part of the body. From the remarks of the writer of this case, it is plain the impression on his mind was, that the immediate cause of death could have been no other than the air in the heart. If this conclusion be denied, we are met by the question—How, then, is the woman's sudden decease to be accounted for? It is hardly possible, I think, that the granular disease of the kidneys which she appears to have had, could have brought about the fatal event. This, however, I leave for the Society to determine. One point in the case deserves some consideration before admitting it to possess any value, and it is this, the examination of the body was not made for at least fifty hours after the woman's death, which, be it remembered, took place in the month of June. Mr. Berry has expressly stated that there were no signs of decomposition present; still the fact I have mentioned diminishes in some degree, perhaps, the importance that would otherwise justly belong to the unusual circumstance of air being present in the heart. Dr. John Ramsbotham narrates a case which I am tempted to introduce here, from the resemblance in many of its features to the foregoing history, and from the presumptive evidence it affords that if special search had been made for it, air might probably have been found in the heart, and thus explained the cause of the patient's unexpected death. It was the lady's first child, and the labour was tedious, requiring the use of the forceps. 'A dead child was soon produced into the world without any particular difficulty or accident, and as soon as it was born a quantity of offensive gas, with that olive coloured fluid elsewhere mentioned, escaped from the vagina. Uterine action did not seem disposed to return, and after waiting some time a separated placenta was withdrawn. After this the uterus felt well contracted, and the woman was left in a favorable state between two and three o'clock. In the evening my friend called to inform me that this poor woman had died very suddenly and unexpectedly between five and six. All he knew about the matter was, that he was called in a hurry to the poor woman, who was represented to be in a fit, but he found her dead, with her belly much swelled. Anxious to learn the cause of so melancholy an occurrence, leave was obtained to open the body, which

was inspected the next morning. . . . On dividing the parietes the intestinal canal was seen somewhat distended with gas, but the rest of the viscera were healthy. The uterus was much extended and felt flaccid; and on pressing it a quantity of fetid gas escaped from per vaginam; after its escape the organ became still more flaccid. On opening into its cavity there was only one small coagulum at the os uteri. The appearance of the uterus on dividing the abdominal parietes was not unlike one at the fifth or sixth month of pregnancy. I must confess (continues Dr. Ramsbotham) that before the uterus was handled or opened, I suspected death to have been occasioned by internal hæmorrhage: that certainly was not the case.' (Op. cit., p. 122.)

"Now, from what has preceded, it may be safely asserted, that if the possibility of death from the admission of air into the uterine veins be not established on conclusive evidence, enough has still been adduced to show the absolute importance of making special examination for its presence in all obscure cases of sudden death following parturition. In conducting this examination our attention should be chiefly directed to the heart and vena cava. If air exist in the latter, it will probably be discoverable through its coats; at all events, before cutting into it the heart should be taken out. Previously to doing this the great vessels leading to and from the organ should be tied, and then after its removal the right auricle and ventricle are to be carefully opened under water, by which process the escape of any air will at once be demonstrated.

"There are strong grounds for believing, as has been already hinted, that the idiopathic asphyxia of M. Chevallier is merely another name for syncope. Discarding all preconceived opinions, and looking only to facts, we find very many examples recorded of sudden death from fainting, in which the condition of the heart was precisely similar to that described as having existed in M. Chevallier's cases. The decision of this question, however, does not affect my present object, nor the remarks which I have ventured to offer, though I admit that it is one of no small interest and importance."

ART. 102.—*Phlegmasia Dolens of the Upper Extremity, occurring after Parturition.* By J. M. WINN, M.D.

(Medical Times, Aug. 14, 1852.)

On the 15th of April last, Dr. Winn was called in to see a Mrs. G—, about 40 years of age, residing near the Mile-end Road, and who had been delivered of her ninth child thirteen days before. He found her in a sinking state. The countenance was anxious; the abdomen tympanitic, and distended to an enormous extent; the pulse small and rapid, and the mind confused. The peculiar and very remarkable symptom, however, was a pale, hard, and extremely painful tumefaction of the whole of the right arm, extending from the shoulder, in an even and diffused manner, to the extremity of the fingers.

The lower extremities of the body were not affected.

Mr. Hall, of the Mile-end-road, who was in attendance on the case, informed the author that his patient had been delivered by a midwife; that she had suffered from occasional rigors, and also from pain, without swelling, of the left shoulder, as if the disease were about to affect both upper extremities.

The medical attendants ordered milk and brandy, but it was evident that nothing could save her, and she died early on the following morning.

The author thinks that there can be no doubt that the above case was a most unusual form of phlegmasia dolens. He cannot, indeed, find on record a single instance of phlegmasia dolens of an upper extremity occurring after parturition. Dr. Ramsbotham, in the last edition of his valuable work on Midwifery, alludes to phlegmasia dolens of the arm as an occasional sequel of carcinoma mammae; and Drs. Stokes and Graves mention similar cases as complications of typhus, but in no instance as occurring after parturition.

The cases which approximate most closely to the one now instanced, are those (No. 1 and No. 2) published by Mr. Coulson, in his interesting observations on 'Affections of the Joints in the Puerperal State;' but, in these cases, the disease and pain were confined almost entirely to the neighbourhood of the joints.

Unfortunately a *post-mortem* examination could not be obtained.

ART. 103.—On Inflammation of the Follicles of the Vulva.

By M. HUGUIER.

(*Journal des Connaissances Médico-Chirurgicale, and London Journal of Medicine.*)

[We subjoin a condensed translation of M. Huguier's original paper, a brief allusion to which is appended to our notice of Dr. Oldham's writings on the same subject, (vol. IV, p. 307.) The author divides the vulvar secretory apparatus into *sebaceous* and *piliferous* glands, *muciparous follicles*, and a gland to which he gives the name *vulvo vaginal*, (vol. IV, p. 360.) He first describes the anatomy of these glands, and then proceeds to the main object of his communication.]

"INFLAMMATION OF THE FOLLICLES OF THE VULVA.—*Cause.* This inflammation is more common in the summer than in the winter. Brunettes and scrofulous subjects are predisposed to it; but pregnancy is the main predisposing cause.

"*Symptoms.*—In the eruptive period there is itching; the organs are red and swollen, and present small red projections, especially on the nymphæ, clitoris, &c. At a more advanced period, there is irritation and pain, especially during walking; and there is excessive secretion on the genital organs, with a strong odour. After a longer or shorter period, the follicles secrete pus. The little swellings become redder at the base, also larger and more projecting; they then become pale and yellowish; the pus then appears beneath the epidermis, and the pustules burst. The follicle may either cicatrise rapidly or remain open, presenting a small superficial circular sore. This kind of ulceration may be confounded, if care be not taken, with those of syphilis. The pustules, when arrived at the suppurative period, do not all burst

Absorption of the pus may occur in some cases; for some time the follicle remains red, hard, and inflamed; and its central part, if exposed to the air, is covered with a small crust.

"The disease may present its various stages at the same time on different follicles.

"Inflammation of the follicles is not always so simple as has been described. In pregnant women, or in those predisposed by diet, fatigue, or long walking, the vulva is more or less swollen; its different parts are red, glued together, and covered with a gluey, grey, whitish, or purulent matter, resulting from the mixture of sweat, sebaceous secretion, and pus. Excoriations soon appear, chiefly on the genito-crural folds, and on the free edges of the labia majora and nymphæ. In this state, the genital organs of the female, from which emanates a most repulsive odour, present such a hideous aspect, that it is easy to understand how some practitioners have mistaken the true nature of this disease, and others have believed it to be syphilitic.

"*Diagnosis.*—In most cases, inflammation of the vulvar follicle is readily distinguished from erythema, eczema, acne simplex, erysipelas, and small furunculous abscesses; but it may be confounded with herpes, ecthyma, and especially with syphilis.

"*Herpes* is distinguished from inflammation of the follicles, by being always preceded by derangement of the general health. It is, moreover, characterised by an eruption of robust vesicles, large from the commencement, while those of folliculitis are at first small. In herpes, the vesicles are superficial, lying beneath the epidermis; they are neither red, nor surrounded by an inflammatory areola; they burst, wither, and dry up very soon, most commonly without suppurating: when they do suppurate, the pus which they contain is rather an opaline matter mixed with serosity, giving it the appearance of whey, than true pus. When the vesicle of herpes is torn and the epidermis removed, there is a slight excoriation, without a depression, or at most with a scarcely sensible one. In vulvar folliculitis, the ulceration is deeper, but less extensive. Pressure on the follicle often causes the exudation of pus, or of sebaceous matter, sometimes both together; the lacerated vesicle of herpes gives exit at most to a little reddish or sanguinolent serosity. Herpes leaves no cicatrix; the other disease often does. And the two affections differ from each other in their progress and duration.

"*Ecthyma*, in its simple form, has more analogy than herpes with folliculitis. It is, however, often the result of general derangement of the health. It is never developed on the nymphæ, or the interior surface of the labia majora, or on the perineum, and very rarely in the genito-crural folds. When ecthyma attacks the vulva, it is situated on the clitoris or free edge of the labia majora. It rarely is present alone on the genital organs, for the surface of the body generally also presents traces of it. The pustules of ecthyma are less numerous and more superficial and larger than those of folliculitis; they sooner suppurate, and are covered with a thicker yellow crust. In ecthyma, the eruption does not present successive stages. Moreover, in this disease the vulvar follicles are found healthy, and there is no hypersecretion of fat and fetid matters.

"*Syphilis*.—It is chiefly with the various forms of syphilis that folliculitis of the vulva may be confounded: and this is a serious error. M. Huguier remembers with pain the case of a young married woman, weak, and in bad health, who was driven from home when about to become a mother, through a mistake of this kind, committed by the physician under whose care she was.

"In some cases, errors may be committed. In the early stage of folliculitis, when the inflamed follicles form pimples which may be accompanied by a discharge of the genital organs, the disease very much resembles those mucous tubercles which present themselves at first under the form of red shining papules, more or less numerous, small and round, like the inflamed follicles. A little later, when the follicles contain pus, when their aperture remains open, and gives exit constantly to purulent and sanious matter; when the neighbouring parts are excoriated here and there; when various parts of the vulva are irritated, and produce excessive secretion, accompanied with a discharge from the vagina or uterus,—it is very easy to confound folliculitis with primitive syphilis, characterised by incipient chancres and blennorrhœal discharge. The peculiar nauseous odour is almost the same in both; and, in both, there may be engorgement of the inguinal glands.

"There are, however, certain differential characters. Folliculitis frequently occurs during pregnancy; syphilis is most common when the uterus is empty. Folliculitis commonly follows much fatigue, excessive masturbation, and too frequent sexual indulgence. Syphilis is never the consequence of either of these, nor of uncleanness. With some exceptions, it only appears after a suspicious intercourse. The promotive seat of syphilis is usually at the entrance of the vagina, at the base of the interior surface of the nymphæ; folliculitis commences indifferently on any part of the vulva. Syphilitic affections of the vulva are very often accompanied with inflammation and hypertrophy, and with fissures of the anal folds. These parts are generally intact in folliculitis: hæmorrhoids, if they exist, will not be mistaken for venereal complications. Folliculitis presents successive eruptions of pustules in various stages, which produce much less destruction than those of syphilis, the excoriations and ulcerations being always superficial or very limited. Venereal ulcerations rapidly increase and form chancres, extending in various directions, and perhaps running together. Mucous tubercles, when of primary venereal origin, coexist with other indications of syphilis; when connected with secondary disease, the history of the case, and the appearance of other symptoms on various parts of the body, will point out their nature. Yet there may be cases in which it will be very difficult to form a diagnosis.

"Folliculitis is liable to return; sometimes it appears to be habitual. In some cases, M. Huguier has seen it return three or four times in a year.

"*Treatment*.—After removing the cause, the remedies to be employed are demulcent lotions, hip-baths for twenty minutes or half an hour, and simple or opiate cerate. Rest, vegetable diet, and a refreshing ptisan, are also indicated. If these means fail, we must apply a poultice of potato-starch, covered with a piece of gauze, and bathe

the parts with wine and water, or with decoction of roses, bistort, or rhatany. Cold hip-baths are also very useful. When the disease is obstinate, the parts must be treated with a strong solution of nitrate of silver, with a mixture of one part of acid nitrate of mercury in two of water, or, still better, with solid nitrate of silver, which must be held longer over the most diseased parts.

"Constitutional treatment must not be neglected. If the patients are scrofulous, and the disease appears liable to return, tonics and astringents must be given. Moderate exercise and nutritious diet are also advisable. Careful attention to cleanliness, moderate diet, and occasional purgatives, are indicated for dark-complexioned patients, with a very oily skin, whose perspiration has a strong odour, and who often have pustules of acne on the shoulders."

ART. 104.—*On Inflammation of the Vagina.*

By T. SNOW BECK, M.D., F.R.S., &c.

(*London Journal of Medicine*, Aug. 1852.)

"The large tract of mucous membrane, extending from the orifice of the vagina to the orifice of the uterus, is obnoxious to various diseases; and unquestionably the affection most frequently met with in practice is inflammation. The inflammation may be partial, or extend over the whole surface; it may be acute or chronic; it may be limited to the vagina, properly so called, or it may extend upwards into the membrane lining the uterus, and finally involve the proper structure of this organ; or extend downwards, and implicate the mucous membrane of the vulva; it may also extend beyond the substance of the membrane, attack the cellular tissue which surrounds it, and cause the formation of abscesses in this situation; or the erectile tissue which partially surrounds the vagina, may, together with the large and numerous veins, become implicated in the morbid action, and constitute a most distressing affection. Each of these variations in the character and extent of the inflammation causes a difference in the symptoms, and requires a modification in the treatment; but it is only inflammation of the vagina, considered in a general manner, and without reference to particular modifications, that can be considered within the limits of this paper.

"*Symptoms.*—When consulted by a patient labouring under an affection of this kind, it is rare, except in severe or acute cases, that our attention is directed to the seat of the disease. She frequently complains of a dull heavy pain across the forehead, general weakness, pain in the back, in the stomach, and in the calves of the legs, or of some condition of the general health, which has been induced by the long continuance of the local disease. It may be that a vaginal discharge is stated to exist, and that the menstrual periods occur every two or three weeks, and continue longer than usual; but the distinctive symptoms are, as a rule, only admitted by the patient when questioned on the subject. These are—a fulness, and throbbing in the vagina; pains shooting up the canal into the abdomen; tenderness on sitting, especially on a soft seat; great pain on the passing of the feces; a sensation

of bearing down, or as if something would pass from the vagina; with frequent desire to pass the urine, and occasional retention of that fluid. But it may be well to consider these symptoms rather more in detail.

“The pains which are present are seated in the sacral region, extending round the hips into the perinæum, down the posterior and outside of the thighs, and in the calves of the legs. They are, in fact, in the course of the nerves derived from the sacral plexus, from which the vaginal nerves are likewise derived, and hence, no doubt, the reason why pains present in affections of the vagina are reflected along the nerves furnished by the sacral plexus. In respect to diagnosis, it is important to notice the situation of these pains, for, as I have elsewhere shown, affections of the uterus itself cause pains in the lumbar and dorsal regions, and in the nerves derived from these parts, and not in the sacral portion of the spinal column. The pain at the lower part of the stomach, or rather, deep in the hypogastric region, is likewise strongly indicative of a vaginal affection, inasmuch as pains reflected from the uterus are seated, not in the hypogastric region, but in the sides of the abdomen, above the inguinal region. The local fulness and throbbing, together with tenderness on pressure, either on sitting on a soft seat, or during the passage of the fæces, are obviously referable to the local disease; but the bearing down, which is also present, and which has been usually attributed to an affection of the uterus, is deserving of note. From my own observations, I do not hesitate to refer this symptom to disease of the vagina, the mucous membrane of which becomes thickened and swollen, and hence causes the feeling of a substance being present, having a tendency to pass away. However, it no doubt frequently exists when the uterus is the seat of disease; but in these cases the vagina also is implicated; and even when no affection of the vagina is present, it will be found that the symptom is occasioned by the pressure of the descending uterus upon this canal, and therefore is still derived from the vaginal complication. The frequent desire to pass the urine, and the occasional retention of this fluid, appears to be the consequence of irritation, reflected from the vaginal nerves to those distributed to the bladder. It does not appear probable that it arises from the extension of the inflammation to this viscus, for that would involve a greater degree of morbid action than is usually present; nor can it be caused by any unhealthy state of the urine, for this fluid, when tested, is not found, even in most marked cases, to be altered from the healthy condition.

“In inflammation of the vagina, some discharge is usually present, whether this be purulent, muco-purulent, or white mucous; but it may be entirely absent. Frequently in acute inflammation there is no discharge; and often, when an acute attack is engrafted upon chronic inflammation, the vaginal discharge, previously present, ceases; and when repeated a few times, will cause the patient to remark, that ‘she is always easier when the discharge comes freely away.’ It will not, I think, admit of a doubt, that the state of the membrane which gives rise to these various conditions of the discharge must vary, according to the presence or absence, or the character of the discharge; yet, for the present, I must pass over this point of the inquiry. It is,

however, worthy of note, that in affections attended with vaginal discharge, or, as it is termed, leucorrhœa, this discharge is the product of the vagina, and not of the uterus, as has been hastily supposed.

"The ancient division of leucorrhœa, into vaginal and uterine, appears to have been made when the diagnosis between these two diseases was as yet very imperfect, and is now retained by some authors, on the plea that purulent fluid sometimes is seen to escape from the orifice of the uterus during an examination with the speculum. That purulent fluid and white of egg mucus does escape from the cavity of the uterus is certain, but *practically* we must bear in mind, that the amount is too small to escape externally, and constitute what patients call 'a discharge.' Another important practical condition attending inflammations of the vagina, is the disturbance which they induce in the menstrual function. Soon after the appearance of the inflammation, the catamenia are observed to appear a few days within the proper period of their recurrence, to continue longer than usual, and to be greater in quantity, whilst the purulent or muco-purulent discharge again occurs in the interval. These alterations gradually increase in degree, until the menstrual discharge appears every fortnight, or oftener, continues seven or eight days, and consists of a copious flow of bright fluid, often mixed with coagula of blood. In some cases, I have known a red discharge, depending on inflammation of the vagina, to continue for six weeks without intermission, and to withstand the effect of various astringent remedies, until the inflammation was subdued by the free application of leeches. Nor was this discharge of trifling amount, for both from its quantity and the effect it produced on the constitution, it might strictly be termed menorrhagia.

"A curious physiological question arises out of this clinical observation of the effect of vaginal inflammation upon the catamenial functions:—viz., by what influence is this effect produced? I must, however, leave the solution of this question to those who have accepted the imaginary theory of the influence of ovarian excitation upon this function. For myself, the phenomenon in question appears an insurmountable obstacle to this supposed influence. It might be said that this red discharge was not the appearance of the menstrual function, but only a flow which simulated it; but if such a line of argument were adopted, I am unable to perceive how it could be supported. The discharge is not a vicarious flow, varying in recurrence, in duration, or in amount, but appears regularly in respect of each of these characters; has gradually superseded the regular monthly periods, and presents no appreciable difference from the usual catamenial flow.

"The constitutional states which are caused by these affections vary much according to the original constitution of the patient, the hygienic conditions in which she is placed, and the duration of the disease. In severe cases, the continued pain which is endured night and day, the inability to find a resting place when in bed, and the frequent recurrence of increased pain at the catamenial periods, now recurring very frequently, quickly produce a state of debility and nervousness which, at times, becomes excessive. The constitutional derangement is further aggravated by the actual loss of blood, too great for the system to bear, and by disorder of the bowels; yet, as a rule, the appetite is not

much impaired. It is also a curious observation, that in these affections pain across the forehead is almost invariably present.

“On a local examination, the vagina presents the characters of a mucous membrane suffering from various conditions of inflammation. When examined with the finger, the orifice and the cavity of the vagina may be small, the membrane hot, and exceedingly tender, though neither swollen nor lubricated by any fluid, whilst the arteries are felt to beat beneath the finger with increased force. On other occasions, in addition to the heat and tenderness, the membrane is much swollen, lying in large smooth folds, or is much corrugated. Frequently a portion of it projects, like a fringe surrounding the orifice, into the vulva, being acutely tender, and causing great difficulty in progression. In more chronic cases, the vagina becomes ample, and the membrane evidently thickened; it is tender, and covered with a copious secretion, and the increased pulsation of the arteries is still perceptible; on other occasions, the membrane is not only thickened, but coriaceous to the feel, communicating to the finger rather the impression of soft skin than that of mucous membrane. Viewed by the speculum, the membrane presents various shades of red, from an increase in the natural colour of the part to bright florid, or livid mahogany red; the colour may likewise be either uniform or mottled in various degrees. When it is thickened and coriaceous, the colour is even paler than natural, and has the appearance termed ‘mammillation.’ This mammillated condition of the vagina frequently ceases abruptly at the orifice of the uterus, and has been mistaken for the margin of an ulcer, supposed to occupy the ‘orifice of the uterus.’

In regard to the existence of ulceration of the uterus, there can be no doubt that it is a rare, instead of a frequent disease, and that the term has been applied to various morbid conditions, which are essentially different from ulceration. But in this particular instance some excuse may be offered, inasmuch as it requires a somewhat careful examination of the subject, in order to appreciate the morbid alterations.

“*Treatment.*—The ultimate object in the cultivation of the knowledge and diagnosis of diseases is, without doubt, that we may arrive at the means by which they are most easily and most certainly relieved. And in treating this part of the subject, I will consider inflammations of the vagina as they occur in the acute stage, in the chronic stage, and when thickening or ulceration of the tissues has been produced.

“In the acute stage, when the membrane is swollen, intensely tender, with or without discharge, and the arteries of the part beat with a force and character which closely simulates the state of the vessels in a finger during the formation of a whitlow, the abstraction of blood appears clearly indicated. Except, however, in those plethoric habits where it is necessary to relieve the general tension of the system, general bleeding is rarely if ever required; but the local abstraction of blood, by leeches applied to the perinæum or vulva, is of great service. The vessels of the part, as well as the large plexus of the pelvic veins, are more effectually relieved by this than by any

other means; and the bleeding may be further encouraged by fomentations, or, what is better, by the use of bran poultices. The poultices again, should be ample, larger than sufficient to cover the whole of the perinæum, and the hips should be surrounded by a blanket, folded in a triangular form, which is passed round the pelvis, and one end brought up between the thighs, after the manner of applying a baby's napkin. This admits of a local application of heat and moisture, by the frequent changing of the poultices, for a greater length of time, and more effectually, than by other means; whilst the blanket not only converts the application into a hip-bath, by retaining the heat and moisture around the hips, but prevents the bed becoming damp, and consequently admits of the whole being removed at any period. The administration of aperients is important, in order to remove any obstruction the loaded condition of the intestine might offer to the return of the blood; yet we ought not to forget that the bowels are frequently much loaded, are very obstinate to move, and that when they are so, great pain is produced by the passage of the feces, which for a time aggravates the disease, and often draws complaints from the patient that the remedies make her worse. It is, however, important to remove all obstruction, especially in the large intestines, and sometimes even an enema is required, the administration of which will likewise give much pain. The liquor potassæ and the acetate of potash are sometimes of much service; but their lengthened administration weakens the general health. Frequently there are difficulties to be encountered, in severe cases, which experience alone, it appears, could have taught. The pain is so great in the sacral region, that the patient is unable to find a resting-place in bed, and seeks relief by sitting on a hard seat, with the body bent forwards, and the elbows resting on the knees. If during the night she endeavours to obtain a little repose, no sooner is she lost in sleep than the mind wanders in some frightful dream, some movement of the body is made to respond to the imaginary incidents, and she is again awoken by the pain which these movements produce. Should the attack occur during the winter, the patient, unable to sleep or find a resting-place, seeks relief by sitting up in bed covered with shawls, cloaks, &c., when, after a time the head becomes very painful and giddy, and she is again compelled to resume the recumbent posture, "shivering with cold." It is requisite to be acquainted with these circumstances, in order that the attention may not be drawn from the cause of the symptoms, and that we may steadily pursue the means to relieve the local inflammation; paying attention, at the same time, to the constitutional disturbance which is incurred. The use of narcotics generally affords temporary relief; and perhaps the combination of henbane and morphia quiets the system as well, and affects the head as little, as any other. Each case further requires some modification of the treatment, in order to suit the constitution of the patient, and the general condition of health in which she may have been at the time of the attack. Further than washing the external parts with warm water, the vagina is too tender to admit of the employment of blisters. After a time, the acute symptoms pass away, the membrane secretes a muco-purulent or purulent discharge, the chronic stage of the affection is established,

and we now have one of those diseases to which the name leucorrhœa has been applied.

"In the chronic stage it is not requisite to confine the patient to her bed, nor to prevent her attending to her household duties; yet long walks ought to be avoided. The diet may be more generous; and strict attention must be paid to the condition of the bowels, which usually become disordered by reason of the patient delaying their action as long as possible, from a dread of the pain it creates. An aloetic digestive pill, taken before dinner, generally suffices to ensure their regular action; and when anæmia is present, one or two grains of the sulphate of iron is an excellent addition. It is in this stage that the balsam of copaiba, either in the form of a mixture or as drops, is of great service; as also the powdered cubebs, given twice or thrice a day, and combined or not with the carbonate of iron, according to the special indications of the case. It is now also, that the tincture of cantharides has been found by some to be so serviceable. During the flow of the menses, which recur at short intervals, with an increase in the quantity, these medicines must be intermitted, rest enjoined, and, if necessary, dilute sulphuric acid, gallic acid, &c., administered, in order to moderate any inordinate flow. At the menstrual periods, there is a tendency to an inter-current attack of acute inflammation springing up; and this may extend so far as to render it requisite to apply leeches to the vulva, and to use the bran poultices, before the profuse flow can be arrested. After a menstrual period of the usual duration, the application of a few leeches, and the employment of the poultices for an hour or two, is beneficial, by reducing the fulness of the vessels, and relieving the increased inflammation which attends the recurrence of this function. But, as might be supposed, it is in this chronic stage of the inflammatory action, that vaginal lotions are of so much benefit. It cannot be necessary to particularise the various lotions which are useful, or the way in which these require to be modified, in order to suit the requirements of each individual case. It is sufficient to bear in mind that the milder forms ought to be first employed, as the acetate of lead, or even cold water, at the time of taking a hip-bath; while those of more stimulating qualities, as the sulphate or chloride of zinc, nitrate of silver, &c., are cautiously proceeded to. The necessity there is for the patient to lie on the back, with the hips raised, in order to use vaginal lotions efficiently, constitutes a great objection to them by many females, and in others, causes them to be used without this precaution, and consequently with little or no benefit. With proper attention of the female, it might be said that the speculum is never required in the treatment of this stage of these affections, and that lotions are always sufficient for their cure. But it is not always that patients will be so careful as to ensure the lotion passing to the upper part of the vagina, where the disease may become located; and in occasional cases of this kind, a strong solution of nitrate of silver, or the solid nitrate, lightly passed over the surface of the membrane, through the means of the speculum, will remove, as if by a charm, after two or three applications, a troublesome discharge, and wandering pains which had existed for months previously.

Chronic inflammation of the vagina is a frequent attendant on

affections of the uterus itself, and, I am also obliged to say, has frequently been mistaken for disease of this organ. It is chiefly from this cause, that so many contradictory opinions have been given as to the value of lotions in these affections; for instance, in inflammation of the vagina, they will afford marked relief, and generally cure the disease; in inflammation of the vagina, attended with an affection of the uterus, they will be of much benefit by relieving one portion of the affection; but in a disease of the uterus itself, no good will be obtained from the employment of them. It is consonant with *à-priori* reasoning, to suppose that a local application, which only occasionally touches the uterus, and when it does touch, only washes the lips of the organ, could exert no beneficial influence on its diseases; and experience has fully shown this reasoning to be correct.

"In respect to the treatment of that stage of these affections, wherein the tissues become thickened and altered, I have little to say. Here, all general medication, with the object of influencing the local disease, is apparently useless; yet, as the general health has suffered, to a greater or less extent, from the lengthened continuance of the disease, and in various ways, remedies calculated to remove the constitutional derangement, present in each individual case, are not only of great benefit, but are essential to the cure. To reduce the thickening of the membrane itself, the stronger lotions, used with attention, are requisite, such as the chloride of zinc or of copper, the nitrate of silver, the tincture of iodine, &c. And the occasional application to the surface of the membrane, by the aid of the speculum, of these substances, in stronger solution than they can be used as lotions, hastens the removal of the thickening of the tissues. Frequently the employment of one substance in strong solution, whilst using another as a vaginal lotion, is more beneficial than the employment of either of these substances alone."

ART. 105.—*On the Pathology and Treatment of Leucorrhœa.*
By W. TYLER SMITH, M.D.

(*The Lancet*, July 7th.)

The following essay, which was read before the Medical and Chirurgical Society, is a praiseworthy attempt to reconcile conflicting opinions by means of microscopic investigations.

The author commenced his valuable observations by referring to the anatomy of the parts concerned. He observed that the mucous membrane of the os and cervix uteri, like the mucous membrane of other parts, consisted of epithelium, primary or basement membrane, and fibrous tissue, blood-vessels, and nerves. But as there were some special characteristics pertaining to this tissue, he proposed, for the convenience of description, to examine, first, the mucous membrane of the os uteri and external portion of the cervix; and, secondly, the mucous lining of the cervical cavity, or canal. The epithelial layer of the former of these situations was tessellated or squamous, and so arranged as to form a membrane of some thickness; by maceration, it could be easily detached, and it was then found closely to resemble

the epithelial covering of the vagina, with which it was continuous. Beneath this epithelial layer was the basement membrane, covering numerous villi or papillæ, which studded the whole surface. Each villus contained a looped blood-vessel, which, passing to the end of the villus, returned to its base, and inosculated with other blood-vessels of the contiguous villi. These villi had been mistaken for mucous follicles, usually described as covering the surface of the os uteri; but the microscope failed to discover any distinct follicular structure in this situation. When a thin section of the surface of the os uteri was examined by a low power, the points of the villi could be seen as dark spots through the epithelial layer. A careful examination exhibited these spots as slightly depressed in the centre, yet nevertheless slightly elevated in their margins, nipple-shaped, and containing red points, which were the terminations of the looped blood-vessels. These appearances were produced by the villi being obscured by their epithelial covering. This thick layer of scaly epithelium, and the villi with their looped vessels, were the principal anatomical features of the mucous membrane of the os and external part of the cervix uteri; and these structures played an important part in the pathological changes which occurred in the lower segment of the uterus in leucorrhœa. Between the margin of the lips of the os uteri and the commencement of the penniform rugæ, within the precincts of the cervical canal, a small tract of smooth surface was usually found, which to the naked eye seemed of more delicate structure than the neighbouring parts, and when examined by the microscope was found to be composed of cylinder epithelium, arranged after the manner of the epithelium covering the villi of the intestinal canal. The cylinder epithelium covered in this situation villi two or three times larger than the villi upon the surface of the os uteri,—so large, indeed, as to be visible to the naked eye when viewed by transmitted light. Within the cavity of the cervix uteri, the mucous membrane contained four columns of rugæ, or folds, arranged in an oblique, curved, or transverse direction; and between these columns were four longitudinal grooves. The two sulci in the median line, anteriorly and posteriorly, were the most distinct; and of these, the sulcus of the posterior column was the most strongly marked. In the normal state, the transverse rugæ, with the fossæ between them, were filled with viscid, semi-transparent mucus; and when this was brushed away, a reticulated appearance, caused by numerous secondary rugæ, was visible. The author gave a very minute description of these four rugous columns, and the furrows between them, which was illustrated by some very beautiful drawings of the cervical canal, displaying the rugous columns and fossæ of the natural size, and magnified nine and eighteen diameters. The latter power showed a large number of mucous fossæ and follicles, crowding the depressions between the rugæ, and the rugous elevations also. The author mentioned that a healthy virgin cervix of normal size, contained at least ten thousand mucous follicles. This anatomical arrangement secured a vast extent of superficial surface, which was still further increased by the presence of villi similar to those found in the lower part of the cervix; they were found in considerable numbers on the large rugæ

and other parts of the mucous membrane in this situation. By this disposal of the mucous membrane of the canal of the cervix, a very large extent of glandular surface was obtained for the purposes of secretion. In effect, the cervix was an open gland; and, in the opinion of the author, it was in this part of the utero-vaginal tract that the principal seat of leucorrhœa would be found to exist. There was an analogy here which should not be lost sight of, bearing, as it did, on the pathology and treatment of leucorrhœa, which was, the great similarity which existed between the skin and the mucous membrane of the vagina and the external part of the os and cervix uteri. The resemblance, in these situations, was certainly much nearer to the cutaneous structure than to the mucous membrane of more internal parts. These analogies were strongly confirmed by what was observed of the pathological conditions to which these parts were liable, and by the effect of therapeutical applications. The author dwelt on the fact, that the epithelium of the os uteri and external portion of the cervix was constantly squamous, and that the epithelium immediately within the os uteri was cylindrical but not ciliated, but that in the rugous portion of the cervical canal the cylindrical epithelium became ciliated. The mucus secreted by the glandular portion of the cervix was alkaline, viscid, and transparent; it adhered to the crypts and rugæ, so as to fill the canal of the cervix. It consisted chiefly of mucus-corpuscles, oil-globules, and occasionally dentated epithelium, all entangled in a thick, tenacious plasma. It was remarkable for its tenacity; while the mucus found in the lowest part of the canal was thinner in appearance. There was an essential chemical difference between the vaginal mucus and the secretion of the interior of the canal of the cervix; the first was always acid, and the latter invariably alkaline. Mr. Whitehead, of Manchester, had noticed this fact, and the observations of the author confirmed his views. The acid of the vaginal secretion was more than sufficient to neutralize the alkaline secretion of the cervix, and when any secretion from the cervical canal entered the vagina, it became curdled from the coagulation of its albumen. It was worthy of note, that that part of the mucous membrane of the uterus and vagina which resembled the skin, was the only part which, like the skin, furnished an acid secretion. The vaginal mucus was a simple lubricatory fluid; but the uterine cervical mucus had other uses besides that of lubrication; in the healthy condition, in the intervals of the catamenia, it blocked up the passage from the vagina to the fundus; it thus defended the cavity of the uterus from external agencies, and from its alkaline character afforded a suitable medium for the passage of spermatozoa into the uterus. Having stated his views of the structure of the utero-vaginal mucous membrane, the author expressed his opinion that the glandular portion of the cervix uteri was the chief source of the discharge in leucorrhœa. Leucorrhœa, in its most simple and uncomplicated form, was the result of an increased activity of the glandular portion of the cervix. A follicular organ, which should only take an active condition at certain intervals, became constantly engaged in secretion. Instead of the discharge of the plug of mucus at the catamenial period, an incessant discharge was set up.

At first the discharge was but an unusual quantity of the elements of the healthy mucus of the cervix. The quantity increases, and becomes a serious drain to the constitution, and the glandular cervix in some cases becomes so excitable, that any unusual stimulus, even mental emotions, provokes an augmentation. The author next referred to the conditions under which the epithelium of the os and external part of the cervix uteri and upper portion of the vagina might be partially or entirely removed. The mucous membrane then presented an intensely red colour, from the presence of the naked villi, and an appearance of roughness or excoriation presented itself. He thought that among the causes which produced this aspect of ulceration, were eruptive disorders, similar to herpes or eczema, which strongly marked the analogy between this tract of mucous surface and the skin. He had observed cases in which an occasional herpetic eruption upon the os uteri always produced herpes præputialis in the husband. But the most frequent cause of denudation arose from the alkaline mucous discharge of the cervix irritating the acid surface of the os uteri, and causing the rapid shedding of the epithelium round the margin of the os. A microscopical examination was given of the various discharges met with in these affections, in making which the author was assisted by Dr. Handfield Jones and Dr. Hassall. In cervical leucorrhœa, the discharge consisted of quantities of mucous corpuscles, and, in severe cases, pus-corpuscles and blood-disks, with fatty matter involved in a transparent plasma. The epithelial *débris* is constantly present, but in limited quantity. In vaginal leucorrhœa, including the secretions of the external portion of the os and cervix uteri, the plasma is opaque, and contains myriads of epithelial particles in all stages of development, with pus and blood globules when the villi are affected. When a circumscribed ulcer is visible upon the os uteri to the naked eye, after death, such as occurs in eruptive affections of the os and cervix, and is examined by the microscope with a low power, it is found to consist of a base from which the villi are entirely removed, or in which only the scattered *débris* of villi remain; and, surrounding this base, there is a fringe of enlarged villi, partially or entirely denuded of epithelium. The character of the so-called ulceration of the os uteri was detailed, and the nature of the discharges described. The author then observed, that, if any divisions of leucorrhœa were made, two principal forms must be recognised,—

- I. The *mucous* variety, secreted by the follicular canal of the cervix.
- II. The *epithelial* variety, in which the discharge was vaginal.

With respect to the so-called ulcerations of the os and cervix, two kinds of morbid change would be observed—

1. *Epithelial abrasion*, by far the most common, in which the epithelium alone was deficient.
2. *Villous abrasion, erosion, or ulceration*, in which the villi are affected by superficial ulceration.

It was to the villi, denuded of epithelium, and partly eroded, that the marked forms of granular os uteri were owing. The ovules of Naboth, often referred to by writers as obstructed follicles, the author had found to be in reality an eruptive disease of the mucous membrane

analogous to a cutaneous affection. In these affections of the cervix uteri, it frequently happened that the cervix uteri was partially everted, and the deep-red surface covered by vascular villi thus exposed, had frequently been mistaken for breach of continuity in the mucous surface. The author then offered some remarks on the practical deductions which might be drawn from the present investigation. The glandular structure of the parts whence the leucorrhœal discharge arose, pointed to the influence of constitutional causes, and exemplified why this affection should be so common in women of strumous habit and leuco-phlegmatic temperament: it vindicated the importance of constitutional treatment, and directed attention to the more rational employment of topical remedies; and it was evident that the profuse application of caustics, as recommended by the French school of uterine pathology, was both unnecessary and unscientific. He admitted that leucorrhœa of the cervical canal was sometimes cured by the use of caustics to the os uteri; but in these cases they acted as counter-irritants to the glandular structure. The indications of treatment, based on a knowledge of the minute anatomy of the os and cervix uteri, and the study of its pathology in leucorrhœa, appeared to the author to require constitutional medicines and regimen, with local applications. Local measures, to be of any use in cervical leucorrhœa, should be applied, not to the vagina, nor to the os uteri, but to the canal of the cervix. In vaginal or epithelial leucorrhœa, common injections were serviceable; but in cervical or mucous leucorrhœa no benefit could result, unless the injection passed into the cervix. He mentioned the methods he adopted to secure this result, and concluded by expressing a hope that the prosecution of these researches might prove serviceable, by rendering a troublesome class of maladies more intelligible than they had hitherto been, and by tending to correct errors of practice, and to indicate the just value of constitutional and topical remedies.

ART. 106.—*Case of Occlusion of the Vagina with Vesico-Vaginal Fistula:—Operation.* By ROBERT MACDONNELL, M.D.

(*Canada Medical Journal, and Dublin Medical Press, July 14, 1852.*)

[The following complicated case exhibits the operative ingenuity of Dr. McDonnell in a very flattering light.

A lady, æt. 22, after a severe labour, followed by sloughing of the pudenda, discovered that the orifice of the vagina was contracted to the size of a crowquill, and through this passed urine, pus, and at stated times the catamenial fluid. The nymphæ, orifice of the meatus, and clitoris were completely destroyed. For a year after first consulting the author, dilatation by bougies was assiduously tried, after which she came under his immediate supervision. The condition then is thus described, together with the operation for its relief.]

“The real meatus, nymphæ, and clitoris, were removed, and an inflamed mucous membrane closely applied to the under surface of the arch of the pubis, and the cutaneous surface of the labia majora, were the only external marks of genital organs remaining; a hard, gristly

cicatrix occupied the entrance of the vagina, and firmly resisted the finger, barely allowing a very small three-bladed speculum to pass within the orifice. Having examined the condition and locality of the rectum as well as I could, and being satisfied that the orifice was not the meatus, nor a dilated urethra, I determined, with the consent of my colleagues, to remedy the defect by the following operation:—The patient was placed on a table, before a large window, and the parts exposed as in the operation for lithotomy, and chloroform administered. The speculum being introduced, the blades were opened as much as possible, and two deep incisions made downwards towards the rectum, including a large triangular, wedge-shaped portion of the cicatrix, the apex of which was posterior, next the rectum. The sides of the wound separated widely, the wedge-like portion was taken away, and the dissection extended upwards for about two inches into the vagina. We now examined for the cervix uteri and could not find it, but easily recognised a moveable body, formed, as we believed, by the uterus itself lying in its natural position, although none of us could detect the os tincæ.

“After a careful examination, I was enabled to get my finger behind a thick membranous structure that divided, like a diaphragm, the anterior from the posterior part of the vagina, and through the medium of which the uterus had been felt. I soon reached the os and cervix uteri, and having divided the membrane by an incision carried upwards, we were enabled to introduce the speculum, and examine ocularly the mouth and neck of the womb. *The vagina was now restored.* A few ridge-like bands passing along the posterior wall, were in succession divided, and grated audibly under the touch of the knife. Not much hæmorrhage ensued, and no vessel had to be tied. The patient having recovered from the state of insensibility, requested to have all further interference delayed until the next day. She was placed in bed, a plug of lint passed into the vagina, and an anodyne draught administered. Everything went on well until about twelve o'clock the same night, when smart hæmorrhage ensued, and after some trouble, we discovered, by means of the speculum, the bleeding vessel about two inches up the vagina, on its posterior surface. A ligature was passed round it, and the bleeding immediately ceased. She slept well afterwards. The next morning we made a careful examination of all the parts, and found that the original sloughing process had destroyed not only the nymphæ, clitoris, under surface of the urethra, but that a large transverse vesico-vaginal fistula also existed—the entrance to the bladder being, in fact, through this transverse slit; *no vestige of the urethra remaining.* This was an unexpected complication, for though we were fully satisfied that a great portion of the urethra was removed, yet we thought that sufficient of its vesical extremity remained to answer the purpose of a conduit, and to prevent escape of urine. The discovery of this opening now explained what before was obscure—viz., that the patient could not retain the urine, whenever the speculum was introduced, for the orifice in the cicatrix being on a level above the vesical opening, its edges served as a barrier in preventing the escape of the fluid.”

[The patient was thus relieved as far as the contracted vagina was

concerned. The wound healed, and she was able to attend to her duties; but the urine still escaping through the fistula, a second operation was performed as follows:]

"The patient was placed on her hands and knees on the edge of a bed, a bi-valved speculum was introduced, and the fissure fully exposed. Assisted by Dr. Hall, I performed the operation as follows: The edge of the fissure, which was much thickened, hard, and gristly, was pared with a scalpel until a raw bleeding surface was procured, then curved needles armed with ligatures were introduced by means of Jobert's *porte aiguille*. The first entered at a point a little to the right of the centre of this transverse lip, and came out at a distance of a quarter of an inch; the second was introduced at a little distance to the external to the first, and emerged at an equal distance from the point of exit of the first suture, and the third one was entered and brought out in a similar manner, the same distance between the points of entrance and exit being preserved as in the instances of the other two sutures. The ligatures were now fastened, and what was before but *one transverse* lip, now was converted by the tying of the ligatures into *two*, uniting in the median line and *taking a direction backwards*. If this description be not sufficiently plain, let the reader take a dried bladder, cut away all the inferior part of it near the urethra, together with the under surface of the urethra, in such a manner as to have a transverse lip at about one inch from the neck of the bladder, then let him introduce three ligatures at regular distances and tie them, and he will find that he not only contracts or puckers up the opening, but that from one lip he has made two, and that the line of their junction is backwards and forwards. This was the only modification of the operation for vesico-vaginal fistula that I considered suited to the case. The tying of ligatures in deep cavities has always been found a difficult and tedious part of an operation, but the following method, first recommended by Sir P. Crampton in staphyloraphy, will be found to answer remarkably well. One end of the ligature is passed through a *brass* bead (steel will break), such as are used in ornamenting purses, the other end being passed through both edges of the wound, is made to pass through the bead, and both ends of the ligature being now in the bead, the latter is pushed up against the incised edges, and then pinched firmly on the ligature, by means of a jeweller's pincers, so as to tighten it in such a way that it cannot move in one direction or the other. When it is necessary to remove the ligature, the bead and all can be taken away at the same time. This form of suture I have been in the habit of describing in my lectures as *Crampton's suture*, and I can strongly recommend it to the attention of surgeons.

"Circumstances to which it is unnecessary to allude, obliged her to go home sooner than I wished, but not before she derived very great, although not complete, relief from the operation. She is now enjoying excellent health, and able to go about as she pleases. She can retain water for nearly two hours, and in certain positions for even a much longer period."

ART. 107.—*Ascent of the Unimpregnated Uterus (Elevatio Uteri).*
By Professor SIMPSON.

(*Monthly Journal of Medical Sciences, October, 1852.*)

[This affection, Dr. Simpson tells us, has been comparatively unnoticed. Its causes are ovarian diseases, certain tumours of the uterus, pelvic abscess, or adhesions resulting from peritoneal inflammation: sometimes also it would seem to be congenital,—sometimes the result of the natural atrophies taking place in old age. In the subjoined cases, the cause was fibrous tumour of the uterus.]

“*Case 1.*—The patient, aged 40, had been married twenty years, had borne one child about a year after marriage, but had never been again pregnant. The abdominal cavity is now distended by a mass of dense firm fibrous uterine tumours, which stretch upwards to nearly the scrobiculus cordis, and are altogether as large as the uterus in the eighth month of pregnancy. The mass consists of one great tumour stretching upwards above the umbilicus, and superadded to this are several comparatively smaller masses above and laterally, forming tuberoso elevations and projections upon the sides of the larger central tumour. One of these smaller tumours, situated towards the left side, of a flattish form, and about two and a half inches broad, is pediculated and mobile, like a peritoneal polypus. On examination per vaginam, a rounded elongated portion of the largest tumour is felt pressing low down into the pelvis, and filling up the space in front of the rectum. The vagina, from the lowest point of the tumour upward, is narrowed and flattened between the tumour and the pubis; but the finger, when passed along this contracted canal, cannot reach the os or cervix uteri. In fact, a sound passed into this canal, runs a considerable distance upward from the vulva before it touches the upper extremity of the vagina, and consequently before it reaches the cervical portion of the elevated uterus; and the end of the sound arrested at the junction of the vagina and uterus, can be felt through the abdominal parietes *as high as two and a half inches above the upper edge of the symphysis pubis.* The body of the uterus can be felt as a flattened projecting mass above this part.

“This patient, who has come for medical advice from Australia, was there considered to be labouring under ovarian dropsy; and it was supposed to be a case admitting of removal by operation. But that it is a fibrous tumour, and not a multilocular dropsy of the ovary, is certain from its slow growth, from the density of the tissue of the tumour, from the arrangement alluded to of superadded external tumours, and from one of these superadded tumours having become pediculated like an external polypus,—a morbid arrangement which we never see in an ovarian disease. Besides, there is this common, and, as I believe, pathognomonic sign present, that in various parts of the larger tumour, and particularly on its right side, a loud souffle is heard synchronous with the pulse, when the stethoscope is used,—a phenomenon very common in fibrous tumours imbedded in the substance of the parietes of the uterus, but which I have never met with in any instance of dropsical disease of the ovary. The affirmative

evidence of the enlargement being a fibrous uterine tumour which can be usually derived from the simultaneous movement and union of the mass of the tumour, with the body and cervix uteri (under a combined abdominal and vaginal examination), is here of course wanting; in consequence of it being impossible to reach the elevated uterus. Nor, for the same reason, can we take advantage of those other means of diagnosis between fibrous tumours of the uterus and cystic degeneration of the ovary, which depend upon the respective measurements of the length of the cavity of the uterus in these two diseases, as ascertained by the employment of the uterine sound.

"*Case 2.*—The patient, *æt.* 38, has been married seventeen years, but has had no family. Menstruation has been regular; and only lately somewhat menorrhagic. Her general health is good. About ten years ago she first noticed an abdominal enlargement, which has gradually and slowly increased. The tumour is now of as great size as the uterus at the ninth month of pregnancy. It touches the lower edge of the ribs upon the right side. Its external form, however, is somewhat irregular, particularly from a large projection upon it towards the right iliac region. The tumour is not so firm in consistence as fibrous tumours generally are; and towards its centre, and near the umbilicus, it feels comparatively so soft as to give a deceitful idea of fluctuation, like that sometimes imparted by subcutaneous adipose tumours. Three months ago a trocar was passed in this situation, without drawing off any fluid whatever. There is a deep musical souffle, synchronous with the pulse, to be heard on the sides of the tumour, particularly on the left side. On making a vaginal examination, the *os uteri* cannot be reached, but a decreasing, conical-shaped cavity may be felt, passing up in front of the tumour, and somewhat towards the left side. When the patient is placed upon her face, and the finger deeply passed along and behind the symphysis pubis, the *os uteri* can with considerable difficulty be touched, lying above the upper edge of the pubis. The uterine bougie, when introduced into the *os*, passes readily for several inches, showing the uterus to be elongated and hypertrophied upon the side of the tumour. In this instance, there is no projection downwards of the tumour, as in the preceding case, into the pelvic excavation. The pelvic cavity is, in fact, quite free, and the roof of the vagina is altogether higher than usual.

"It does not seem difficult to understand the mechanism by which the uterus becomes morbidly elevated in such cases of ovarian and uterine disease, as I have alluded to in the preceding remarks. If an ovarian or fibrous tumour, attached organically to the back wall of the uterus, grow downward upon the roof of the vagina, or, in other words, into the reflection of peritoneum between the rectum and uterus, and develop itself steadily in this its *lower* segment, the extension of the tumour in this downward direction, upon the resisting roof of the vagina, forces the tumour to lift the uterus (which is attached to the anterior surface or body of the tumour,) higher and higher with it during the longitudinal development of the mass to which it is united. The tumour, in its downward longitudinal development, necessarily carries upward more and more the uterus affixed to its anterior part;

in the same way as the uterus in its own enlargement during pregnancy carries and elevates upwards the Fallopian tubes and ovaries attached to its two sides. Or the enlarging uterine or ovarian tumour may, as in the second case detailed above, obtain a similar elevating influence upon the uterus, by resting its lower and growing segment upon the pubis or sides of the brim of the pelvis, instead of upon the roof of the vagina; thus ultimately displacing the uterus upwards by somewhat the same kind of mechanism, as the os and cervix uteri are often, in common pregnancy, raised upwards and backwards above their usual level for some time after the uterus expands into the cavity of the abdomen, and rests, during its enlargement, upon the anterior circle of the pelvis."

ART. 108.—*On a Varicose Ulcer of the Uterus.*

By R. L. MACDONNELL, M.D., Montreal.

(*Canada Medical Journal*, Sept. 1852.)

Under this name the author describes an affection which is attended with copious and often alarming hæmorrhage. In every instance the os uteri was very patulous, its edges thickened and everted, and fissured by deep chinks, from which bloody fluid was constantly escaping. The colour of the cervix was of a dark purple, and large tortuous veins could be seen traversing its surface, in some spots near the lips of the os, presenting themselves in the shape of small bluish-looking elevations, closely resembling piles. The neck of the womb was free from pain, soft and spongy to the feel, but much larger than in health, and the whole uterus appeared to be greatly increased in size. Bleeding goes on almost constantly during the intervals between the monthly periods, but when these latter arrive, the amount of blood lost is much greater than natural; sexual intercourse, or manual examination, causes much bleeding, and if the speculum be introduced, the welling up of blood is so great as, for a time, to prevent careful examination, until removed by a sponge. One of the author's patients had several miscarriages during the three or four years previous to her consulting him, and, on each occasion, was in much risk from flooding. In two cases, exaltation of sexual feeling attended the disease; in the others there was no alteration in this respect. In some of the cases the patients suffered also from hæmorrhoids, but in others they were free from this complication, and none of them had varicose veins of the leg. All were married, and mothers. One of them was fifty years of age; the others were between 35 and 46 years old. Sexual intercourse was not attended with any pain; in one case, the patient lived separate from her husband for eight years, not on account of the pain consequent on intercourse, but because a great increase of hæmorrhage always ensued. In this latter respect, the author observes, the practitioner must discriminate between this ulcer and "Cauliflower Excrescence" of the uterus, which being devoid of pain, and the hæmorrhage coming on after intercourse, might be mistaken for "*Varicose Ulcer.*" Though the bloody discharge is profuse, it is not offensive; differing in this particular from the bloody or sanious dis-

charges of cancer and corroding ulcer. The treatment found most useful has been the following:—rest in the horizontal position, the application of the pernitrate of mercury to the ulcerated surfaces and to the fissures already described, and after one or two applications of the escharotic, *tannin injections*, in the proportion of five grains of tannin to one ounce of water. The author has used various other astringents, but as he did not find any of them to arrest the bleeding so efficaciously as the tannin, it is unnecessary to allude more particularly to them. Should the ulcers exhibit a sluggishness in healing, the use of nitrate of silver will hasten the process. Great attention must be paid to the state of the bowels, as any obstruction in them is calculated to produce venous congestion of the pelvic viscera. As the patient is generally much debilitated and anæmic when she applies for advice, the author has found the use of iron and quinine highly beneficial; but if constipation be not present, he prefers the pernitrate of iron to all the other ferruginous preparations, as it acts remarkably well as an astringent as well as a chalybeate. Wine or malt liquors are always indicated when the circulation is languid, and the animal heat depressed; but if these complications be not present, the patient is as well without them.

ART. 109.—*Reduction of Inversion of the Uterus under Chloroform.*

By (1), Dr. S. W. MERRIMAN; (2), Dr. JAMES AYER, (U.S.); and (3), Mr. GEORGE CANNEY, of Bishop Auckland.

(*Medical Times and Gazette*, Sept. 4th and 18th. *Canada Medical Journal*, July, 1852.)

1. [Dr. Merriman believing that no attempt has been made in this country to reduce chronic inversion of the uterus, by the aid of chloroform, quotes the following case in which this operation was successfully performed by M. Barrier, at Lyons. The case is thus related.]

“The subject of the paper was a young married woman, æt. 24, who was confined of her second child on December 14, 1850. Her labour was natural, and lasted ten or twelve hours. The delivery of the placenta was painful, and of long duration, followed by an abundant hæmorrhage, which yielded to cold compresses on the hypogastrium. Three days afterwards, the patient felt a tumour come out of the vagina, as big as the head of a full-grown fetus, and from this time she had frequently hæmorrhages and leucorrhœas alternately. It was not till long afterwards that, the disease being recognised by a physician at Lyons, she was admitted under the care of M. Barrier, who ascertained her condition to be as follows:—The patient could scarcely walk or stand upright; she had pains in the region of the kidneys, and a very great pain at the orifice of the vagina, with a sensation of bearing down and constipation; micturition was not difficult, the abdomen was natural, except a little pain on pressure, over the left ovary; she was very much reduced, and in a state of extreme chlorosis; she was often threatened with fainting when she stood upright. The hæmorrhage had returned after a week's cessation, and was copious. On examination by the toucher, the finger scarcely

entered the vagina before it felt a tumour in that canal, free below, and all around, but adhering to the further extremity of the vagina, by its upper portion. The tumour was pyriform, larger below than above—its size a little above that of the normal uterus; its surface was soft, velvety, and flocky or tomentose, without either elevation or depression, and presenting no orifice. The upper part of the tumour formed a largish cylindrical pedicle, in continuity with the extremity of the vagina, and arising from it; only at the juncture of the two a circular elevation presented itself, over the whole of which the finger could pass, without being able to penetrate between it and the tumour, as happens in cases of polypus or incomplete inversion of the uterus. The tumour had the natural consistence of a uterus, being neither decidedly soft nor hard; it was very moveable on its point of attachment; the vagina was large, but nowhere inverted. The orifice of the vagina was too small to allow of procidentia, after the protruding part had been once pushed back. It was clearly a case of complete inversion of the uterus, although contained within the vagina, and consequently agreed with the first variety of the three forms recognised by authors, and especially by Boyer.

“Convinced of the insufficiency of medicines to restore a patient so weakened by continual hæmorrhages, M. Barrier decided at once to attempt the reduction of the inversion; and, having a little strengthened the patient by rest, quinine, and steel, he profited by a suspension of the hæmorrhage to try to replace the uterus by a form of the taxis in the following manner:—The patient being placed on her back, the hips brought to the edge of the bed, the thighs separated, and etherisation effected, M. Barrier introduced his hand into the vagina. To give the uterus as much fixedness as possible, he placed it in the hollow of his four fingers; then, by pressing with the ball of the thumb applied directly to the fundus uteri, the most dependent part, he pushed it back in the direction of the axis of the outlet, with the intention of placing the neck of the uterus against the sacrum, and of supporting the extremity of the vagina by a resisting medium, in order to guard against its rupture. After a few minutes of gentle but sustained pressure, the fundus uteri had entered into itself (*était rentré en lui-même*) from two to three centimetres. The same pressure was still kept up for an instant, when, feeling the organ gradually give way, the operator passed his index and ring-fingers into the depression where his thumb had begun to lodge itself, as he pressed back the fundus uteri. With these two fingers he changed the direction of the force without increasing its amount; he then pushed back the fundus uteri from below upwards and from before backwards. Immediately the uterus yielded completely, and took again its natural position. All pressure being now abandoned, M. Barrier examined the state of the parts; by his hand placed on the hypogastrium, he felt the womb in its usual position; his fingers passed *per vaginam*, entered easily to a considerable depth into the dilated cervix, which, fully dilated, was continuous with the vagina, without any sensible line of demarcation. The reduction being effected, a vulcanised caoutchouc bag was placed in the vagina, and distended, in order to

prevent a return of the malady, as also of the hæmorrhage, which was feared. During the operation the patient lost only from twenty to thirty grammes of blood; and she recovered without accident, being completely cured. The paper was referred to MM. P. Dubois and Danyan, but their report has not yet been published."

[Dr. Merriman is in error in his surmise that anæsthesia had not previously been employed for the reduction of inverted uterus. In proof of which we refer him to p. 169 of our Seventh volume. In this case, also, the inversion was of sixteen months' duration.

2. In Dr. Ayer's case the inversion had existed thirty hours, and the anæsthetic agent employed was ether, not chloroform. The condition of the parts and the operation are thus described:]

"Next morning, thirty hours from delivery, the protruding mass was larger than the double fist, dark coloured, strangulated, and very tender. I had been able, at every visit, to circumscribe the tumour, feel the neck distinctly, and pass the finger up between the neck and the os tincæ, and thus pass it around the entire circumference. At this visit I could not circumscribe it, on account of its size, but could pass the point of the finger up as far as the cervix—but could press it no further. A hard ring or cord appeared to prevent any further progress. The whole body of the organ had evidently become inverted. The hæmorrhage on delivery had been moderate, but had constantly increased up to this time. The pulse, also, had been constantly increasing in frequency, and had taken on an inflammatory character; it now numbered 105 per minute. There was a white fur on the tongue, skin dry and hot, and considerable thirst. Some degree of tenderness over the bladder was noticed, and a swollen and tender condition of the labia pudendi. Since delivery, urine had been voided only once, and then pretty freely. Having reflected on the relaxing effects of ether in the tissues I determined to give it a trial, and accordingly, while the inhalation was gradually conducted by an assistant, I grasped the fundus uteri, and made gentle pressure. As the system became relaxed the tumour gradually diminished. In thirty minutes the vulva became perfectly flabby, and the tumour soft and compressible. I made firmer pressure, and it was reduced to the size of a hen's egg. The finger could circumscribe it. It remained twenty to thirty minutes of this size—uncertain whether further ground could be gained—and then disappeared *per saltum*, with the peculiar feel of a receding hernial tumour."

3. [Mr. Canney's case is recorded in the 'Medical Times and Gazette' for September 18. It is thus told:]

"A female, æt. 28, was delivered in August, 1851, of a second child. After delivery the womb became inverted. This was said to be replaced, but pain and flooding continued. After a week the symptoms subsided, and at the end of a month she was able to sit up for half an hour at a time; but, during the whole of this period, she suffered from severe pain in her back, from frequent floodings, and, in the intervals, from leucorrhœa. About the end of September the medical attendant was called in again, on account of the persistence of these symptoms, which were said to depend on weakness and a little pro-

lapsion of the womb; but, unfortunately, no examination was made at this time. In about ten days she was finally abandoned by her medical attendant.

"On the 5th of January, 1852, I was first requested to see her. I found her frightfully exhausted, perfectly blanched, face and limbs œdematous, and unable to walk across the room without assistance, on account of palpitation, breathlessness, and vertigo; she had constant pain in her back, weekly floodings, and constant leucorrhœa in the intervals.

"On examination per vaginam, a sausage-shaped tumour about three and a half inches long, and about four and a half inches in circumference, was found projecting from the os uteri, the apex of the tumour resting on the point of the sacrum; it was not very sensitive, and quite smooth, except towards the os uteri, where it was rough, and the same uneven feel was perceptible on the inner surface of the dense ring formed by the os uteri round the base of the tumour, beyond which ring the finger could not be passed.

"The case was clearly one of chronic inversion of the uterus, and the attempt to reduce it under the influence of chloroform was determined upon, and put in practice the following day. The patient was laid on her right side diagonally across the bed, the nates projecting over the edge of the bed, and the knees being well drawn up on the abdomen. The chloroform, the effects of which were carried to complete relaxation of the sphincters, was administered by my friend Mr. Thwaites.

"The fingers of the right hand, formed into a cone, with the back of the hand towards the back of the patient, were applied to the os externum; and as soon as the chloroform had been inhaled for a short time, the entire hand passed almost without resistance into the vagina. The tumour was now grasped between the fore and ring fingers; it was supported in front by the thumb, and the point of the middle finger was applied to the apex of the tumour; the hand, with the wrist extended, was carried up until the vagina was put fully on the stretch, and then, by slightly flexing the wrist, the tumour was gently pushed forwards and upwards in the direction of the axis of the brim of the pelvis. As soon as the patient came under the full anæsthetic influence of the chloroform, the tumour gradually receded until the whole of the middle finger was pretty firmly encased in the uterus; by a gentle rotatory motion, the finger was disengaged from the uterus, and the inversion successfully reduced; the whole operation, from the first inhalation of the chloroform, not occupying more than five or six minutes, and the force used being almost trifling. A week of quiet and mild nourishing diet greatly restored the patient, and eight weeks of quinine and steel freed her from her anæmic sufferings. Five weeks after the operation the catamenia returned, and again at the end of a month. Since the operation, she has been perfectly free from pain, flooding, or leucorrhœa.

"It was remarked, that during the reduction, there was no sudden starting back of the tumour; it required to be pushed in upon itself until the lower half of the tumour was inclosed in the uterus, and then

the finger was carried along the uterus until the reinversion was complete; the apex of the tumour affording most resistance, and requiring, as it were, to be smoothed out with the point of the finger.

"The absence of any rebounding was, I think, owing to the chloroform so completely relaxing the uterine fibres; the difficulty in unfolding the apex might be owing to some œdematous swelling of the part; but I think this was due to the effects of the chloroform having somewhat gone off, because the inhalation was discontinued as soon as the tumour began to recede, and before I could get the apex smoothed out, I found the finger was sensibly grasped by the uterus; and this evident contraction of the uterine fibres ceased on giving more chloroform.

ART. 110.—*Remarks on Subacute Ovaritis.* By E. J. TILT, M.D.

(The Lancet, July 17th.)

[Dr. Tilt has recently put on record a large selection of cases of subacute inflammation of the ovaries, a pathological condition which he believes to be of frequent occurrence, and to have been formerly overlooked, or confounded with simple nervous excitation of those organs, or of the uterus. As deductions from these cases, he gives the following summary of causes, symptoms, and treatment:]

"1st. *Predisposing Causes.*—With regard to the predisposing causes of subacute ovaritis, irregularity of the menstrual process is one of the most frequently observed; for eight times out of ten it occurred in connection with menstruation. The earlier part of womanhood also would seem most liable to this disease, as seven out of ten patients were under twenty-three, and the eldest was only thirty-two. Those too are most liable to it who are endowed with a sanguine constitution, dark eyes, and red, auburn, or black hair, constitutional peculiarities generally supposed to be allied to an ardent temperament. In this, my experience is supported by that of Dr. Pistocchi, of Bologna, who has lately published some interesting cases of ovaritis, and says that all the patients were women gifted with strong passions. Six out of the ten patients were single.

"2d. The *determining causes* were over-exertion during menstruation, the sudden impression of cold, marriage. In five cases, however, none could be discovered.

"3d. The *symptoms*: pain in one or in both ovarian regions. The pain being fixed, but sometimes subject to irregular exacerbations, being increased by pressure, by going up and down stairs, by a false step, or by anything that could jar the corresponding limb. It is well to notice that pressure on the ovarian regions did not generally determine pain in the course of the lumbo-abdominal nerves. In two cases the pain was accompanied by an amount of abdominal swelling discernible to the eye, obscurely felt on pressure on the abdomen, better appreciated by a vaginal examination, and which would have been made certain if a rectal examination had been deemed requisite. In five cases there was considerable pain and swelling of the breast cor-

responding to the side affected, and of both when both sides were diseased. This symptom was most marked in Case 6, which did not occur at a menstrual epoch. Dr. Pistocchi has noticed it in two cases; but I think Dr. Lightfoot has gone too far in considering it as pathognomonic of ovarian inflammation. Thus the mammary glands, the uterus, and the ovaries, form a chain of organs as strongly linked together in the morbid as in the physiological state. In Case 1 there was numbness and pain in the corresponding limb, a symptom noticed by Dr. Simpson. In four cases there was fever, but of no great intensity.

"4th. The terminations or morbid conditions induced by sub-acute ovaritis were, a painful congestion of the womb in four out of ten instances; in three, remittent menstruation; a deficiency of the menstrual excretion in three more; and in two, bilious plethora. Dr. Rigby has dwelt on the sickening nature of the pain determined by ovaritis; and Dr. Woolley, of Brompton, tells me he has often seen cases similar to those above described by me, and frequently noticed sickness as one of the symptoms. Dr. Laycock alluded to it some time back as a symptom frequent in this as in all ovarian states, both physiological and morbid.

"5th. *Treatment*.—The same local measures previously described were always adopted, with the addition of leeches and the internal exhibition of antimonials when there was fever. In the cases coinciding with marked biliary derangement, I prefaced all treatment by an emetic, the temporary increase of pain thus mechanically determined being amply compensated by the relief speedily afforded to the patient. Sulphate of quinine was very useful in bringing back menstruation to its normal type; and I cannot too strongly recommend its exhibition alone, or combined with steel or opium, according to the case.

"6th. *Duration of the disease*: generally about twenty-one days; but in one case, of probable long standing, it was four months, and in another there was a relapse.

"With this summary of my cases I might conclude, if they did not afford me an opportunity of offering some remarks on the diagnosis of sub-acute ovarian affections—remarks, the length of which will perhaps be indulgently received, on account of the recognised difficulty of arriving at a correct diagnosis.

"Cases similar to the preceding have doubtless been of frequent occurrence, but they have been differently interpreted.

"1. Formerly when they were met with, and sometimes even now, particularly when they do not occur at the monthly periods, they were confounded with diseases of the womb, and called inflammation of the bowels—a name which will doubtless be considered erroneous, as far as the localisation of the disease is concerned, but which, being correct in the indications of its nature, fortunately often leads to proper treatment.

"2. When cases similar to those I have reported took place at, and in connection with, the menstrual periods, they were, and are even now, confounded with many other morbid states, under the name of dysmenorrhœa. They are considered to be merely an increase of that

pain by which menstruation is usually attended, and generally left without treatment. This I believe to be often detrimental to the patient's after health.

"III. Some would be inclined to explain my cases by incipient uterine disease, and might be impelled by theory to resort to measures, excellent in uterine, but unnecessary, if not dangerous, in ovarian disease. Being in doubt as to four out of the ten cases, a digital examination convinced me that there was no uterine disease; and in the history of the other cases there was nothing to make me suspect its existence, nor to warrant a vaginal examination.

Admitting that mine were neither cases of inflammation of the bowels, of dysmenorrhœa, nor of uterine disease, I must remark that they can only be explained by supposing them to depend on a nervous affection of the ovary itself, or of the lumbo-abdominal nerves, which supply *alike* the womb and the ovaries and their protecting cavity, unless I am right in considering them to exemplify a subdued type of ovarian inflammation. It would be impossible for me to show that they did not depend on ovaralgia or lumbo-abdominal neuralgia, unless I be permitted to clear the ground by a few remarks on these affections.

"*Ovaralgia* has been admitted by systematic writers, vaguely described by German pathologists, and lately brought prominently forth under the name of ovarian irritation, by Dr. Fleetwood Churchill. But while admitting that the ovaries, like the uterus, may express their own disorder by pain transmitted to the same system of nerves, we must also bear in mind that those nerves may take upon themselves a morbid action, quite independent of diseased ovaries or womb—that lumbo-abdominal neuralgia may exist.

Certain forms of *lumbo-abdominal neuralgia* were well described by Chaussier; but it is only since the modern investigations of the nervous system, that it has been permitted satisfactorily to explain, by lumbo-abdominal neuralgia, certain morbid states formerly ascribed to the abdominal viscera. Without pretending to say that ovaralgia does not exist, I must own that I have never as yet been able to detect it, and am inclined to think that cases described as such are to be referred to lumbo-abdominal neuralgia. I make this assertion with some hesitation, because by so doing I find my opinion opposed to that of an obstetric authority of so great a value, that by differing from it I incur the risk of being wrong; but, if wrong, my dissent will furnish Dr. F. Churchill the opportunity of more forcibly vindicating his own opinions.

"On perusing Dr. F. Churchill's interesting communication on Ovarian Irritation, in the impression of the 'Dublin Medical Review' for July, 1851, and comparing it with what Drs. Beau, Valleix, and some other French authors, have written on lumbo-abdominal neuralgia, it will, I think, be evident, that they have all described the same disease. Neither would it be difficult to explain the mistake; for it is well known that it is in the nature of the affections of nerves to be attended by pain more concentrated in certain points, whence at times pain radiates, and pressure to which increases pain. The

lumbo-abdominal neuralgia is often indicated by one or more of the following *foci* of pain: 1, the lumbar; 2, the iliac; 3, the hypogastric; 4, the inguinal; 5, the uterine.

"I think that Dr. F. Churchill, being particularly struck by the inguinal or ovarian point of pain, has described, under the name of ovarian irritation, a complaint which has been justly referred to a morbid sensibility of the lumbo-abdominal nerves by Drs. Valleix, Oxenfield, Beau, and others. He has followed in this the example of Gooch, who described as irritable uterus those cases of lumbo-abdominal neuralgia in which the neck of the womb is the principal centre of pain; an example already set by neuro-pathologists, who have described as spinal irritation an ill-defined group of symptoms.

"I refer the reader to Dr. F. Churchill's paper, and to the French authorities I have quoted, in proof of the great similarity, if not identity, of the morbid state described as ovarian irritation or lumbo-abdominal neuralgia. But, under all circumstances, I object to the term *ovarian irritation*, because it has already been employed to express the physiological action of the ovaries, and imports another vague and indeterminate term into ovarian pathology, already sufficiently obscure. If it be only pain, let it be called ovaralgia, or lumbo-abdominal neuralgia."

ART. 111.—*Considerations respecting Operative Influence on Ovarian Tumours.* By J. B. BROWN, Esq.

(The Lancet, July 31, 1852.)

[The graver kinds of operative interference, if admissible at all, are only so after the minutest investigations of the nature and connections of the tumour. This is well shown in the following extract. Speaking in reference to operation by one or other of the plans usually adopted, Mr. Brown says:]

"To arrive at a safe conclusion as to our line of practice, we have to consider the age and health of the patient; the duration and cause of the malady, and the affections supervening upon it; the previous treatment resorted to; and, with respect to the cyst, its nature, whether singular or multilocular, or malignant; and the character of its contents, physical, chemical, and microscopical.

"Ovarian disease rarely affects those under the age of puberty. I have mentioned one instance, (see 'The Lancet,' Feb. 1848;) but after the appearance of the menses, from the sixteenth or seventeenth year, throughout the child-bearing period, and particularly at its climax, and even at and after the 'change of life,' though then much less so, ovarian dropsy is a not infrequent disease. It also attacks both the married and the single. *Ceteris paribus*, youth is more favorable to its cure.

"Where the health is shattered, or where any organic malady exists, it has the prior claim on our attention, before proceedings specially directed to the ovarian malady: for, be the operation what it may, it can neither be warranted nor successful without at least a tolerably good, healthy condition.

"Where any fatal organic disease of a vital organ, as the heart, lungs, kidneys, or liver, is present and advancing, operative measures are contra-indicated, and palliatives must be our only resource. But where such impediments to special treatment are wanting, any remediable malady must be relieved; and where there are general debility and depravation of health, depending on sympathy with mechanical disturbance from the ovarian disease, or on previous treatment, as by drastic purgatives, diuretics, &c., benefit is to be sought by the use of tonics, especially of preparations of steel; whilst remedial measures, directed to the cure of the cyst, may probably be simultaneously employed.

"Ovarian dropsy has numerous concomitants originally resulting from it, more or less involving the general health of the patient; most of them have a mechanical origin from the pressure of the sac acting directly or by sympathy. Thus the cyst, by its upward pressure against the diaphragm, causes great dyspnoea, interruption to the pulmonary circulation, and a tendency to syncope; it also sympathetically disturbs the stomach, producing indigestion, nausea, and vomiting; whilst the heart becomes subject to palpitation. Its pressure, again, obstructs the circulation and secretion of the kidneys, and, I believe, also lays the foundation of organic disease in them; the same cause affects the liver similarly, creating congestion and enlargement; in the pelvis it is seen to cause displacements of the uterus, as procidentia uteri; to obstruct the action and circulation of the lower intestine, and so to lead to prolapsus ani, to hæmorrhoids, and to ulceration and fissure of the anus; and lastly, it produces a frequent desire to empty the bladder. In the majority of cases the catamenia persist.

"Other accompaniments of ovarian dropsy depend on the actual weight of the tumour, causing various uneasy sensations, as of a dragging from the loins, with pain in the back and side, and often with nausea, and a general feeling of weariness.

"The preceding effects, co-existing in greater or less number, may have so seriously damaged the constitution, by their severity or duration, as to have destroyed the prospect of cure; and thus, without reference to the disturbance caused by those effects, the duration of the ovarian malady cannot be used as a criterion in judging of the amenability to treatment.

"This last point depends also on the cause of the ovarian dropsy, whether acute or chronic ovaritis, its most common prelude, or otherwise.

"Again, in concluding on our plan of treatment, we have especially to investigate the nature and relations of the diseased ovary. The first thing to discover is, whether the disease is simple or multilocular; and if the latter, whether it is composed of simple sacs, or has solid tumours adherent. The apparently solid tumours are oftentimes younger, unfilled, or undeveloped cysts, and will too frequently advance, even when by treatment we have overcome the primary sac.

"The next point is to find if the sac be adherent anywhere, and if so, the extent and degree of adhesion. The result of this investigation will greatly determine the future treatment. If the sac be simple, and the health tolerably favorable, the plan by pressure, diuretics, &c.,

should be tried, and, as I think, the cases I have already published will bear me out in saying that a cure may often be anticipated from it. Even where the case is multilocular, or otherwise unfavorable, pressure not unfrequently is beneficial, and at all events retards the progress of the malady.

“But though we may by general examination make out the uni- or multi-locular character of the sac, the presence or absence of adhesion, and in some degree the nature of its contents, their density, &c., yet our diagnosis will be much more secure upon puncturing the cyst and examining its fluid; and if doubt remains as to future proceedings, even an exploratory incision may be made.

“It has been made an objection to my mode of treatment by pressure, that the operation of tapping which it involves renders the subsequent recourse to ovariectomy impossible, or nearly so, on account of the adhesions formed about the seat of puncture. This objection is, however, overruled by experience; for in the majority of cases, where an opportunity of future examination offers, no such adhesions are produced; that is, adhesion of the sac to the abdominal parietes is no necessary consequence of paracentesis abdominis; where it does happen, some peritonitis must have supervened upon the operation.

“I have just stated that even an exploratory incision through the abdominal wall and peritonæum down upon the cyst may be made, in some cases, where we still remain in doubt as to the ultimate operative proceeding indicated. I know that the ordinary impression is, that any incision made into the peritonæum is a matter of great moment and hazard, and such as should not be practised under the circumstances I have supposed. But this notion the result of my experience does not bear out. I have made such incisions at least a dozen times in carrying out the treatment of ovarian dropsy, or of other abdominal lesion, and have never been troubled with any ill consequences. It may be surmised, that in cases where the peritonæum has been much stretched by abdominal tumours, it takes on a diseased process less readily than when in the normal state; indeed, I am inclined to believe this to be the case.

“An exploratory incision will be rarely called for, except in cases where treatment by pressure and tapping has been resorted to and failed, and some further operation is determined upon. When desirable, the incision will be best made in the semilunar line, and may be two or three inches in length. Supposing now that by our examination we have discovered the cyst to be simple and non-adherent, and that pressure has been already tried unavailingly, we may tap again, and endeavour to withdraw the entire sac, according to Mr. Jefferson's proposal, or empty the sac, and then cut a piece out of it and return it. Again, supposing adhesions to be wanting, but the cyst multilocular, and progressing in development in spite of other modes of treatment, we still have ovariectomy as a *dernier ressort*, supposing this not contra-indicated by the state of health of the patient, nor by the nature of the sac or of its contents.

“If the ovarian sac be adherent, we have yet another operative proceeding to fall back upon—viz., that of forming what I have termed

in a previous paper ('The Lancet,' vol. i, 1850,) an 'artificial oviduct;' in other words, making a fistulous opening into the sac, through which it may constantly discharge itself, and finally slough away. From this operation I yet anticipate the best results; its principle seems incontestably good; and although I cannot refer to it as having altogether made a successful cure, yet it has produced sufficient benefit to induce me, on a future favorable opportunity, to repeat it, and at the present time to recommend it to my unprejudiced readers. The operation in question is available, though in a less degree, in the case of multilocular disease; but, like all the others, it must not be performed on a shattered constitution.

"I come now to the consideration of the cyst itself and of its contents, upon which particulars our treatment must greatly depend.

"In some cases the cyst is found of great hardness and density, or it is the subject of the so-called cancerous or malignant disease; but which, according to observations I have made, cannot be rightly so designated. Where such conditions are present, the idea of operating must be laid aside, for no good can come of it. The cyst cannot take on healthy action and absorb future formations of fluid after its previous evacuation, and any process it may set up will be of a morbid character; whilst the health will sink under any plan of treatment involving a drain from the system by suppuration.

"Of the fluid contents of ovarian sacs, the most favorable is the limpid, pale straw-coloured liquid, containing very little albumen. This chiefly occurs in simple cysts, or in the newly-developed appended ones of multilocular sacs.

"Unilocular ovarian disease, having fluid with such characters, is very amenable to any plan of treatment by pressure, &c., and the earlier that plan is adopted the better; for by long persistence—for example, as a rule, above three or four years—both the tissue of the sac and its contents undergo a change. An ovarian sac, like abnormal tissues in general, is prone to diseased action, and is often the subject of inflammation, which sets up adhesions, increases the density of its walls, and of its fluid also, by augmenting the albumen. In some instances, where the sac is of old standing, or has been the subject of oft-repeated morbid action, or especially after it has once been punctured, the fluid will often get mixed with altered blood, and so obtain a coffee-ground colour. In other cases the fluid undergoes still greater changes in colour and consistence; it becomes grumous, of a deep-brown or even inky-blackish colour, and, though rarely, of a treacle-like consistence; not unfrequently solid albuminous flakes are mingled with the fluid.

"Wherever, by tapping, a sac has poured out such contents, differing so considerably in colour, consistence, and density from the common thin serous fluid, it is wrong to interfere by any severe operation. Such fluids show a very morbid condition of the cyst, and also imply a very great deterioration of the blood, and consequently of the health; for I am disposed to believe this drain of albumen from the blood into ovarian sacs operates as injuriously upon the general health as albuminuria itself.

"The colour of the fluid is not *per se* sufficient for diagnosis; the density must be ascertained, and chemical tests be applied for the albumen. This substance is occasionally present in clear, pale cyst-contents, in very considerable quantity; so much of it, I have witnessed, as to almost solidify like an egg upon boiling. Where albumen, therefore, is in so great abundance, our treatment must rather be palliative, and pressure after tapping is the most effectual palliative for such cases, retarding as it will even in them the fatal progress of the malady. The density of the contents of a sac is sometimes so great that it actually feels like a solid body, fluctuation even not being perceptible.

"More precise chemical analyses of the fluid of ovarian dropsy are extremely desirable, for I anticipate from such some certain rules of diagnosis and indications of treatment. Similar accuracy, and very extended observations, are wanting to render our knowledge of the microscopical characters of the tissues of ovarian sacs and of their contents at all available for practical purposes. These matters I am not negligent of in my inquiry into the pathology and treatment of ovarian dropsy; and I may add, that I have also had the blood and urine, in some cases in that disease, examined both microscopically and chemically; but these investigations have not yet been sufficiently pursued to warrant the introduction of their results.

"Sufficient has been said to show that it would be folly to insist upon any one of the modes of treatment devised at the present day, as generally applicable in ovarian dropsy; but that, on the contrary, a particular line of treatment must be selected in each individual case, according to its symptoms and pathology.

"Hence the general tables which have been drawn up to show the special advantages or the defects of particular methods of operating, are deficient in value. Thus, with respect to ovariectomy, they give no fair representation of its results, for, in probably the majority of cases, that operation has been performed when too late to be of service. The same remark applies with reference to my mode of treatment by pressure, &c.; that mode can be successful only under particular circumstances, and the increased experience I have obtained, has brought me to a useful knowledge of those circumstances, so that any detail of a number of future cases, equal to that already published, would, as a natural consequence, be a more accurate representation of the results to be expected from its adoption."

(B.) DISEASES OF CHILDREN.

ART. 112.—*On the Symptomatic Value of the Cerebral Symptoms in Infantile Fever.* By Dr. MEREL.

(*Proc. Med. and Surg. Journal*, Sept. 1, 1852.)

[The practitioner is frequently harassed by anxious doubts as to the character of headache and other cerebral symptoms in infantile fever; and as a correct diagnosis is of the last importance under these circumstances, we extract the following practical remarks from the

valuable course of lectures to which we have previously been indebted:]

"*Headache*, a most constant companion of fever, easily appreciated and less alarming in adults, appears more obscure and threatening in children, because they cannot give us *symptoms by words*, so as to facilitate the distinction from congestion or meningitis. It manifests itself in the child in different degrees, when lifted up in the arms of the mother or nurse, by its difficulty or inability of holding its head upright, by leaning it on the shoulders, along with simultaneous appearance of some perpendicular wrinkles on the forehead between the brows, languor of the eyes, falling of the upper eyelid, and plaintive moaning; considerable degree of heat on the front. The little patient keeps the head rather steadily and quietly in the same posture, without restlessly moving it; and all the above symptoms are equable for some time. Recollect what adults say in this state by words, and thus you will have the whole more clearly before you. Sometimes they complain of acute, at other times of dull pain, on pressure, or giddiness. These differences it would be difficult to trace in a child; we must content ourselves with knowing that there is *headache present, and judge of its importance according to the degree and weight of the above symptoms, comparatively with the general state, or some important local affection*. In a little child we must be very careful, because painful abdominal affections may cause dropping of the head, moaning, and frontal wrinkles, just as if the head itself were suffering pain.

"As to the *nature of febrile headache*, it is but an old superficiality, which always identifies pain and heat in the head with congestion. We know little of the nervous fluid yet, so plentifully developed in the brain, and of the laws of its circulation. The fact, however, stands firm, that paroxysms of intermittent fever present, as to heat and pain, a severe kind of headache, and still there is little fear of meningitis. Nervous headache in delicate ladies manifests the same severity, with the same exclusion of meningitis. In both cases, generally, leeching does not cause relief. Thus we may be allowed to establish a febrile headache of the nervous kind, perhaps a congestion of the nervous fluid causing pain or spasm. As to congestion of blood in the brain, which, of course, may also be connected with febrile headache, just as it complicates, occasionally, even hysterical headache,—this, in the height of fever, I do not know how to distinguish exactly; I believe, however, that in the case where congestion is the principal affection, there will be the appearance of a higher degree of heaviness of the head, and of the languor of the eyes and eyelids, more oppressive somnolence, or even soporous sleep, high heat on the forehead, but less of the extremities, and less moaning. And in the case of decided inflammatory action in the envelopes,—that is, in the first stage of meningitis, there will be, with a given degree of heaviness and heat, less sleepiness, and, instead of steady posture, even restless rolling and pushing of the head here and there, and a more lively expression of pain, with occasional startings and screamings. The second stage is too clearly characterised to admit mistakes.

"As to eclampsy, during the stage of febrile heat, I have been satisfied, by many dissections, that it is less frequently a symptom of

the first stage of meningitis, than the effect of different febrile and non-febrile, gastric, or other disturbances acting upon the nervous system, consequently there is a more natural combination between eclampsy and headache of a nervous or spasmodic kind, than between eclampsy and meningitis. Gastric disorder, during fever, I believe frequently may be the simultaneous effect with headache, and is, perhaps, too generally considered as its source; at any rate, whenever fever, and along with the signs of headache, gastric disorder is well ascertained by its local and functional symptoms, we may be almost sure of the *non-inflammatory* nature of that headache. Tense epigastrium, for example, and furred tongue, are frequently connected with nervous, but never, I believe, with inflammatory, headache. Moreover, consider the following comparative analysis:—A paroxysm of fever, with headache, in order to make us apprehend acute primary congestion, or meningitis, must be rather intense. Now, if this be the case, the temperature of the skin in fever will be high, and so all over the body, the highest on the epigastrium; and the pulse of a little child between 150 and 170, or more. And all these conditions, unitedly, will be the more expressed in high *gastric fever*, in which, also, the highest degrees of sympathetic headache do occur; whilst in the case of active congestion or meningitis, generally, and proportionally to other symptoms, there is less heat and dryness. Hands and feet frequently even cool in comparison with the forehead, and in many cases the pulse less frequent.

• “Vomiting of bilious liquid may be the effect of simple fever or febrile headache, as well as of meningitis, and in both cases the epigastrium is soft, consequently this symptom has in itself not much diagnostic value.

• “Acute hydrocephalus (anatomically different from genuine meningitis), in the great majority, does not set in so suddenly, and under that sudden appearance of high fever, as we have described it above; a careful observer will, therefore, be less exposed to confound the first stage of hydrocephalus with the simple febrile head-symptoms, than the first stage of meningitis.

• “In conclusion, I have been satisfied too, that simple febrile headache is far more frequent than meningitis or hydrocephalus.

• “All these different diagnostic points, of course, taken *singulatim*, admit of exceptions, and cannot be trusted by themselves; considered, however, in relation with each other, and many special circumstances of the case, they are of some value. I nearly forgot to recommend great care and application, in accustoming your hands to distinguish the proportion between the heat on the forehead and on the epigastrium; this, I find, is important. In congestion or meningitis, the heat of the epigastrium is less. In medical practice there are few points of greater difficulty than that in question. Even in adults we labour sometimes under the ambiguity between the nervous and congestive character of headache. Nor can it be denied, that in many instances congestion may join spasmodic pains; or that headache, which at first was but an effect of nervous disorder, proper to fever, may become congestive. The question will be,—shall you, in a given

case of recently-developed primary fever, under the mentioned appearance of the head, resort to energetic leeching, or wait, or adopt, some milder means? By the industrious and clever application of your senses and mental powers, an increasing number of patients will by and by increase your discernment, which I only wish to assist by giving you some facilitating directions.

"There are, however, those intermediate and undecided cases, in which we cannot get rid of the ambiguity between simple headache, and congestion or meningitis. This has been the case frequently with me, though I have seen thousands of them; and it will be the same with you. In similar emergencies I can but recommend you the following conduct:—Consider well the constitution of the child; is it strong? then, after you have freely moved the bowels, and energetically used cold fomentations, without effect, leech it; in the contrary case, wait a little longer before you take blood. And, in spite of the apparent vehemence of head-symptoms, abstain from taking blood, if you have before you one of those scrofulous habits, with thin legs, and a large, flat, angular skull, or a rachitic or a very delicate decidedly nervous child. These are all exceedingly liable to febrile disorder and headache, but not to inflammation, and are injured by loss of blood.

"*Cold fomentations on the head, abundant cold water and sugar to drink*, and perhaps a cooling injection, (of thin barley decoction, with sugar and oil,) will best answer the indications of that hot stage, with headache, within the first twenty-four hours. Sinapisms are improper at that stage for tender infants; they might increase the fever, by irritating their tender skin. If, then, the general febrile symptoms continue longer than twenty-four hours, with unabated heat, pulse, and thirst, and heaviness of the head persists, or increases, together with languor of the eyes, and heavy moaning, restlessness, and painful crying, or occasional outcries, where no remarkable gastric derangement is discoverable by the above-mentioned signs, and after the bowels have been moved, then the indication of leeching acquires more weight and consideration.

"Your call in these cases ought to be repeated after a few hours, and again the examination be performed with the same minute care as described in my last lecture. Do not forget to particularly investigate mouth and throat, outside and inside; and offer the child some water and sugar to drink, carefully observing his swallowing movements; and if you see they are not free, as if checked under expression of pain—in one word, if you find the slightest signs of pharyngeal irritation, with a degree of dryness in the mouth, do not hesitate to order an emetic. This is one of the important points of children's practice. In hundreds of similar instances I have ordered the emetic where I should not have felt pressed to order it to grown up people; the reason is, the greater frequency, rapidity, and danger of laryngeal and pharyngeal inflammations of children.

ART. 113.—*On the Abdominal Spasms of Infancy.* By Dr. MEREL.

(Edinburgh Monthly Journal of Medical Science, Oct. 1850.)

[The following extracts were mislaid, and are therefore somewhat behind date. But the delay has not sacrificed the importance which we conceive to attach to them.]

“Among the diseases which decimate infancy, and whose treatment constitutes the most arduous task of the practitioner, the functional disorders of the cerebro-spinal system occupy an important place. It is especially in the tenderest period of childhood, the first year, that these nervous affections, so obstinate and destructive to life, abound; and the disposition to spasms and convulsions at this early age is so very general and intense, that even children of the best constitution are, without any appreciable cause, sometimes subject to the most severe nervous fits.

“Many points in the special pathology of these affections are as yet very imperfectly developed. For my own part, I can but attempt to supply some data of experience and inquiry on this subject; the simple narrative of what I have seen, among the many thousands of patients, treated in the children’s hospital of Pesth, and in the course of an extensive private practice.

“1.—*The Abdominal Spasms of Children newly-born or of tender age.*

“I shall first treat of a *neurosis* not dangerous to life, but which constitutes the most painful scourge to tender childhood—*abdominal spasms*. This affection is generally abandoned to the domestic treatment of mothers and nurses. I have even known physicians, who esteemed the subject as more properly belonging to the department of domestic and popular medicine, than to that of scientific inquiry and practice. Nevertheless, the abdominal spasms of children seem to me well worthy of our attention. Indeed, there is such gradation, such variety and extent, between the minimum and maximum of pain—such frequency of complications with elements both material and purely nervous—such difficulty in appreciating what is due to mere predisposition and nervous derangement, and what to occasional local causes whose usual seat is in the bowels, that the survey of the subject, clear though we fain would make it, is not exempt from obstacles, and its accomplishment is a very difficult task.

“I am almost convinced, that of every hundred children at the breast, from fifteen to twenty are more or less subject to these spasms, and consequently cause disturbance and affliction to their mothers, or to those in charge of them. Yet, as we very often find that these affections continue their attacks for a long time, and then pass away without danger, and without the use of remedies, they are consequently apt to be neglected; or it happens that an abdominal inflammation is mistaken for a nervous pain, and by such a mistake the life of a child is often sacrificed.

“Our attention is also drawn to this *neurosis* by the dominion exercised by it over so long a period of the most tender age. While

other forms of nervous disorder are more or less confined to a certain short period of childhood,—for instance, trismus to the first few days after birth, spasmus laryngeus to the period between the fourth and eighth month, eclampsia by preference to the early periods of dentition,—we observe the abdominal spasms sometimes to begin with the first day of life, and to continue in fits more or less frequent and prolonged till about the end of the first year,—sometimes, though rarely, even till the eighteenth month.

“Children affected with these nervous pains are observed to cry, often violently, and at the same time to struggle with their hands and feet. The breast does not appease them for any length of time; and when they take it, their suckling is frequently interrupted.

“*Symptoms.*—When the abdominal spasm attains its highest degree of violence, the infant, if lying on its back, and without clothes to hamper its movements, presents the following symptoms:—Continual and very violent crying; increased redness of the skin; lividity, or redness of the face; eyes forcibly shut; cheeks puffed out; thighs drawn up to the abdomen; forearms flexed upon the arms; hands strongly closed and pushed into the mouth. The pulse beats from 80 to 140, but at this early age affords no trustworthy, diagnostic indication. The crying consists of prolonged and very violent screams, alternating with efforts of inspiration (“reprises”), which are deep, more or less short, not sonorous, and consequently free. From this I infer, that the spasm implicates neither the lungs, the larynx, nor the glottis; and this observation is important, for these spasms are not dangerous while the respiratory apparatus remains unaffected.

“*Terminations.*—If, on the other hand, the child’s cries are of an opposite character—*i. e.*, if the expirations or screams are short and faint, while the back-draughts or inspirations are prolonged, forcible and sonorous, then there is danger; for in this case the spasm of the abdomen has extended to the larynx and glottis, and by obstructing the air-passages, it sometimes causes suffocation. This affection is, in fact, the spasmodic asthma of Kopp, which consists in spasmodic constriction of the larynx.

“I have in some rare cases observed the transition from abdominal to laryngeal spasm in children under four months old; but in almost all the instances in which I have witnessed it, the *neurosis* did not attack the larynx alone, but soon manifested its influence elsewhere, by convulsive movements of the eyes and of the muscles of the face; and death by tetanus, or by general convulsions (eclampsia), commonly supervened. This fatal termination is most frequent in infants from two to eight weeks old, and of delicate constitution.

“Sometimes the abdominal spasm passes at once into eclampsia or into tetanus, without the intermediate step of laryngeal spasm. I repeat, however, that these fatal transitions are in general observed only in infants of very tender age and delicate constitution, or at the commencement of dentition.

“*Causes.*—The frequency of the abdominal spasm is most considerable between the second and fifth month, after which it dimin-

ishes, so that of a hundred infants, probably not more than five suffer from this cause after they have completed the ninth month of their age. The cause of these proportions seems in great part due to the multiplication of sources of faulty nutrition about the second month of infant life; for about this period many women commence to give to their children, for the purpose of fattening them, as they say, different kinds of pultaceous food, compositions of farinaceous articles with milk, cakes, &c.; digestion is thereby deranged, acidity and gas generated in the alimentary canal, and the irritation of the intestinal nerves thus induced provokes the spasms. If the child survives these derangements of the digestive system, which are sometimes very serious and continuous, and associated with vomiting and diarrhœa, then about the ninth or twelfth month, when he has already acquired some strength, in spite of the pernicious influences to which he has been subjected, the abdominal spasms become rare, or totally cease.

“Let us inquire more narrowly into the internal and external causes of these spasms. There can be no doubt that the predisposition to abdominal spasm is in the first nine months of life very strong and very general. If there be an additional hereditary special susceptibility derived from a very nervous mother, this will constitute the most powerful of *internal* causes. Among external and occasional causes, we may enumerate violent passions, and in particular, fits of anger, and other influences which may, during the period of lactation, derange the wholesome quality of the milk, different errors in diet, and consequent disordered state of the digestion and of the excretions. Exposure to cold may, in my opinion, induce rheumatism or inflammation, but not abdominal spasm. What I wish to insist upon here is, that the very frequency of this affection is sufficient to show a general predisposition to it on the part of infants of tender age—a predisposition so strong, that we very frequently witness spasmodic attacks which we cannot trace to any appreciable external causes. It is therefore the extreme irritability of the abdominal portion of the spinal system of nerves at the early period of life, which I believe to be the chief cause of the affection in question. How often have I observed fits of abdominal spasm in very young infants whose digestive functions seemed normal; and on the other hand, in riper years, how frequently is a deranged state of digestion observed without the slightest spasm! Why, in fact, should spasm be rare after the eighteenth month, or in children of two or three years of age, when it is certainly out of all proportion rarer than deranged digestion is? And why should deranged digestion almost never induce these spasms in adults? After the eighteenth month, if there is gastric derangement, the pain is in general null or very transient,—diarrhœa or vomiting is soon excited and gives relief,—and proper regulation of the diet, if the affection be not rheumatic, soon effects a cure. But in young infants, on the contrary, in spite of evacuations, and in spite of the most severely restricted diet, we frequently see these *neuroses* persist for several months.

“*Pathology*.—The pathological examination of a considerable num-

ber of infants, who during their life suffered from abdominal spasm, but whose death was caused by very different diseases, has satisfied me that abdominal spasm may persist for a considerable period, without occasioning alteration in the tissues of the alimentary canal, or in the spinal and splanchnic nerves.

"Necroscopic examinations have also demonstrated that abdominal spasm may develop itself in infants suffering from any chronic affection, not even excepting chronic inflammation, more or less extensive, of the mucous or serous membranes of the intestinal canal. *But during the course of an acute febrile or inflammatory attack the abdominal spasms are suspended.*

"I shall next endeavour to state the results of the dissections which I have conducted, arranging them as far as possible in accurate numerical proportions. Of infants, aged from one week to two years, who during life had suffered in a very marked degree from abdominal spasms, $\frac{1}{10}$ ths died of eclampsia, without other disease; $\frac{3}{10}$ ths, of chronic inflammation of abdominal viscera; $\frac{2}{10}$ ths, of scrofula in some form, or of diseases induced by scrofula; $\frac{1}{10}$ ths, of acute typhoid, or inflammatory diseases; $\frac{1}{10}$ ths, of acute hydrocephalus; $\frac{2}{10}$ ths, of different chronic affections.

"The nature of the abdominal spasm may be easily judged of from what has now been stated. There exists in all cases of this affection an extreme irritability of the abdomino-spinal system; and in the majority some of the external accessory causes above alluded to are superadded. I have purposely tried, at some length, to demonstrate the predominance of the nervous element in this disease, because my remarks may convey a hint to the practitioner not to treat cases of spasms complicated with gastric derangement exclusively with remedies directed against the condition of the stomach. It may, perhaps, be asked whether the affection in question is not, very frequently at least, rheumatic—a rheumatism of the abdomino-spinal nerves? When treating of the diagnosis, I shall have occasion to state my views on this head.

"The local manifestation of the disease consists in a spasmodic muscular contraction of a certain portion of the stomach, of the intestines, or of the urinary bladder—or, to speak more precisely, of its sphincter. My opinion is, that what is commonly called "pain in the belly," only differs in degree from the disease just described. Infants can give no description of the nature of the pains which afflict them; still I am strongly inclined to believe that neuroses of the sensitive system—abdominal neuralgia—must in early life be very rare. In fact, the pains suffered by infants are almost always connected with constriction of the alimentary canal, or of the bladder, as is proved by the uniform retention of the evacuations observed when the pains are urgent.

"There are, then, abdominal spasms purely nervous and complicated,—and of complications the most usual are vomiting, diarrhoea, constipation, acidity, eructations, and flatulence; there are, besides, cases complicated with some chronic inflammatory affection of the abdominal viscera. The transition into, or complication with, an

acute inflammation of the bowels or bladder, must, according to my observation, be exceedingly rare.

"*Diagnosis.*—The spasms seldom affect a very extensive portion of the abdominal viscera; in the majority of instances they localise themselves in a more or less circumscribed portion of one or other of the following organs,—viz., the stomach, the intestines, and the urinary bladder. It is not very easy to recognise and diagnose any one of these three forms of disease; for the above-described cries and movements of the child are often pretty much the same in all. The differential diagnosis is not alluded to by authors; for the subject of abdominal spasm has not acquired in medical literature the place which it deserves. I flatter myself that, in the remarks which I am about to make, some useful practical information will be conveyed.

"*I. Spasm of the Stomach.*—Violent crying as described. The infant sometimes moves, as if it wished to raise itself,—i. e., it bends the head and breast forward towards the abdomen. The violence of the symptoms usually continues pretty uniform till the complete cessation of the paroxysm. There then occur eructations, sometimes exhaling an acid odour; there may even be vomiting of the mucus secreted in the empty stomach. It is not rare to see children pass at once from a paroxysm of pain and tears into a state in which their expression and laughter indicate perfect ease. The best marked fits of this description do not in general last longer than from ten to twenty minutes; and the intervals between the fits are longer and more perfect than in the other varieties of the affection.

"*II. Spasm of the Intestines.*—Symptoms, common to all varieties, described less intense; some remissions during the paroxysms; legs strongly drawn up to the belly; paroxysms longer, and intervals shorter; fits terminating gradually, and very frequently succeeded by discharge of flatus from the bowels, or by diarrhœa. I have met with many cases of this description, in which the paroxysm lasted for several hours, with remissions more or less distinct, and in which the infant hardly enjoyed half an hour's rest before a fresh attack supervened.

"*III. Spasm of the Bladder.*—The violence of the symptoms, the form of the paroxysm, its duration and termination, resemble the description given of spasm of the stomach; but the infant moves the pelvis much, and sometimes seems to wish to elevate it, by fixing the feet and upper part of the trunk, and then making muscular efforts. When the fit is over the urine begins to flow, at first drop by drop, and afterwards more freely. The child is then quite tranquil and happy. The urine in these cases very often leaves reddish-yellow stains upon linen,—a sign of an excess of acid in it. Paroxysms of this kind seldom last above ten minutes. The intervals are usually perfect, and the fits seldom occur oftener than from five to eight times in a day. Before the second month it is a rare disease.

"These three varieties are, however, not constantly confined to the localities in which they are originally seated. In particular, when the sole cause of spasm consists in the child's extreme nervous susceptibility, without notable derangement of the digestive or urinary appa-

ratus, one variety is frequently seen to pass into another, *i. e.*, spasm may pass from the bladder to the stomach, or *vice versa*. What we formerly said of the transition of abdominal to laryngeal spasm applies to the three varieties now under consideration. I have had occasion to treat some cases of vesical spasm, which passed first into spasm of the stomach, then of the larynx. The nature of these affections being identical, and consisting of derangement of the abdominal spinal nerves, it is easy to account for such metastases.

"The physician may, with attention, attain the practical knowledge necessary for distinguishing, in all cases, the spasm of the bladder from the other varieties. But in many instances it is impossible to determine whether the stomach or the intestine is the seat of spasm. This uncertainty, or it may be fault, of diagnosis, is fortunately of little consequence as regards the treatment.

"In distinguishing spasm from *gastro-enteritis*, we must attend to the following points:—In *acute* inflammation of any portion of the alimentary canal, there is fever of a continued character, more or less distinct; there is either vomiting of everything which the child eats and drinks, diarrhoea, or obstinate constipation. Continual plaintive cries without violent screaming—constant tenderness on pressure applied to the abdomen—a much lower temperature of the extremities than of the trunk—are likewise symptoms of acute *gastro-enteritis*. It is a rare affection.

"In *chronic* *gastro-enteritis*, the fever is not of the continued type, but there are almost every day perceptible alterations in the pulse, and degree of temperature of the extremities. Pain is not a prominent symptom of this affection. Mucous diarrhoea is a very constant and obstinate symptom. There is progressive emaciation. The child is almost constantly very peevish. We have already alluded to the complication of spasms with chronic forms of abdominal inflammation. In these cases there exists a continuous state of calm (but not of freedom from suffering), interrupted from time to time with fits of violent spasmodic pain.

"*Peritonitis*, whether acute or chronic, is always accompanied with tension and extreme tenderness of the abdominal parietes. Diarrhoea is almost always present. The other symptoms are identical with those of the corresponding forms of *gastro-enteritis*.

"*Cystitis* is a very rare affection during infancy, and can be easily distinguished from spasm, by the continuous character of the symptoms, some of which are common to *gastro-enteritis*. The urine is at first of a dark colour, more or less red or bloody, and at a later stage of the disease becomes loaded with mucous or purulent discharges. Large blisters applied to the abdomen of infants easily produce irritation of the bladder, passing sometimes into inflammation. Acute cystitis I have never observed before the fifth month, and the total number of cases which I have met with in children in the first two years of life does not exceed ten. Pains connected with *calculus* are recognised by the use of the sound.

"The differential diagnosis of *rheumatism*, it is much more difficult to define. Rheumatism of the alimentary tube, or of the peritoneum,

may commence with or pass into a train of true inflammatory symptoms; but it may be confined to the nervous system, and furnish no evidence, symptomatic or anatomical, of the phlogistic state. What is, then, the difference between a simple spasmodic neurosis and a rheumatismal neuralgia? It would be necessary to enter into tedious and minute details in order to express my views on this subject; and these views are far from satisfactory in a scientific and practical point of view. There is, in fact, such a similarity between rheumatismal neuralgia—that induced by the action of cold air upon the warm and transpiring skin, and so much influenced by atmospheric and thermo-electric changes—and the primitive nervous spasms, that it must often be difficult or impossible to distinguish between the two forms of disease in an infant of tender age. Diarrhœa, almost always very serous and profuse, is one of the most constant characters of abdominal rheumatism. There is also a degree of vascular excitement, which the nature of the dejections shows not to be symptomatic of inflammation; still, infants, the subjects of abdominal rheumatism, have for the most part accessions of slight fever. The lower the degree of the rheumatic affection, the more difficult does it become to distinguish it from spasms, and the less serious is a mistaken diagnosis in regard to the treatment; for the application of dry heat is indicated in both diseases. The same may be said of the use of opium; and it is only the effect of blisters, which is more unequivocally beneficial in rheumatic than in spasmodic disease.

• “*Prognosis.*—The prognosis is favorable if the child is strong and of good constitution, and if the spasms have been preceded, and are still accompanied, by disorder of the digestive system. If the spasms have commenced with the first few days of life without appreciable cause,—if the mother is very nervous, or herself a sufferer from spasms,—if the child is of very delicate appearance, the prognosis is more doubtful. If there are very severe and obstinate gastric complications, these, and not the spasms, are the source of danger. Regard must also be had to the period of dentition, and a cautious opinion given when the teething is irregular, for in such circumstances I have often seen the spasms pass into general convulsions, and occasion death. In general, if the abdominal spasms be strongly marked, with intervals more or less regular and perfect, immediate cure is rather improbable; but it is very likely that the attacks, however obstinate, will cease between the ninth and twelfth month, if no unfavorable circumstance arise. As to the danger of death, there are comparatively few cases of this disease which, if uncomplicated with some other dangerous condition, terminate fatally by passing into general convulsions.

• “*Prophylaxis.*—The best prophylactic means against abdominal spasm, are those attentions to physical well-being best calculated to promote the regular development of the organism and vital forces, and especially a healthy digestion. We cannot enter into details on this subject; we shall only allude to the principal points which it includes.

• “If after birth the alvine evacuations are scanty, and if, after the first twenty-four hours, they retain the dark colour of meconium, half

a teaspoonful of castor-oil, mixed with sweet almond oil, should be administered, and the dose repeated every three hours, till the stools acquire the normal yellow colour. I never prescribe for newly-born infants syrup of rhubarb or of manna; very sweet articles are not good for the stomach, and these syrups, being difficult of digestion, may engender spasms by passing into acid fermentation.

"If the mother suffers from spasms or convulsions, (even if she is of apparently robust constitution, and during pregnancy has not been so affected,) she ought to intrust her child to a healthy nurse.

"The examination of a nurse's milk, whether physical or microscopical, in spite of the interesting investigations commenced by Donné, and carried on by several other distinguished physicians, does not yet supply us with means of safely deciding either upon the quality of milk in general, or upon its adaptation as nourishment for this or that child. The proportion of granular bodies is no sure index to the wholesome nutritious property of the milk, nor are the other microscopic elements more trustworthy guides.

"The physician is often asked, if the nurse should be changed, because she has every month a more or less prolonged menstrual period? In such cases, it is our duty to ascertain if, during these periods, she complains of any other derangement,—if, while the discharge proceeds, her strength or the quantity of her milk are diminished,—if the appetite or digestion are affected,—if she suffers from pains in the lower part of the abdomen. If nothing of the sort is discovered, and if, besides, the child seems thriving, our advice is, to continue the same nurse; and I do not recollect having witnessed any unpleasant consequence from the adoption of such advice.

"The mode of suckling ought to be regular,—at first every second or third hour,—and before the third month no nourishment should be given except the breast milk, which is sufficient in general. But should the quantity of the milk be insufficient, or if it be impossible to give the child the breast, I know of no better substitute than fresh cow's milk boiled and diluted with a very weak hardily-coloured infusion of star-anise (*Illicium Anisatum*).

"I must here allude to a very common fault of nurses. In general, if the infant cries, they give it the breast; and if the child be suffering from strong and frequent abdominal spasms, they thus overload its stomach with an extra quantity of milk, which it cannot digest, and hence induce gastric derangement and flatulence, which may from day to day increase its sufferings. This habit may become more mischievous, and even occasion an incalculable amount of evil, if the mothers think to appease the sufferings of their children by giving them more substantial nourishment. This is too frequently the case.

"Among prophylactic measures, we must include the temperature of the chamber, and of the baths; but on this head nothing can be said beyond what is well known.

"Some mothers, too solicitous in their cares for their children, in order to ensure them tranquil sleep, make the chamber quite dark, and avoid the production even of the sounds familiar in domestic life. This excessive care is to be blamed, for it exceedingly augments

nervous susceptibility and weakness. Such infants, if disturbed by the slightest noise when at rest, experience a sort of nervous shock, and it is in subjects of this kind that the predisposition to spasm is most easily developed.

Treatment.—The treatment of abdominal spasms is composed in part of what has been already indicated in treating of the external and internal causes of the disease, and in part of the prophylactic means just enumerated. The first point in treatment naturally consists in hygienic measures adapted to remove the causes which concur in the development of spasm; the second point is directed against the complications; thirdly, we must direct certain remedies against the spasm itself.

“The removal of exciting causes has been already considered under the head of prophylaxis. In general, the greatest difficulty is, in obstinate cases, to estimate aright what is due to the purely nervous susceptibility, and what to the material element or different complications. The more sudden and strong the fits of cramp, the more decided the remissions, the more satisfactory the general health, the more evident is the nervous character of the complaint. We need not waste words to prove this. Cases, which have their origin purely in the system of animal life, are very rare. Such mathematical simplicity is not to be expected in a complicated living organism. The skill of the practitioner consists in duly appreciating the value of the material element in complicated cases.

“I have already mentioned several domestic remedies very useful in calming abdominal spasm, and to these we here again refer. To establish the indications for certain remedies, I propose to take the gastric and intestinal forms of spasm into consideration together, for the affinity between these two forms is very strong. Of the medication proper in the vesical spasm I shall treat separately.

“In the first place, if there be gastric derangement, (which, in connection with spasm, merits our attention, and which does not yield to dietetic means,) before attacking the spasm we naturally prescribe an emetic, a purgative, or remedies to improve the digestion. But it is right to be chary of the use of these remedies in the case of an infant delicate in constitution and of tender age. Neither the white tongue, nor the inodorous eructations of an infant at the breast, are indications for the administration of an emetic. Eructations are, during infancy, very frequent, but when inodorous, and unaccompanied with symptoms of disordered digestion, are of no great significance.

“Most infants at the breast, even the most healthy, have a white tongue, and are subject to eructation in a slight degree. But in young infants, if there be derangement of the stomach or liver—circumstances which may demand the use of an emetic—there is *always a yellowish fur on the tongue, the eructations are of a disagreeable odour*, and the younger the child, the more surely is there fever, indicated by quick pulse and hot skin. If there be biliary derangement, it is recognised by a slight yellowish tinge of the conjunctiva of the eyelids, or even of the globe of the eye.

• “*Emetics*.—During the first week of life, if there is indication for emesis, it is best provoked by tickling the palate with a feather after giving the child a drink of tepid water. It is better to continue these attempts, by which forcible and repeated acts of vomiting can be excited, than to give an emetic to a child of a week or two old.

“I have seen the administration of one-quarter grain of tartar emetic in two ounces of water cause the death of a child two weeks old, by inducing intractable hyperemesis. But children of several weeks or months old sometimes die when an emetic is administered which is too strong or ill-timed. In the hospital at Pesth I had several cases of death from profuse diarrhoea, provoked by emetic tartar, viz., in children who, in spite of the administration of the emetic, did not vomit, but had twenty or thirty stools in rapid succession; the purging could not be arrested, and caused in a few hours death by collapse.

“At the age of two to four months, vomiting, if indicated, may be induced with safety by the use of medicine, the dose being modified to suit individual peculiarities.

“If the child is weak, delicate, or of nervous habit, the emetic should not be given, and certainly never repeated. In opposite circumstances, the emetic is one of the most important of remedies, and may be repeated, if necessary.

• “*Purgatives*.—As to the purgative, the indication is easily obtained. In the first month I usually employ a lavement of infusion of chamomile, with a little oil and sugar, or give castor oil by the mouth: After the first month we may give an infusion of prepared senna leaves,—and may prescribe it as follows:—R. Inf. Sennæ, ʒj; Tart. Potass et Sodæ, ʒj; vel. Syrup, Mannæ, ʒij. M. Capt. cochl. j, min. pro dose.

“But we may here repeat the caution already given against the use of syrups in these diseases. It is to be wished, for the sake of children, that the redundancy of these medicines in our pharmacology should be somewhat abridged.

• “*Mercurials*.—The use of mercury as a purgative in infantile diseases is still too fashionable, particularly in Germany and England, and demands some notice here. The therapeutical theory on which the virtues of this favorite remedy rests is so accommodating, that there is hardly a disease of childhood in which it is not ‘distinctly indicated.’ Thus it is used in abdominal spasms, not only as a ‘purgative,’ but as the ‘most powerful of alteratives.’ In some way or other, it is lavishly given in almost all obstinate cases. The cause of this abuse resides, I think, in two circumstances: in the obscurity of its action, and in the difficulty of salivating an infant even by its long-continued use. For my own share, except in syphilis, I can conceive no indications for calomel, except to act slowly on the liver, in moderate dose, or to procure abundant bilious motions, when given in larger quantities. If such indications are not present, its use as a purgative is to be condemned; and still more reprehensible is the plan of giving it in small doses, for weeks together, as an alterative; for in my experience of the consecutive effects of such treatment, I have become

satisfied that no remedy is followed by such pernicious influence upon the digestion, the blood, and the bones.

"*Tonics, &c.*—The indication for regulating and strengthening the digestive functions is a very natural one, when, besides the spasms, we find disorder of the stomach; but, in infants of very tender age the indication is with difficulty fulfilled by the use of remedies. I shall here allude only to three very commonly employed,—viz., powder or tincture of rhubarb, carbonate of magnesia or calcined magnesia, and powdered fennel seeds.

"Rhubarb in powder is not a good remedy during the first few weeks after birth. At this age powders are, for the most part, difficult of solution, and even when given in very small doses, are not well tolerated by the stomach. Infants cannot express their dislikes, but if attention be paid to the child after a dose has been administered, what I have just stated will often be obvious. Even at the age of two or three months, infants, by vomiting, and an unmistakable expression of disgust, show the nausea excited by the ingestion of powders. If in any case it is thought expedient to prescribe rhubarb for a very young infant, as a tonic for the stomach or bowels, the dose should be from one sixth to at most one half of a grain twice or thrice a day. The tincture is a far more suitable form. Two or four drops may be given twice or thrice daily, in a warm infusion of melissa or of chamomile. Three grains of the powder, or fifteen drops of the tincture, if given in a single dose, will almost always cause pains in the bowels, even if the infant is not usually subject to them. But it is important to state, that, although I have made thousands of experiments with rhubarb, I have never seen it produce immediate and unequivocal effects upon the digestion in infant life.

"I have no more favorable opinion of *magnesia*. It is usually prescribed when there are symptoms of acidity at stomach; and as this complication often co-exists with spasms, practitioners give *magnesia* very frequently in such cases. Yet my observation has not shown the remedy to be so efficacious as is commonly believed. It is the proper changes in the mode of nurture which concur in effecting the cure, and often suffice without the remedy. I am convinced that the doses commonly given are too large. The stomach of an infant of two or three weeks may show more or less distinct symptoms of indigestion after doses of three or four grains of calcined magnesia. My experience teaches, that the medium dose for an infant aged two to four weeks is half a grain, repeated three or four times a day; from the age of two to four months, the dose may be two to four grains.

"Powder of *fennel seeds* is also a favorite remedy in abdominal affections. It is given to cause the expulsion of eructations and flatulence. I do not advise its use till the third or fourth week, and even then the dose should be small. The indication will be better fulfilled by giving to the little sufferer a spoonful of a warm infusion of chamomile and fennel flowers mixed, or one or two drops of sp. melissæ for a dose. At the age of two months and upwards, the dose of fennel may be from a half to one grain.

"All that we have said of these three remedies must not be understood to apply to infants of four months and upwards; for at this age the stomach is able to bear larger doses, and hence the better effects observed. But if the abdominal spasms are very obstinate, and the infant of delicate frame, we must not, even though its age should exceed four months, insist too long upon an exclusively *antigastric* treatment; and least of all must we use evacuates.

"*Narcotics*.—If the spasms are such as have been already described, it is seldom that we can neglect to use some nervous calmative. It is unnecessary to enumerate a list of well-known remedies. The cherry-laurel water is one of the most generally employed; but for my own share, although I have for several years prescribed it, I have never witnessed its prompt and decided effects either in cases of abdominal spasms or of any other pain. For the progress of medicine, nothing is more essential than to discard all remedies of feeble or uncertain virtue.

"Opium is the only direct nervous calmative, which is almost always sure in its effects. There are, however, writers, particularly in Germany, who would totally proscribe its use in infantile diseases, because it is dangerous. I think, however, that far more mischief is done every day by the use of inefficient remedies, such as syrups, powders, and indigestible decoctions, than by the employment of drugs which, in small dose, have a powerful action. This is not the place for details on this subject. I must, however, mention emulsions of almond oil and of gum-arabic, with which many practitioners think to calm abdominal spasms, and which they administer to children even a few weeks old, in doses of two to three ounces a day. I have myself abandoned all such formulæ, satisfied that the quality and quantity of these remedies are both capable of disturbing the digestion of the breast-milk.

"We must not be intimidated by the possible danger of opium. Its action is sure and salutary, and it is not difficult to learn the rules for its administration. I have given it to thousands of infants without ever having had occasion to regret my practice; and without opium I would not undertake the treatment of children's diseases. I shall, then, give a brief résumé of my experience of the drug in the Children's Hospital.

"The proportionate dose of opium in very early life is nearly as follows:—To the newly-born babe till it is a week old, I have prescribed it very rarely; from the second to the third week, the medium dose is $\frac{1}{120}$ th of a grain; from three to six weeks, $\frac{1}{100}$ th; from six to eight weeks, $\frac{1}{80}$ th; from two to four months, $\frac{1}{60}$ th of a grain of the powder. Of the single tincture of opium fifteen drops are equivalent to one grain of the powder; and Dover's powder in ten grains contains one of opium and one of ipecacuanha.

"The action of a proper dose of opium is manifested half an hour after its exhibition, and lasts from three to six hours. If narcotism is induced, it will be serious in proportion to the tender age of the patient. I have seen a single dose of $\frac{1}{4}$ gr. of Dover's powder (equal to $\frac{1}{30}$ th gr. of opium), given to an infant of five weeks, cause nar-

cotism, which lasted for thirty-six hours. The sleep during this period was continuous, profound, interrupted sometimes by startings, as if from fear. The case, however, terminated favorably. I have seen two cases in which the narcotism caused death. A moderate degree of narcotic action (lasting from six to ten hours) has never, in my experience seemed dangerous, when the use of opium has been distinctly indicated.

"The most suitable remedies for the narcotism consist in the application of cold water to the forehead, and of sinapisms to the nucha, a gentle purgative, and, in very obstinate cases, one or two small leeches to the temples, and ten to twenty drops of infusion of coffee made in the ordinary way, and given every hour. It is important not to give the above-mentioned doses of opium to infants at shorter intervals than from four to six hours, in order that their effects may be duly watched. While opium is being used, care must be taken lest an obstructed state of the bowels should be induced.

"The most decided counter-indications are as follows:—If the pain have been long continuous, and accompanied with fever; if there be signs of inflammation, much heat of the head, with somnolence, and alvine obstruction.

"In no form of spasm is the opium so efficacious as in the *intestinal*. It is not a radical cure; but calms pain, by resolving the spasmodic constriction of the intestinal tube which prevent the escape of its irritating gaseous contents, and thus assists the radical cure. On comparison, I have found that the intestinal pains have been more frequently relieved by opium than the gastric. These are often dissipated by a drop of *sp. melissæ*.

"In cases of abdominal spasm, after the first month of life, I often, with advantage, prescribe the following powders:—*R. Pulv. Opii*, gr. $\frac{1}{2}$; *Magnes. Calcinat.*, gr. viij; *Pulv. Sem. Fœniculi*, gr. iv; *Sacchari Albi*, gr. xxiv. *M. Div. in chart. xvi, quarum j, 4tâ q. q. b. sumend.* As to the salts of morphia, there is difficulty in portioning out the exact dose,—*e. g.*, $\frac{1}{100}$ th of a grain for a child of a month old.

"Aromatised warm baths sometimes alleviate the pains.

ART. 114.—*Treatment of Croup by Warm Vapour and Emetics.*

By W. BUDD, M.D., Bristol.

(*Medical Times and Gazette*, June 19.)

[The subjoined abstract is taken from a clinical lecture upon six cases of croup. The author first directed attention to the general pathological phenomena; after which he remarked as follows on the microscopic appearances of the exudation:]

"The histological and other characters of the exudation itself are very important. If you examine a portion of the false membrane under the microscope, you will see that it is essentially made up of cells or corpuscles lying in a granular blastema. These cells bear, as you will remark, a very close resemblance to the common pus-corpuscle. Pus-corpuscles are, in fact, as I have endeavoured to show

you, at greater length elsewhere, none other than these same cells, dead,—most probably in a higher state of oxidation, and otherwise chemically altered. Here and there, however, a stray cell is seen, marking by its fusiform shape a tendency to rudimentary but abortive development.

“The most important character of the blastema in which the corpuscles are imbedded, is the large number of fat-granules it contains. The presence of this large quantity of fat in the morbid product, besides presenting another point in common with pus, is probably connected in some way with its low capacity for organisation.

“These characteristics are constant in the false membrane of croup. They are also occasionally met with in inflammatory exudations from other surfaces; especially in such as occur under direct exposure to air, or as the effect of malignant poisons,—or, in weak and cachectic persons, whatever the cause of the inflammation. Such exudations have, in fact received the epithet *croupal*, in testimony of this likeness to the croupal type.

“As a group, they are especially characterised by a proneness to degenerate into pus, and other kindred fluid products, with a tendency to the development of corrosive, and, in some cases, of still more noxious qualities.

“This close affinity of the exudation to pus is, in croup, a character of great moment; since, in virtue of it, a product which was, at first, solid and adherent, and firmly choking up the air channel, may, by a slight change of conditions, give place to a fluid secretion, offering no serious mechanical obstacle to the ingress of air, or to its own expulsion. In cases of recovery, some such secretion always supersedes the croupal, and is, in fact, the chief instrument of that separation from the surface beneath, which prepares the way for its ejection.

“The condition of the mucous membrane itself varies much in different cases, and in different stages of the disease. As a general rule, it presents less vascular redness than is seen in other forms of inflammation of the same degree. Of this, two different explanations have been offered. One, that the gorged capillaries are relieved from their distension by the outpouring of the effused lymph; the other, that they are choked up with white products of the same nature as the exudation itself. Which of these explanations is the true one, or whether either adequately represents the fact, I will not pretend to decide.

“Besides being inflamed, the larynx and under surface of the epiglottis are generally found fretted and ulcerated, and a similar but still more extensive destruction of substance often affects the tonsils also. These alterations are, in great part, the result of the corrosive action of the morbid product. The material of the false membrane is no sooner poured out than it becomes the seat of catalytic changes, which being communicated to the living membrane, (whose power of resistance is lowered by disease, and whose elements are already prone to dissolution,) lead to its disintegration. Direct exposure to air, the presence of sufficient moisture, and the heat of the underlying, diseased surface, all concur to give activity to these chemical changes in the morbid product.”

[Having disposed of the local changes in croup, the author next alludes to the mode of death, which is by apnœa, or the privation of oxygen; he also speaks at length on the pathology of the disease, concluding with the following remarks on the treatment, to which he accords the preference:]

"This, it is scarcely necessary to say, embraces two principles and fundamental objects;—the first, to promote the separation and expulsion of such false membrane as may be already formed,—the second, to prevent the formation of new false membrane, by means calculated to moderate or to alter the character of the inflammation to which the morbid product owes its origin.

"Now, long before adopting the precise method of treatment applied to the cases I shall presently have to relate, many considerations had led me to suppose, (in common, I doubt not, with many others,) that the most direct as well as most effectual means of securing both objects would probably be found in the suitable modification of the atmosphere breathed by the patient.

"On the other hand, it had appeared to me equally clear, on the same grounds, that the great obstacle to the cure of the local disease of the windpipe, is the direct chemical action of the double current of air passing over the inflamed surface.

"There is, indeed, much reason to believe, that the effect of air, and specially of the oxygen it contains, in keeping up inflammation, (itself a process of rapid oxidation,) in already diseased parts, as well as in exciting inflammation in parts whose power of resistance to common chemical agency is, through some cause, lowered, is only beginning to be appreciated.

"Yet there would seem to be little doubt, not only that this agency of the air is most large and influential, but that a knowledge of it furnishes a principle fertile in applications as well to the cure as to the prevention of disease.

"The reality of such an agency as that here assumed, may be made evident in many ways.

"In the first place, the consuming and destructive power of the active principle of the air we breathe on living tissue, generally, is universally known. Every day as much of the substance of the living body as is represented by the flesh, and other nitrogenous constituents, we appropriate in the shape of food, is reduced from the living state to that of dead chemical compounds by this consuming agent.

"Here the oxygen of the air is, it is true, in solution in the blood, and in dynamic and physiological relation with the tissue with which it unites, but in the gaseous form also, and on the surface of the body,—acting not physiologically now, but pathologically,—its effects under certain conditions are scarcely less marked.

"Thus, for instance, to certain forms of serous membrane, especially if to its own power the depressing effect of cold be added, air is most deadly.

"Admitted into the pleura, the peritoneum, or arachnoid, as I once saw in a person in whom the trephine was used for the removal of a piece of skull, which was supposed, through irregularity of form, to be the cause of inveterate epilepsy in the patient,) cold air often

excites the most intense inflammation,—a result which there is no reason to doubt is mainly due to the chemical action of the oxygen it contains on the delicate membrane which lines these cavities.

“It may, indeed, be objected, that this offers no analogy to the case before us, since the epithelium, which covers the air-tubes, is, not only like that of the surface of the body generally, proof against any injurious action from the air, but is actually destined to protect the underlying tissues from its corroding influence.

“This is undeniably true. But, on the other hand, the susceptibility which this structure does not possess by nature, it may readily, and from various causes, acquire, and to almost as high a degree as that of the serous membranes themselves.

“In the state of health it remains unharmed; but let its natural power of resistance be weakened, either along with that of the rest of the body, as in general debility, however occasioned, or through some defect in its own nutrition, and cold air becomes almost as injurious to it as to the peritoneum or pleura.

“I have already often had occasion to show you that the bronchitis of the weak, of the aged, of the emphysematous, is, for the most part, the result of the direct chemical action of the air, on a mucous membrane whose power of resistance is lowered, either by general debility or by some defect, permanent or transient, in its own nutrition; or, what is more common still, by both. Excluding specific and epidemic influences, the records of bronchitis in the Reports of the Registrar-General, may be read as an illustration, on the broad scale, of this position.

“The power of air, under certain conditions, to set up the most intense inflammation of the mucous membrane of the air-tubes was very distinctly shown in a case which fell under my notice some years ago.

“It was a case in which it became necessary to perform tracheotomy, to rescue a boy from impending suffocation, produced by rapid swelling in the structures about the larynx, caused by his having accidentally swallowed boiling water. The difficulty of breathing had existed but a short time; there was little or no secondary congestion of the lung; the boy was previously in good health, and the operation was skilfully performed.

“Barring the intervention of some new element, therefore, there appeared to be no assignable cause for the particular mischief which followed. But the air which the boy breathed, instead of passing through a long and tortuous channel, and becoming warmed on the way, as in the state of nature, entered now by a short and direct cut into the bronchi. At the same time, the weather was cold; and, as no sufficient precautions were taken to give the air of the apartment a suitable temperature, the result was the most intense and diffuse bronchitis, which wellnigh marred the success of the operation.

“That common air may have a very damaging effect on this mucous tract, is, therefore, a fact beyond dispute.

“It would be easy to extend much further, if need were, the proof of its operation.

“But perhaps, after all, it was scarcely necessary to illustrate at

such length a position which you might have found no difficulty in conceding at once.

"The fact itself, however otherwise viewed or described, is not only a part of familiar knowledge, but precautions founded on the perception of it are so universal as to have the force and character of a common instinct.

"If, then, the air we breathe have power to set up inflammation on a surface not before diseased, how much more damaging is it likely to be to a surface already inflamed.

"The inflamed trachea in croup is sheathed, it is true, from the direct influence of this element by the intervening false membrane.

"This is seldom, however, the case throughout the disease. For, besides that in its early stage there is always a time when false membrane is not yet formed, the instances are rare in which even after its formation the larynx is not partially or completely denuded of its adventitious covering, once at least during the course of the complaint. In almost every case, if narrowly watched, it will be found that distinct flakes of false membrane are, at some time or other, coughed up with great temporary relief to the sufferer. So that it is precisely at the moment when the best hopes are excited by the occurrence of this incident, that the prejudicial action of the raw air in keeping alive the inflammation in the now bare and diseased surface steps in to disappoint them.

"As the air is more injurious the colder it is, it naturally occurred to me, that the first object in the treatment would be to raise the temperature of the air breathed by the patient to a suitable point. The second was, to saturate the air thus warmed with watery vapour. On many grounds, indeed, it seemed to me not improbable, that—whether by modifying the physical constitution of the false membrane itself—or, perchance, by promoting a more serous secretion beneath it, or in both ways at once—the moisture thus generated might specially aid in the separation and expulsion of the morbid product, and possibly also prevent its being formed anew.

"It is for more enlarged experience to say to what degree these important objects are likely to be realised by these simple means.

"The results we have as yet obtained are perhaps too few to build upon securely. Nevertheless, as far as they go, they surpass the best expectations that could have been formed of this method of treatment. If they warrant nothing more, they at least encourage to a further trial of it.

"The mode of proceeding is simple enough. The sick child is placed in a bed, closed on all sides by a double curtain. Into this bed is introduced a large earthenware pan nearly filled with all but boiling water, and into the water is plunged, from time to time, a heated brick, for the purpose of disengaging steam, care being taken to have the brick completely submerged. By this means, the atmosphere within the curtain is constantly kept at a temperature of from 75° to 80° Fahr., and surcharged with vapour. Where it is practicable, the mother is placed in the bed with the child in order to reconcile it to the strangeness of its situation. As convalescence

approached, this was on several occasions found to be a useful precaution.

"The only other measure adopted, was to give an emetic from time to time, whenever the struggle for breath seemed more than commonly urgent. Not, however, for the sake of the antiphlogistic effect of the antimony or other agent employed, but to help, by that mechanical succussion which the act of vomiting causes, and which daily experience shows to be so effectual for this end, in the expulsion of the morbid product. This is the great and paramount use of emetics in the treatment of croup, and it is one the more to be valued *since there is no substitute for it.*"

REPORTS
ON THE
PROGRESS OF THE MEDICAL SCIENCES.
July—December, 1852.

THE intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

BY DR. RADCLIFFE.

1. *Kinesitherapy*.*—Electro-Biology has already given place to *Kinesitherapy*, *Medical-gymnastics*, or *Lingism*,—so called from its originator Ling. In other words, "the last new fudge" has given place to a newer.

This Ling was a Swedish epic-poet and fencing master, who died in 1839. In his latter capacity he made the profound discovery that the health of his pupils was materially benefited by exercise; in the former, he originated the idea that this health might be made perfect and perpetual by judicious gymnastical expedients. Lingism, therefore, may be said to be a sanitary satire on inaction and idleness, just as hydropathy is on dirt and drunkenness, or homœopathy on pathological hair-splitting and draught-drenching, or electro-biology on spiritual-disbelief in matters of physiology.

What progress this new quackery will make remains to be seen. In Sweden it is flourishing under Royal patronage, and in Russia and Prussia it is said to have friends in high quarters. In this country three or four advocates have appeared in print, of whom Dr. John W. F. Blundell is one; and to whom we refer any one who is curious to master the *system* which has sprung out of the poet-fencing master's vagaries.

2. *Leucocythæmia, or White Cell Blood*.†—This is a subject of great importance, and one especially demanding attention, because, as we conceive, the *practical* conclusions in connection with it, are in many respects untenable. In one sense the subject is physiological rather than medical; but the physiology is of a sort which ought to be thoroughly known to every one concerned in the treatment of disease,

* *Medicina Mechanica, or the Theory and Practice of Active and Passive Exercises and Manipulations*, considered as a Branch of Therapeutics, and as adapted both to the Treatment and Cure of many Forms of Chronic Disease. By John W. F. Blundell, M.D., 8vo. Churchill, 1852.

† 1. *Leucocythæmia, or White Cell Blood, in Relation to the Physiology and Pathology of the Lymphatic Glandular System*. By J. H. Bennett, 8vo, Edinburgh, 1852.
2. *British and Foreign Medico-Chirurgical Review*, July, 1852.

and therefore no apology is necessary for bringing it forwards in this place.

Leucocythæmia is a morbid alteration of the blood, in which there is an extraordinary multiplication of the white or colourless corpuscles, which alteration, in many instances, is found associated with a morbid condition of the spleen, or *other* glands of the absorbent system. It was discovered almost simultaneously by Professor Bennett, of Edinburgh, and Professor Virchow of Berlin; the former having the priority so far as the date of the first publication is concerned. The latter, however, first made his discovery known to the public, and gave a name to it, for in the word *leukhæmia* we have the original of the *leucocythæmia* of the Edinburgh Professor. Still to Dr. Bennett the chief praise is undoubtedly due; and it is to his writings, and to the valuable comments upon these writings in the Medico-Chirurgical Review, that we shall refer in the subsequent remarks.

On looking over Dr. Bennett's work for the facts upon which the existence of leucocythæmia is based, we find these somewhat obscure and confused. This is especially the case during life. The *symptoms* are very vague, and the author himself admits that "he has had great difficulty in referring any of them to the mere alteration of the blood," (p. 84); still there are some which point in this direction. Thus: hæmorrhage of one kind or another, sometimes in more than one place at once, occurred in 15 out of 22 of the best observed cases—epistaxis in 6, hæmatemesis in 1, hæmorrhage by stool in 4 (of which 4, two were cases of piles), hæmoptysis in 1, flooding after delivery in 1, and bleeding from spungy gums in 1. Dropsy was present in 13 of the 22 cases—anasarca in 2, ascites in 4, and œdema of the lower extremities in 4. In many cases, also, there was unusual pallor of the surface, accompanied by a peculiar light blueness of the conjunctiva, (p. 86.) The other symptoms were very various. There was nothing conclusive in age or sex. In 11 cases there was more or less low fever; in 3, cancerous degeneration; in 5, serious disease of the lungs; in 12, exhausting diarrhœa; in 2, Bright's disease; and in all the fatal cases, extreme emaciation. Enlargement of the spleen, liver, and absorbent glands was so common as to appear to have some intimate connection with the disease of the blood; but it was not constant, and, as would appear from the Professor's own showing, not essential, for cases are given in which it existed, without the corresponding change in the blood.

The most conclusive evidence is deducible from the blood itself. It is the following:

On examining the blood during life (which is readily accomplished by extracting a drop from the finger by pricking it with a needle, and then examining it between glasses under the microscope in the ordinary way), the yellow and colourless corpuscles are at first seen rolling confusedly together, and the excess in number of the latter is at once perceived. This, however, becomes more evident after a short time, when the coloured bodies are aggregated together in rolls, and leave clear spaces between them, which are more or less crowded with colourless ones. Means are altogether wanting to enable us to determine with exactitude the relative proportion of the two kinds of corpuscles in different cases. In some the colourless corpuscles are only

slightly increased beyond their usual number. In one case they are described as five times more numerous than in health. They are also said, in particular instances, to be "greatly increased," "one third as numerous," and "as numerous" as the coloured corpuscles. In all these statements there is nothing exact. Perhaps the best method of judging is to regard the spaces—meshes left between the aggregations—as rolls of yellow blood-corpuscles. When these are completely filled up, the colourless bodies do not, in fact, amount to one third of the coloured ones, on account of the large number of the latter which may exist in a small space, in the form of rouleaux.

The size of the colourless corpuscles in the various cases given differs considerably. Even when at first sight they appear to be of tolerably uniform size, in any one case it may be observed, when they are magnified highly and carefully measured, that some are twice the size of others, with all intervening sizes between them. In some cases, though comparatively few in number, they are described as being three or four times larger than the coloured corpuscles, and in two cases they were in one about the same size, and in the other of two sizes, one larger and the other decidedly smaller.

In another part (p. 116), Dr. Bennett says :

That no difference whatever can be detected between the colourless cells of the blood [in leucocythæmia] and those of pus. Their general appearance, size, structure, and behaviour, on the addition of re-agents, are identical, and indeed so much so, that in the first case I observed in 1845, I could not resist the conclusion that the blood was crowded with pus cells.

The signs of leucocythæmia *after death* are more conclusive than those existing during life, but still they are far from certain and positive. The condition of the blood continues the same.

In 19 cases in which the blood was carefully examined after death, the same variations with respect to the number and size of the colourless corpuscles were found to exist, as have just been referred to in blood fresh drawn from the finger. It was always observable, however, that they were most numerous in the clot; and where they existed in any number, they communicated to the colourless coagulum a peculiar dull whitish look, and rendered it more friable under pressure. When less numerous, portions of the colourless coagulum from the heart and large vessels might be seen to present a dull cream colour, easily distinguishable from the gelatinous and fibrous appearance of a healthy clot, and such altered portions always contained a large number of the colourless bodies.

There was also a considerable diminution in the numbers of the red corpuscles, with some increase in the quantity of the fibrin, and in the coagulability of the blood—the heart and large venous trunks in several of the fatal cases being plugged up with coagula. With reference to the first two points, however, it must be stated that the examination of the blood was superficially conducted in everything except the mere observation of the colourless corpuscles.

As to the rest, Dr. Bennett observes (p. 92) :

The organs most uniformly diseased are the spleen, the liver, and lymphatic glands, the other lesions in the brain, lungs, heart, kidneys, &c., being evidently accidental or consecutive.

Of the 19 cases of leucocythæmia in which the body was examined after death, the *spleen* was found to be more or less enlarged in 16. In the other

3, although it was healthy, the pulp in one is said to be 'a little more compact than usual;' in a second, its condition after death is not alluded to, although an encephaloid tumour occupied the left side of the abdomen; and in a third, the spleen was healthy.

Of the 16 cases in which the spleen was increased in volume, it weighed above 9lbs. in 3; above 5lbs. in 2; above 3lbs. in 2; above 2lbs. in 4; and nearly 1lb. in 1 case. In 4 cases it was not weighed. The greatest weight of a spleen was 7lbs. 13oz., and the largest measurement $16\frac{1}{2}$ inches long and $9\frac{1}{2}$ inches broad. The texture of the organ varied in different cases, in some being of unusual density, in others natural, and in a third class more or less soft and pulpy. In a few cases it contained yellowish masses, appearing a form of deposit, but in reality degenerated tissue. The structure was examined, microscopically, in 7 cases, in all of which it was demonstrated that the cell and nuclear elements were increased, while the fibrous portion of the organ was apparently normal.

In 4 cases in which the existence of leucocythæmia is probable, changes similar to those just stated occurred in the spleen, and in Dr. Hodgkin's case similar lesions were found associated with enlarged lymphatic glands.

It is clear, however, the mere enlargement of the spleen is not necessarily connected with whitish cellular blood, for in case xxxi it was simply hypertrophied, and weighed 3lbs. and a half; and in numerous other cases, where this organ has been moderately enlarged, it has been proved, by careful examination, that the blood was normal. From the observations I have made in the structural differences in the spleen under these two circumstances, it appears to me that when enlarged in leucocythæmia its corpuscular elements are proportionately increased in number. When enlarged in other cases, it is apparently owing to simple hypertrophy, increase of the fibrous element, or congestion of blood. All these various alterations may be mingled together, in different ways and degrees.

Of the 19 cases examined after death, the *liver* was diseased in 13. In the other 6, it is distinctly stated to have been healthy in 5, while in 1 it is not noticed in the report.

Of the 13 cases, the liver was cirrhotic in 2,—1 in the incipient, some in the advanced stage of that disease. In a third case, there was cancer of the organ, and in the 10 others the liver was more or less hypertrophied. Of these it weighed above 13lbs. in 1; above 12lbs. in 1; above 10lbs. in 1; above 6lbs. in 3; and above 5lbs. in 2 cases. In 2 cases, though much enlarged, the weight is not stated. In these cases, the organ was more or less congested, and its consistence varied from great firmness to a degree of softening amounting to diffidence. The minute structure of the liver was carefully examined in 4 cases, and found to be unaffected in 3, while in the 4th it was infiltrated with cancerous exudation.

In the 6 probable cases of leucocythæmia, it is said that the liver was greatly hypertrophied in 4. In the other 2 its condition is not stated.

Of the 13 cases examined after death, the *lymphatic glands* were more or less diseased in 11. Indeed, it is very probable that they were affected in a larger number, as in most of the other cases they were in no way alluded to, and may possibly have escaped observation from an unacquaintance with the importance, which, as we shall see, ought to be attached to them.

Of the 11 cases, the lymphatic glands throughout the body were greatly enlarged in 4, and more or less cancerous in 3 others. The mesenteric glands were especially affected in 2; the thyroid and epigastric glands in 1; and the solitary and aggregate intestinal glands in 1. In some cases they were soft, presenting on section a granular whitish appearance, and yielding a

copious turbid juice on pressure. In other cases they were more indurated, and in 1 there were slight calcareous deposits. The glandular structure was examined microscopically in 8 cases, and in all exhibited increase of the normal tissue, the juice abounding in cell or nuclear elements. In 2 cases, cancer cells were mingled with the healthy textures of the glands.

In the 17th vol. of the 'Medico-Chirurg. Transactions,' Dr. Hodgkin has recorded 7 cases, in which the lymphatic glands were more or less enlarged, and at the same time associated with increased size of the spleen. He considers the enlargement of both structures to be allied, and to depend upon a primary lesion unconnected with inflammation or adventitious structures. The appearance of a bloody serum in the thoracic duct and absorbents struck him in 2 of these cases, but the blood itself was not apparently noticed. At the time Dr. Hodgkin wrote (1832), the microscope was not much employed in pathological investigations; but had the blood been examined in these cases, I cannot resist the conviction that the discovery of leucocythæmia would not have been reserved for the year 1845.

Such are the chief facts upon which Dr. Bennett endeavours to establish the existence, and demonstrate the characters of leucocythæmia, and upon which he proceeds to found certain important speculations on the genesis of the blood—speculations likely to exercise a very good or very bad influence upon practice, according as they are right or wrong.

First of all, Dr. Bennett is of opinion that the phenomena of leucocythæmia establish Mr. Wharton Jones's hypothesis, that the red corpuscles are the metamorphosed nuclei of the white corpuscles. Among these nuclei he has seen some which he conceives to be *transitional* forms, because they acquired a ruddy tint when exposed to the air, and because they were similar to certain bodies in the blood of some mammals, birds, reptiles, and fishes, which he and others had described as transitional forms. Having made this assumption he then proceeds to argue, with Hewson, that the white corpuscles of the blood, (and therefore the proper blood-corpuscles) are formed in the vascular and lymph glands,—(1), because there is a marked similarity between these corpuscles and those belonging to the glands;—(2), because there is a greater abundance of these corpuscles in young animals so long as the thymus, thyroid, and suprarenal bodies continue in activity,—and (3), because the increase of corpuscles in leucocythæmia is coexistent with a marked enlargement of some of other of these glands. This last argument is the new one.

No new light is thrown upon the mode in which the corpuscles of the so-called *shut-blood-glands* find their way into the vessels, but the fact of there being similar bodies in the vessels is considered a sufficient proof that they must have got out.

Now up to this point Dr. Bennett's reviewer—whose style and force do not leave him hid—agrees in the main with Dr. Bennett. According to him, the blood is a secretion of the vascular and lymphatic glands, and of the absorbent vessels,—his argument for this latter extension being, that white corpuscles are found in the lacteals which have not yet reached the glands, and in fishes where no such glands exist. (Med.-Chir. Rev., p. 199.)

Here, then, we pause in order to examine the evidence upon which

such important functions are assigned to the lymphatic system,—particularly that evidence which is derived from the phenomena of leucocythæmia. Once for all, then, we say that this evidence appears altogether unfavorable to such an opinion. We can readily believe that there is an intimate connection between increased action in the absorbent system, and increased numbers of white corpuscles in the blood, but we have yet to see that either of these facts has anything to do with the genesis of true blood.

The first difficulty in connection with leucocythæmia is the fact that the numbers of the red corpuscles are positively diminished,—a fact, which considering the hyperactive state of the lymphatic system, is at seeming variance with the idea that these corpuscles originate in this system. Indeed, this fact causes the Medico-Chirurgical Reviewer to doubt “whether *all* the colourless corpuscles go on normally to be developed into the red,” and then to express his adhesion to Kölliker’s opinion, “that there are colourless corpuscles in the blood which never pass into the condition of the red, and that while both have a common origin in the *lymph-globule*, the one mode of development is inconsistent with the other.” According to him, also, “the phenomena of leucocythæmia seem to support this view: a *diminution in the red corpuscles* being coincident with the *increase of the colourless*.” (Med.-Chir. Rev., p. 196.)

Another and greater difficulty is the general history of leucocythæmia,—the hæmorrhage, dropsy, exhausting diarrhœa, low fever, the splenic, hepatic, and other glandular enlargements, the disease of the lungs seriously affecting their capacity, the strumoid disease of the kidney, (as Bright’s disease may be called,) the cancer, emaciation, death,—symptoms which indicate, as conclusively as symptoms can do, that true red blood is not in a healthy and growing state. Nor does it explain the difficulty to say that the natural development of red corpuscles is arrested in leucocythæmia—arrested by the symptoms of debility which have been enumerated, except at the same time proof be given of the possibility of this development. The quasi-cellular bodies of the spleen and lymphatic glands, which contain several red corpuscles, and which Dr. Bennett considers white corpuscles in actual process of transformation into red corpuscles, have been recently shown to be extravasated blood-corpuscles, surrounded by adventitious cysts or coverings of albumen, which corpuscles instead of becoming developed, were submitting to a retrograde process of dissolution and absorption, and therefore no argument can be based on them. Nor is the mere fact of similarity in form and size between the red corpuscles and the nuclei of the white, any proof that the former are formed out of the latter; for this similarity extends to all corpuscular elements while in the nuclear phase of development. It is to be remembered also, that there are few, if any, instances of transition from one form to another, after a definite character has been once impressed. There is, no doubt, a perfect archetypal unity in every organic atom or element; but the stamp of diversity is fixed upon that unity in the very first moments of existence. Thus the determinate character of an ovum dates from the instant of impregnation, long before the fact is cognizable to our means of investigation. The

mere fact of similarity in form and size between a rudimental red corpuscle and the nucleus of the white, which floats by its side, is no proof that there may not be the greatest conceivable differences between them.

The true nature of the leucocythæmic corpuscles, and their relation to the red corpuscles of the blood, is seen in their *relation to pus-globules*. Now, what is this relation? Dr. Bennett says (p. 116,) "it must, I think, be granted by all those who have examined the blood in leucocythæmia, or will study the figures in the first part of my memoir, that no difference whatever can be detected between the colourless cells of the blood and those of pus. Their general appearance, size, structure, and behaviour, on the addition of re-agents, are identical,—indeed, so much so, that, in the first case I observed, in 1845, I could not resist the conclusion, that the blood was crowded with pus-cells." Still, according to Dr. Bennett, the leucocythæmic corpuscles are not pus-globules, and why? Because they tend to a higher development—tend to become true blood-corpuscles, instead of degenerating and breaking down, as is the case with pus-globules. This objection, however, may be set aside for the reasons already given, and being so, we may proceed to interrogate the remaining evidence. We find, then, that the white-celled blood is distinguished during life by very marked coagulability, and by the presence of coagula in the large venous trunks, and on the right side of the heart after death,—facts which Mr. Henry Lee has shown to be consequences of the admixture of pus with the blood. We find also enlargement and hyperactivity of the several absorbent and blood-glands, one of the consequences of which may be supposed to be an increased flux of lymph into the blood-vessels and elsewhere. Now what, we may ask, would be the result, if such effusion took place on the surface of an ordinary wound? Would it not be, that a certain portion would be converted into organisable products, and the residual portion into pus? And if so on the face of a wound, why not in the cavity of a vessel? We find also certain symptoms in leucocythæmia which are not at all inconsistent with the idea, that this state and purulent contamination are one and the same. We have much to learn of the symptoms of the latter. We know, and that is all we do know, that they are serious,—except we are at liberty to extend our knowledge by what Dr. Bennett has written for another purpose. Certainly, inflammation of the veins is no necessary symptom; for it is quite clear that the pyo-genetic liquid (the excess of lymph) may find its way into the vessels in other ways, as by mere increased activity of the ordinary lymphatic system. Nor are secondary abscesses essential; for in many instances, as in glanders, plague, syphilis, or variola, these are formed by the local working of some animal poison, and not by the deposition of pus already existing in the blood. The physical state of the blood, the state of the glands, and the character of the symptoms, therefore, all go to show that there is the most intimate relation, if not absolute identity, between leucocythæmic and purulent blood; and in this relation and identity we have the final proof, that the proper red corpuscles of the blood do not originate in the white corpuscles, nor in the glands producing them.

It does not follow, however, that all the white corpuscles of leucocythemia are pus-globules, any more than that all the corpuscular bodies in exuded lymph are of that nature. On the contrary, the probability is, that many of them would be what Dr. Carpenter calls "exudation-cells,"—cells which serve by their continual metamorphoses to effect some ulterior elaboration of the liquid in which they float; and in some instances it is even possible that they may be all of this character, true pus-globules making their appearance, as in the ordinary reparative process, only when the fibrinous fluid, from which they spring, is provided in excess.

We do not undertake to do more than contravene the idea, "that the lymphatic glands secrete the blood-corpuscles in the same manner as the testes secrete the spermatozoa, the mammae the globules of milk, or the salivary and gastric glands the cells of the saliva and gastric juice," (p. 104.) and we therefore leave the question of the origin of blood to others. It is not to be forgotten, however, that the blood springs into existence before vessels or glands, and that its subsequent health and richness seem to be in direct relation to the vigour and soundness of the circulation within its own special vessels. Indeed, if a gland be necessary to the formation of the true blood, we do not know why the blood-vessels may not be looked upon as that gland.

Professor Bennett's views upon the ultimate destination of the blood-corpuscles are no more satisfactory than those which concern the genesis of those bodies. "*The view*," he says, "*which seems most consistent with facts is, that the blood-corpuscles are dissolved in the liquor sanguinis, and with effete matter absorbed from the tissues by the lymphatics, constitute the blood-fibrin.*" (p. 110.) This hypothesis, however, is controverted by the reviewer in the '*Medico-Chirurgical Review*,' (p. 200.) and this in such a manner as to leave nothing else to be desired. He begins by expressing surprise, that so good a physiologist as Dr. Bennett should not only adopt Zimmerman's strange notion, that the fibrin of the blood is a result of the metamorphosis of the textures, and constitutes so far effete matter, but should proceed to affirm, that the arguments in support of this view seem to him unanswerable. He then goes on to say (p. 200):

We have already answered, and we think refuted, a great part of these, when advanced by Mr. Simon; and what force the others may seem to possess, appears to us to be entirely lost, when the uses of fibrin are viewed in a correct light. We will own for ourselves, that Dr. Zimmerman's arguments, taken in connection with certain recent chemical discoveries, have induced us to limit the *histogenetic* value of fibrin to a certain class of tissues—namely, the gelatinous; but we are as far as ever from regarding the fibrin as an *effete* product of the metamorphosis of the tissues; and we will give what appear to us unanswerable arguments against such a notion. All the products of the metamorphosis of the tissues with which we have any acquaintance, possess an entirely *inorganic* character; and the excretory apparatus is adapted to remove them from the blood as speedily as possible. It is only whilst *en route* to their appropriate channels of elimination, that their presence in the blood can be detected. Now, we should like to know what evidence we have that fibrin is a product of the retrograde metamor-

phosis of the tissues, which is to be compared with that which we possess respecting urea, uric acid, creatine, creatinine, sugar, lactic acid, &c. &c. But further, that blood is to be regarded as most pure, which is most thoroughly freed from these products; and if they should accumulate in it, even in extremely small amount, they speedily manifest the injurious influence exerted by their presence, in the morbid phenomena they engender. Now, will any one be hardy enough to affirm, that fibrin is to be placed on a footing with these substances? that the blood would be purer from being freed from it? that the functions of nutrition would be better performed if it were eliminated, instead of its presence being allowed in the proportion of two or three parts in 1000? To such reasoners we would simply point out, that not only does the presence of fibrin maintain, by its merely physical properties, that physical condition of the blood which is most favorable to its free movement through the vessels, and to its due retention within their walls, but we find that on its vital power of fibrillation does the cessation of hæmorrhage from even the most trifling injuries depend; that the limitation of purulent effusions by the consolidation of the surrounding tissue, and the safe separation of gangrenous parts, can only take place in virtue of the same property; and that the adhesion of incised wounds, still more, the filling up of breaches of substance, require, as their first condition, that either the blood, or matters exuded from it, should be able to assume, by a simple change of form, the condition of a fibrous tissue. Let Professor Bennett and our readers only consider what happens when there is an extreme deficiency in the fibrillating power of the blood. Let them picture to themselves a case of severe purpura, in which uncontrollable hæmorrhage, gradually draining away the *pabulum vite*, follows the drawing of a tooth, or even the scratch of a pin. Let them recall those terrible cases of purulent infiltration, in which the unhealthy condition of the blood prevents the limitation of the pus to the spot in which it was first effused, so that it makes its way through the tissues, corrupting and degrading them as it spreads, and producing the most fearful extent of disorganisation. Or, again, let them picture to themselves the separation of a slough, in which the vessels of the living parts have not been previously blocked-up by coagula, and the violent, and perhaps fatal, hæmorrhage which then ensues. And, lastly, let them think of the condition of those pale, flabby-edged wounds, in which there is no disposition to adhesion, or to filling up with granulation-structure, because the blood is deficient in that "plastic" property which is entirely due to the fibrin. If, after taking these facts into due consideration, they will maintain that the fibrin of the blood is an *effete* substance, and is, therefore, to be regarded as foreign to the constitution of pure, wholesome blood, we can only say that we hope they will try the experiment of defibrinizing (*à la Magendie*) a few *dogs*, before they carry their principles into practice by purifying the blood of their *human* patients from this noxious ingredient. We feel sure that they will soon return to the orthodox faith; and that whatever they will think of the *origin* of fibrin, they will admit that its presence in the blood has as important a relation to its purposes in the system, as that of any of its components, not excepting the corpuscles, can possess.

We have intimated that our own opinions on the subject of the destination of fibrin have undergone some modification since we last adverted to the subject; and the change is simply this. In common with many other physiologists, we formerly held the opinion, that fibrin represents the intermediate stage in the assimilatory process between crude albumen and the living tissues, and that it is, in fact, that element of the blood, which is immediately drawn upon in the operations of nutrition. This opinion rested, in part, upon

the current doctrine that fibrin is the constituent of muscle, and in part upon the assumption that, as fibrin is more endowed with vital properties than any other of the liquid constituents of the blood, so as to be capable of passing by itself into the condition of an organised tissue, it must be the one most readily appropriated by the various parts of the organic fabric, as the material for their growth and development. But it has recently been shown by Liebig, that, so far from there being any evidence of the identity of the fibrin of the blood with the substance of muscles, the evidence is entirely the other way; the substance of muscles bearing more resemblance to coagulated albumen, or even to the globulin of the corpuscles, than to the fibrin of the blood. On the other hand, all the evidence derived from careful observation of the organisation of plastic effusion, tends towards the conclusion that a fibrillating fluid poured forth from the blood comes at last to present the structural characters of the white fibrous tissue; and there are also chemical indications of the gradual conversion of the fibrinous into a gelatinous substance, the points of purely chemical difference between albumen and fibrin being such as indicate a relation in the latter to gelatine (so that Liebig speaks of the blood-fibrin as perhaps "albumen half converted into gelatine"), and the basis of false membranes, and the skin of the foetus—both of them fibrous tissues in an incipient stage of formation—being composed of a substance still more intermediate in its character between these two classes of compounds. We seem fully justified, then, in regarding fibrin as the special pabulum of these connective tissues, whose physical offices in the economy are so important, whilst their vital endowments are so low; and we see it serving, by its own vital endowment, for the generation of these tissues, whenever and wherever there may be a demand for them. They may be said, indeed, to exist *potentially* ready-formed in the blood; and no intermediate stage of cell-development is requisite for their production. On the other hand, there is as complete an absence of evidence that the tissues of the cellulo-albuminous type depend in any way upon fibrin for the material of their growth. They seem to develop themselves at the expense of the albuminous constituents of the blood, without any intermediate preparation, unless it be such as is effected by the floating corpuscles, drawing this from the fluid which escapes from the capillaries and permeates the tissues, and which, save in cases of extreme congestion, or of inflammation, is not fibrinous.

We might dilate at much greater length upon this question; but we think our readers will consider that we have already sufficiently taxed their patience; and we shall, therefore, withhold, for the present, some remarks we had intended making in regard to the relation of fibrin to the inflammatory process, and to other disorders of nutrition. We would simply direct Professor Bennett's attention to the inquiries of Mr. Paget's, which, taken in connection with the researches of Rokitsansky, appear satisfactorily to prove, that so far from there being an excess of fibrin (as stated by Professor Bennett) in "weakly, phthisical, and chlorotic individuals," and a less proportion of it in "robust persons," the proportion, as indicated by the character of inflammatory effusions, is precisely the other way,—such effusions, in robust persons, showing the greatest tendency to perfect fibrillation, whilst it is in cachectic subjects that they are most corpuscular, and show the greatest proneness to pass into the purulent form. The whole subject of the relative proportion of fibrin in different states of the blood, and in the blood of different subjects, needs, in fact, to be reinvestigated, with reference, not merely to the *amount* of the colourless coagulum, but to its *composition*; for not only, as Mr. Paget has remarked, is the apparent increase of fibrin

often due, in reality, to an augmentation in the colourless corpuscles, but even what is really fibrin may, though augmented in quantity, be so deteriorated in quality, as shown by its very imperfect fibrillation, that its excess cannot be rightly said to indicate a greater plasticity in the blood.

Such is the estimate we are obliged to form of Professor Bennett's researches in *Leucocythæmia*, or *White-Celled Blood*. This imagined discovery we hold to be only *pyhæmia*, or *purulent contamination of the blood*. Not that all the "white-cells" are pus globules; for, as we have said, many of these, and sometimes even a majority, are "exudation-corpuscles," and the like. The deductions, also, we must consider as untenable and dangerous. We think it a serious error to suppose that the lymphatic, or so-called blood-glands, have anything to do with the formation of true red blood, and especially that hyperactivity of these glands is favorable to that formation. Indeed, so far from this being the case, we gather from the facts at our command, and chiefly from those brought to light by Dr. Bennett, that such hyperæmia is favorable to the formation of purulent matter, and, by implication, of tuberculous, cancerous, and other diseased products which rank in the same category. We think, indeed, that all glandular enlargements should be looked upon with suspicion, and even with dread, not as mere accidents, but as important sources of the several diseased products which have been named. We think it also a serious error to suppose that fibrin is effete matter; but the refutation of this idea has fallen, as we have shown, into hands which require no other help.

Many weighty and practical interests hang upon a correct understanding in these matters, upon which we would gladly dilate, but we have already trespassed beyond the bounds which would have been permissible if Dr. Bennett had been an ordinary or unimportant authority.

3. *On Tuberculosis, the Constitutional Origin of Consumption and Scrofula*.—Mr. Ancell's book* is a very complete digest of what is known upon the subject of tuberculosis. Its main object is to show that the affection is neither a cachexia nor a diathesis, but an idiopathic malady affecting the blood; and this we take to be a pity, for in our opinion—even upon Mr. Ancell's showing—the blood has no right to be regarded as the *Ultima Thule* in this branch of pathology. The plant is stunted and distorted because it has been placed in ungenial circumstances, and not because its sap contains dissolved abortions. Transplant it into a productive soil, where it shall have a fair share of the warmth and light and dews of heaven, and it soon runs wild in recovered health and luxuriance. The poor sempstress is consumptive because she is forlorn and pinched and confined in a dingy, stifling, fireless apartment, and not because her blood is rife with the germs of consumption. Remove her in time from these baneful associations, and the poor creature soon brightens into better health. Indeed, it may admit of a doubt whether she has more independent life than the

* A Treatise on Tuberculosis, the Constitutional Origin of Consumption and Scrofula. By Henry Ancell. Longman, Brown, Green, and Longmans, Sept. 1882.

plant, if as much; for isolate her more completely from her friends, make her meal still more stinted, shut out the few remaining rays of day, and extinguish the fire upon her hearth, and she succumbs sooner than the plant which starves in her company. In a word, the pathology of tuberculosis is a question to be solved by a Newton-like study of the altered relation of the part to the whole,—of the individual to the cosmos,—a study in which the microscope is the companion of the telescope, and the society of the sick and dead is often changed for that of living man and the unbounded universe. Mr. Ancell, however, thinks that the changes in the blood will explain this difficulty, and to his pages we would refer for his arguments on the subject.

Apart from theory, however, Mr. Ancell's book is very rich in facts. The predisposition, the signs and symptoms, the morbid anatomy, the causes, the general pathology, the varieties and the treatment of tuberculosis, are all fully gone into, and from each of these heads* we might obtain very profitable matter for quotation. The following remarks upon the "*atrophy of tuberculosis*" will serve as a sample of the contents of the volume :

Notwithstanding Louis came to the conclusion that in one half only of the cases of phthisis observed by him atrophy existed among the earliest symptoms, and he does not regard it as a precursor of tubercular deposit, and that Fournet found tuberculous subjects frequently moderately fat, being apparently in a state of perfect *embonpoint* before any disease sets in, and occasionally very fat,—10 such subjects, the majority of whom were women,* occurring in 192,—atrophy is one of the most general structural changes in tuberculosis. It is sometimes that which both patient and friends are the first to observe as indicative of a modification in the state of the constitution. Frequently, indeed, it occurs with very slight concomitant indications of deranged health, and, as remarked when treating of the predisposition, it may prove of temporary duration, the frame recovering a perceptible, although spurious *embonpoint*, on some salutary change. The character of the emaciation of tuberculosis requires to be well considered by the practitioner. It takes its rise from the morbid condition of the blood, and the defective organisation and nutrition of cells, areolar tissue, and of all those structures of which cell-growth forms the basis. There is a consequent loss of correspondence between the powers of deposition and absorption.

The first inroads of this emaciation are indicated by a diminished density and tension of structure. A soft and consequently yielding condition for the most part accompanies the anemia already described. This diminished density and tension in the tegumentary membranes render the limbs flabby, frequently the first circumstance observed in young children becoming tuberculous. In children, also, the emaciation proceeds rapidly, especially when they have previously exhibited that puffiness and spurious hypertrophy which characterise the predisposition; and it occasions a peculiar shrinking of the features; the delineations of the muscles being more distinctly seen.

Whenever, in a tuberculous subject, or under circumstances calculated to induce tuberculosis, a wasting of the tissues sets in, and becomes either insidiously or rapidly progressive, it is a sign well calculated to excite the most serious alarm.

* Recherches Clinique, p. 407.

The atrophy of tuberculosis is so important in diagnosis, pathology, and treatment, that the practitioner cannot be too vigilant in its detection whenever its existence is suspected either in those who are predisposed to the disease, or in individuals placed under circumstances in which a tuberculous state of the blood is likely to be produced; nor too careful in watching its progress. For these purposes, direct observations on the weight are absolutely necessary. No vague notions on this point will serve any useful purpose. Patients, and those of the lymphatic temperament especially, will frequently mistake the puffiness of the face and spurious hypertrophy of the areolar tissue, which frequently conceals the true state of the adipose and muscular systems, for a really good condition of the general habit. If we trust to their representations, on the one hand, the atrophy may proceed until tubercular aggregation in some important organ occurs, before we are certain of its existence, and on the other hand, we can never appreciate the results of treatment. Nor is the determination of the absolute weight of the patient important only for the purpose of detecting emaciation, and watching its progress, as an absolute sign of the disease, and as a measure of the gross effects produced in the fluids and organic tissues by the vitiated state of the blood. It is also essential for the purpose of assisting in the estimation of the value of other symptoms. We shall find, as we proceed, that the respiratory powers are modified in tuberculosis, and furnish symptoms of the disease; but the weight of the body exercises a direct influence over the respiratory function, and, in this point of view, it is essential to study the weight of the patient, and to be aware of the import of the absolute and relative weight, and of the variations of weight to which the body is liable.

To determine the weight, and for the purpose of detecting the first inroads of tuberculous emaciation, and watching its progress, I have followed Dr. Hutchinson's recommendation, and adopted the use of the French scale, or weighing machine, as a correct instrument, and occupying little space.

To Dr. Hutchinson we are indebted for many valuable experiments on the subject, and I propose to avail myself extensively of his results.*

There are certain points connected with the weight of the body which it is essential to bear in mind in making observations on the weight of patients labouring under tuberculosis, and as they are eminently practical I make no apology for introducing them here. As a general rule the weight of the body increases with the height; but the absolute weight in relation to the height varies considerably, being, nevertheless, within the physiological range. The weight, therefore, requires to be estimated in relation to the height, so that, together with the weight, the height of the individual should be taken and noted. As a standard of comparison, Dr. Hutchinson has constructed a table of the mean weight of a large number of males at the middle period of life, in relation to their height. We shall find that tuberculosis diminishes the function of respiration, and excess of weight also diminishes the function of respiration; so that, in estimating the respiratory function, as a sign of tuberculosis in corpulent individuals, the latter circumstance must be taken into account. The influence of excess of weight, however, over the respiratory function, is not felt until the excess goes beyond seven per cent. of the mean; therefore, to the mean which an individual ought to weigh, seven per cent. must be added, before we allow for the corpulency as influencing the respiration. Dr. Hutchinson's table, which follows, comprises this latter circumstance. I have employed this table with great advantage. It is constructed from observations made on—

* *Medico-Chirurgical Transactions*, vol. xxix, p. 137.

2650 healthy Males at the middle period of life.

Exact Stature.		Mean Weight.			Weight increased by 7 per cent.		
ft.	in.	st.	lbs.	lbs.	st.	lbs.	lbs.
5	" 1	8	" 8	or 120	9	" 2	or 128
5	" 2	9	" 0	..... 126	9	" 9	..... 135
5	" 3	9	" 7	..... 133	10	" 2	..... 142
5	" 4	9	" 13	..... 139	10	" 9	..... 149
5	" 5	10	" 2	..... 142	10	" 12	..... 152
5	" 6	10	" 5	..... 145	11	" 1	..... 155
5	" 7	10	" 8	..... 148	11	" 4	..... 158
5	" 8	11	" 1	..... 155	11	" 12	..... 166
5	" 9	11	" 8	..... 162	12	" 5	..... 173
5	" 10	12	" 1	..... 169	12	" 13	..... 181
5	" 11	12	" 6	..... 174	13	" 4	..... 186
6	" 0	12	" 10	..... 178	13	" 8	..... 190

The usual or natural weight of an individual may differ from the above standard both in *excess* and *deficiency*; and, at all times, deficiency of weight tends to show deficient nutrition. In tuberculosis, the absolute weight, in reference to the mean standard for the individual, not presenting a very marked difference, is a fact, *per se*, of considerable practical value; but, we shall presently find, that it has a most important bearing upon the subject of the respiration in this disease. In the present place we are only insisting upon the necessity of detecting and watching loss of weight as an important diagnostic sign of tuberculosis.

When in tuberculous subjects—or in subjects placed under circumstances calculated to produce tuberculosis—a wasting of the tissues sets in, and becomes either insidiously or rapidly and obviously progressive, independent of any local symptom or physical sign whatever, it is calculated to excite the most serious alarm. Dr. Hutchinson lays it down, that a *slow* and *gradual* loss of weight is more serious than a *quick* and *irregular* loss of weight, and my own experiments fully confirm this remark. A person may, from time to time, *lose* and *gain* weight; but he cannot do this slowly and gradually without exciting suspicion of the existence of some serious disease. In tuberculosis the loss of weight is at first almost imperceptible, and would with difficulty be detected even by weighing. Omitting to avail ourselves of this process, it may proceed even to a considerable extent without being perceived; and as it does not appear that Louis weighed his patients, this is probably the reason why he failed to recognise any degree of atrophy in so great a proportion. If the diseased condition of the blood continue, the atrophy insidiously and constantly advances; and in an individual predisposed to tuberculosis, if this progressive waste is unattended with any decided organic or functional affection of the viscera, it may, therefore, be *more* rather than *less* alarming. It indicates that the blood is becoming so decidedly tuberculous, as to cease to be capable of sustaining the healthy functions of life and especially the functions of respiration and nutrition.

Such is the importance of loss of weight and the emaciation of tuberculosis. It is quite true that death may occur in certain forms and varieties of the disease long before this emaciation takes place to any great extent; as, for

instance, in cases of "acute phthisis," "tubercular pericarditis," &c.; but, then, the death is produced by some intercurrent disease, as pneumonia, pleuritis, perforation, or hæmorrhage. I lately examined the body of a female who died of pneumonia, with tubercles in her lungs, and an inch depth of fat over the abdomen; still she had lost weight before the attack of pneumonia. When tuberculosis pursues its course uninterruptedly this emaciation is progressive, distinguishing it from the periodical loss of weight which some persons undergo, even in health.

Lehmann states, that in exceptional cases atrophy does not occur in tuberculosis, even when the lungs are diseased to a great extent, and in these cases the tuberculosis is generally accompanied with the fatty liver;* but the statement is extremely questionable, inasmuch as we know not whether in these cases the antecedents of the signs of local disease were noted.

The atrophy of tuberculosis differs from the more simple atrophy arising from starvation, hæmorrhage, and the like causes, and also from that which exists after fever and some other specific diseases. In atrophy, from these causes, hunger arises and is persistent; healthy secretions are poured into the alimentary canal, sanguification is perfected, and a direct relation subsisting between primary digestion and ultimate assimilation, the atrophied tissues appropriate to themselves nutritious molecules, the endosmose of the cells in the tissues exceeds the exosmose, and recovery takes place; but in the atrophy of tuberculosis the hunger which arises is frequently inconstant, the digestive secretions are imperfect, indigestion almost constantly prevails, the sanguification is tuberculous, the blastema is not of a nature to afford proper nutritious molecules, the exosmose of the cells exceeds the endosmose, and, like the red corpuscles of the blood, the cells continue to waste, and the atrophy proceeds.

It has been well remarked, that the atrophy of tuberculosis is not simply a defect of nutrition, in which the number of the molecules which compose the tissues is decreased, the tissue retaining its natural composition and organisation, but, corresponding with the special morbid state of the blood, it is an alteration in kind. As of the anæmia already described, it is not produced by a deficiency of blood only—a very common cause of atrophy—nor by fever, nor by excessive evacuations, nor by any defect of primary digestion; for in many cases neither of these circumstances have existed. The appetite and digestion may continue good till within a few hours of death; and in cases where emaciation from other causes has proceeded to the most extreme degree, tuberculosis has not been produced; but the emaciation of tuberculosis is attributable to a specific vitiation of the blood producing a corresponding vitiation of the blastema and mal-organisation and mal-nutrition of cells, the vital power of which being below the healthy standard, there is a consequent excess of the disintegrating over the integrating processes.

This atrophy is not quite universal. It is exhibited in the membranous more decidedly than in the parenchymatous structures. The areolar and adipose tissues are affected by it in the first place. The secretion of fat being vitiated in quality, this morbid fat is probably first absorbed from the subcutaneous adipose tissue, and the effect of this absorption is a remarkable collapse in the features, which often lose their rounded form. In the interior of the body the omentum appears to suffer very early, and most probably the fatty matter surrounding the voluntary muscles—also that in the orbits; but in the latter situation and about the base of the heart it never entirely disappears. The fat cells may sometimes be supplied with a serous fluid in the place of the fat (Kölliker).

* *Physiol. Chem.*, vol. i, p. 251.

Although there is a twofold cause for the emaciation of the muscles, the defective nutrition of the fibrous tissues generally, a frequent characteristic of the predisposition, becoming more decided when actual disease sets in, and the diminished use of the voluntary muscles, resulting from the debility which will presently be described, the muscular atrophy is less easily and later observed than the defects of the more superficial structures, which have cellular tissue for their basis.

From the experiments of the late Dr. Clendenning,* it would appear that the viscera, for the most part, do not participate in this emaciation. It falls upon the organs of locomotion, probably the heart, the cellular and fibrous tunics of the vessels, and the alimentary canal; but the liver, kidneys, spleen, pancreas, and other organs, appear to maintain their density and bulk. According to Dr. Boyd's 'Vital Statistics,' the average sum of the weight of the entire viscera—the brain, heart, lungs, liver, spleen, stomach, pancreas, kidneys and appendages, and uterus—after death from tuberculosis pulmonalis, between 17 and 60 years of age, in males, was 39·26 ounces above the natural standard adopted by Dr. Clendenning, and in females about 27·05 ounces; but in these cases the average of the weight of the lungs in males was increased 25·71 ounces, and in females 14·48 ounces. The heart both in males and females was very slightly increased in weight, the liver 5·63 ounces in males and 7·32 ounces in females.† The experiments upon which these statements are advanced were, however, made upon individuals who died with local disease; and it may be here stated, that in the midst of the general waste, as tuberculosis with local disease of the lungs especially, advances, a large deposition of fat frequently occurs in the liver and kidneys, and probably in other viscera. M. L. Parola has lately dwelt much upon enlargement of the liver, which he describes as nearly a constant occurrence even before the development of any local disease; certainly before any stethoscopic signs can be perceived. Attaching great importance to this viscus, he quotes Meckel on its enormous size during fetal life, and believes it to be the generator of the blood. He quotes, also, Professor Rostan, who believes that if on examining the liver by palpitation and percussion the organ is found to be small and not unusually developed, so constant is its hypertrophy in tuberculosis, that he infers a negative as to the existence of the disease. We know not what allowance ought to be made for the deposition of fat, or whether it constituted a part of the bulk in the particular cases examined, so that we cannot at present assume that the viscera are altogether exceptions to the general atrophy of this disease. The abdomen, unless distended by air in the intestines, becomes wrinkled and flat.

As tuberculosis is met with in this country, particularly in the early stages, before any local affection develops itself, there is reason to believe that the medullary matter is frequently exempt from the defective nutrition, for the reason already stated; although, in the more inveterate forms, particularly where the disease has been hereditary through several generations, as in the cretins, and probably in some of those infantile cases which assume the cerebral form, the medullary structure is, in all probability, involved. Even in active tuberculosis, as in the predisposition, this exemption of the structure of the nerves from the general deterioration, frequently secures the healthy performance of the nervous functions for a great length of time. Notwithstanding the rapid wasting, and, as it were, liquefaction of the body, the sensorial and intellectual faculties are not only duly performed, but even more acute than natural, and, except from loss of power, which we shall

* *Medico-Chirurgical Transactions*, vol. xxi, p. 33, 1837.

† *The Edin. Med. and Surg. Journal*, vol. lxi, p. 268.

presently have to notice, the sensations and mental operations of the patient deviate but little from those of health, till within a few days, and sometimes within a few minutes, of dissolution.

In those cases in which the defects of the bony skeleton have formed part of a predisposition, when this atrophy sets in the defects become more manifest than heretofore; the projection of the shoulders, for instance, is greatly increased after the muscles become emaciated and the fat absorbed; this emaciation is frequently more observable over the parietes of the chest than elsewhere, especially in females, the osseous projections becoming more and more defined, and this sometimes occurs before the individual has complained of ill-health, the face maintaining its healthy appearance; the contraction of the chest accordingly becomes more obvious. It is probable that the bones participate in the emaciation. Laennec remarked, that they lose nothing in length, but he frequently thought that their diameter was lessened. The medullary canal, in the long bones, is sometimes enlarged by internal absorption, the walls becoming as thin as paper, and in general they certainly lose in specific gravity. From the earliest period sometimes the hairs fall off, owing to atrophy of their bulbs; and the nails, if not previously incurved, become so from malnutrition and atrophy of the matrix, and loss of substance in the fleshy parts of the fingers. If no efficient means be adopted to renovate the whole mass of deteriorated blood, the attenuation proceeds; the adipose and muscular tissues are rapidly absorbed; the nose becomes pointed; the eyes sink in the orbits, although they frequently "sparkle with a liquid lustre;" the temples become excavated: the jaws hollow; the integuments of the mouth are, as it were, stretched over the teeth, and the patient frequently exhibits a kind of ghastly smile; the skeleton projects more and more through the skin; the muscles of the arms become indistinct; there is no vestige of breast except the nipple; the ribs may not only be counted, but their terminations may be seen; neither their articulations at the vertebral column nor at the sternum are concealed; the intervals between them are hollow and curved; the joints of the legs, hips, and arms become prominent and devoid of flesh; and the spines of the vertebrae project from the wasting of the muscles on each side. The emaciation is also exemplified in a remarkable manner in the leanness of the fingers, the joints of which appear thickened, and, from the shrinking of the flesh, the whole finger resembles mere bones covered with transparent skin; the hypochondriae are sunk and retracted; the epigastrium and flanks adhere, as it were, to the spine; and the whole frame appears to be wasted, except, perhaps, the lower extremities, which are oedematous towards the last,—a circumstance which may result from debility alone, or from pressure on the iliac veins, owing to the absorption of the areolar tissue and fat which surround them, or both circumstances. In fine, the individual before death attains that degree of atrophy which, in all probability, led to the disease in its various forms being called CONSUMPTION. This emaciation, and the structural changes described, are directly associated with, and explain many of the functional derangements yet to be noticed.

The absolute loss of weight in tuberculosis has been variously estimated. Dr. Boyd found in 141 consumptive individuals, compared with that of an equal number free from the disease, the loss of weight in relation to the height was more than one third of the whole body. When tuberculosis pursues its course uninterruptedly, the loss before death is considerably more, but the subjects of it are most frequently cut off by visceral disease before it has attained its maximum. Hasse estimates the average loss at 48 lbs.

Atrophy is so frequently the earliest appreciable sign of disease in tuber-

culous subjects,—it proceeds so progressively and uniformly from the commencement to the termination,—it is so little related to the *extent* of local disease either in the lungs or elsewhere,—it is so directly related to the diseased condition of the blood,—that there can be no doubt it is, from the beginning to the end, symptomatic of the general disease. Local affections of the intestines—of the mesentery—of the lungs—or hectic fever, may precipitate it; but in instances where tuberculosis has pursued its course without a symptom of hectic fever, and where the vital organs have been comparatively little affected, emaciation has reached its utmost limits before the death of the patient.

4. *On Rheumatism*.*—Dr. Fuller follows in the steps of Drs. Prout and Todd, and shows that these diseases depend upon an excess of some morbid matter in the blood, probably lactic acid. He then proceeds to give a complete account of the diathesis and seat of the affection; of acute rheumatism, and the affections of the heart, brain, lungs, pleuræ, and joints associated with it; of rheumatic gout, of chronic rheumatism, of sciatica: in a word, of everything connected with the subject under consideration. The clinical pictures are faithful, the statistical evidence carefully developed, and the effects of different modes of treatment fully inquired into. The history of the associated affections of the heart is particularly deserving of attention, and the subjoined remarks upon a very difficult question in this history, will, we have no doubt, incite a desire to hear what the author has to say on other points:

On what does rheumatic inflammation of the heart depend?

It was formerly supposed to be due to metastasis, or, in other words, to the retrocession of the disease from the external parts, and its consequent transfer to the membranes of the heart. But more recent and more extended observation has shown that endocardial or exocardial inflammation may occur as the first, and, for some time, the only local symptom of the disease;† that it sometimes *precedes, by several days*, the access of articular redness and swelling, and that even in cases where it does not take place until after inflammation of the joints has been set up, it is rarely preceded or accompanied by subsidence of the previously existing articular mischief. In other words, it has shown that, in the great majority of cases, no connection can be traced between the two sets of actions, beyond their origin in one common source of

* *On Rheumatism, Rheumatic Gout, and Sciatica, their Pathology, Symptoms, and Treatment*. By Henry W. Fuller, M.D., Cantab., Assistant-Physician to St. George's Hospital. London, Churchill, 1852. 8vo.

† Three instances of this sort have fallen under my own observation. In two cases the patient laboured under pericarditis two days, and in the other three days, prior to the appearance of articular inflammation. My colleague, Dr. Wilson, has recorded another very striking case in point, in the 'Lancet' for November, 1844, vol. ii, p. 217. Dr. Dundas, Physician to the Northern Hospital, at Liverpool, has favoured me with the particulars of another: one is quoted in Dr. Graves's 'Clinical Medicine,' ed. 2, vol. ii, p. 160; one, by Dr. Watson, in his 'Practice of Physic,' vol. ii, p. 234; one, by Dr. Hope, in his 'Treatise on the Heart,' ed. 3, p. 178; one, by Dr. Duncan, in the 'Edinburgh Medical and Surgical Journal' for 1816; one, by M. Hache, in the 'Archives Générales de Médecine,' vol. ix, p. 325; and two others, by Dr. Taylor, of Huddersfield, 'Medico-Chir. Trans.,' vol. xxviii, p. 527. Others also are to be found recorded in various medical periodicals.

mischief,—in one poison which excites inflammation, now at one spot, now at another; at one time attacking several joints simultaneously or in succession, and then the investing or lining membranes of the heart; at another, reversing the order of its attack, and exciting inflammation, first of the heart and then of the articular structures. Hence, although rheumatic inflammation of the heart may possibly be connected, in some rare instances, with the sudden subsidence of articular inflammation, and the transfer of irritation from the external parts, it must be regarded, in most instances, as a mere coincidence, and as an extension of the local manifestations of the disease.

I have thought it right to be thus explicit in stating my conviction as to the true pathology of this disease, because a clear and full understanding on this point is essential to a correct appreciation of many circumstances, having an immediate and practical bearing on the questions at issue, namely, the class of cases in which cardiac inflammation is most liable to arise, and the possibility of guarding against its occurrence. If, as I believe, it is annexed to the same pathological condition of the system, and arises from the same cause as inflammation of the joints, it is fair to presume that much important information respecting it may be obtained by a close observation of the circumstances which influence the articular inflammation. If, like the external redness and swelling, this internal inflammation be due to the irritation of a *materies morbi* present in the blood, and circulating with it to every part of the body, then may we infer that those causes which determine the access of inflammatory action about the joints, and which modify its course, will, in this case also, exert a controlling or modifying power.

What, then, are the facts with regard to the articular inflammation?

It occurs most frequently and most extensively in cases remarkable for the severity of their general symptoms; in which, therefore, there is great abundance of the *materies morbi*, or a state of system peculiarly susceptible of its influence. It does not attack all the joints indiscriminately, but selects different joints in different cases; those which are most used, or which have been the seat of injury or irritation, being more than ordinarily liable to its invasion. It attacks a larger number of joints, and is more likely to invade any particular joint, in proportion as the local symptoms are more migratory; and, lastly, it may be in great measure prevented and subdued, by the use of alkaline and opiate fomentations, and by the exhibition of medicines which serve to counteract the rheumatic poison, to promote its elimination, and to prevent its further formation. Hence it appears that cardiac inflammation should occur most frequently in cases characterised by great febrile disturbance, and by the number and intensity of the articular inflammations; that as in most attacks of acute rheumatism some joints usually escape unscathed, so also the heart should sometimes remain unaffected throughout; that it should be most liable to be attacked when the local symptoms of the disease are shifting or migratory, and when, either from some constitutional peculiarity, or from extraneous and temporary causes, its irritability is unusually exalted; and that it should be protected by the exhibition of such medicines as are calculated to exercise a sedative influence over it, to counteract or destroy the irritant property of the rheumatic element, and to promote its elimination from the system.

Some difference of opinion has been expressed as to the existence of any peculiar proneness to heart-disease among the severer examples of acute rheumatism, and no less authorities than Dr. Latham and Dr. Watson have stated, that "Pericarditis is not more to be looked for when the disease (rheumatism) is severe than when it is mild." If, by this assertion, they mean that pericarditis is not invariably an accompaniment of severe articular rheumatism, and

occurs not unfrequently when the articular symptoms are slight, or altogether absent, I entirely concur in their opinion. But it is quite inconsistent with my observation to believe that it *often* occurs, in cases which are not characterised by active symptoms of disease. Whenever I have met with it, even though the articular inflammation may have been slight or evanescent, the febrile disturbance has always been severe, and accompanied by profuse and sour-smelling perspiration. As many as 114 out of the 130 cases of recent heart affection observed among the rheumatic patients admitted into St. George's Hospital during the time I held the office of Registrar, occurred in the acute form of the disease; and taking pericarditis alone, 39 cases were noted among the class of acute rheumatism, and 2 only among the subacute; the number of patients in the respective classes being 246 and 133. In other words, these cases show that whereas pericarditis occurs once in about every 6.3 patients suffering from *acute* rheumatism, it does not accompany above 1 in every 66.5 cases of the sub-acute form. Nor is the result of my experience inconsistent with that of other observers. Amongst 114 cases of articular rheumatism recorded by M. Bouillaud, there were 74 of great or medium intensity, and 40 of a slighter description, and among the first there occurred 64 in which the existence of pericarditis or endocarditis was certain, and 3 in which it was doubtful, whilst among the 40 of the second class its existence was only once discovered.* Dr. Macleod, without giving any statistics on the subject, says, very decidedly, "according to my experience the heart affection is more frequent in severe than in mild cases of rheumatism."† Dr. Copland is of the same opinion;‡ and Dr. Wm. Budd believes "that rheumatic inflammation of the heart is most common in severe cases, especially when there is much fever, and the parts affected are numerous."§

Every fact, then, in regard to rheumatic inflammation of the heart, is strictly in accordance with what we are led by analogy to expect. In many instances the heart remains unaffected throughout the attack, and though it does sometimes suffer, even in the milder cases, it is most commonly damaged in those instances which are marked by unusual severity of their general symptoms, by the number and intensity of the articular inflammations, and by the rapidity and frequency of their migration.

So far the analogy is complete. The next question to be decided is, in what cases and under what circumstances the heart's irritability is greatest, and whether it is in such that the risk of inflammation in that organ is most imminent?

Experience and observation have long since supplied abundant data for a solution of this problem. It is notorious that, in youth, the heart's action is not only quicker than in more advanced life, but that it is also much more readily accelerated. In women, in like manner, the heart is acted on more readily than in men, or, in other words, is more irritable, and more easily excited. In those persons, again, who have been weakened by illness, or by large and repeated bleedings,|| and in those peculiar states of system which are marked by a deficiency of red globules in the blood, the heart's irritability is much increased, and palpitation is readily induced. These, then, are the cases, theoretically at least, in which cardiac inflammation should be most

* 'Traité Clinique du Rheumatisme,' Preface, p. 12.

† 'On Rheumatism,' p. 45.

‡ 'Medical Dictionary,' vol. ii, p. 195.

§ 'Library of Medicine,' vol. v, p. 199.

|| The experiments of Messrs. Andral and Gavaret, recorded in the 'Annales de Chimie,' vol. lxxv, prove most conclusively, that bleeding diminishes the number of cor-

liable to arise. And so in practice they are found to be. It is now generally admitted that inflammation of the heart is a much more frequent concomitant of acute rheumatism, when occurring in youth, than when occurring in those more advanced in years.* Statistical observations have shown that it is more common in women than in men; and I have always been struck, both in private practice and in the wards of St. George's Hospital, by the frequency of its occurrence in the pale and weakly, in those who have been reduced by previous illness, or exhausted by the treatment adopted, and, *cæteris paribus*, in those in whom the heart's action is particularly accelerated. Indeed, I believe that after carefully weighing these several circumstances, after considering the age and temperament of the patient, his previous condition, the violence of the attack, the state of the pulse, and the plan of treatment about to be adopted, it is possible to predict, with tolerable certainty, the occurrence or non-occurrence of cardiac inflammation.

It would appear, then, that whenever the heart's irritability is great, the rheumatic poison must be peculiarly prone to attack that organ on the same principle as it is to invade a joint which has been previously strained, or is constantly used; and, therefore, that anything which tends to augment the heart's irritability, must tend, *pro tanto*, to render the patient liable to heart affection; whilst anything having an opposite tendency must serve, in some measure, to shield him from such a complication. Hence, although a moderate venesection may sometimes be necessary for the relief of local symptoms, and for the purpose of facilitating the action of remedies, yet excessive bleeding, by inducing irritability of the heart, cannot fail to predispose to cardiac affection; excessive purgation must for the same cause have a similar effect, and so must everything which has a like tendency. On the other hand, alkalis, freely administered by correcting the morbid condition of the blood and promoting the elimination of the *materies morbi*, directly tend to obviate inflammation by removing its cause, whilst with opium, colchicum, and other medicines, they exert a sedative influence over the heart, and thus tend, in some measure, to protect it from danger.

puscles to a remarkable extent, and in that respect brings the blood into a condition resembling the blood in *anæmia*, in which the heart is peculiarly irritable. Three of these experiments give the following results:

		1st Bleeding.	2d Bleeding.	3d Bleeding.	4th Bleeding.
Amount of globules in 1000 parts of blood	Case i.	114.8	111.0	102.8	88.7
	„ ii.	125.3	124.9	121.4	99.6
	„ iii.	123.7	120.7	112.8	101.0

Messrs. Bequerel and Rodier also sum up the result of their experiments by stating "the effect of venesection is to cause a great diminution of the corpuscles, while it only slightly lessens the amount of albumen." (*Simon's 'Chemistry,'* vol. i, p. 250.)

* Dr. Watson, Dr. Macleod, Dr. Todd, and others, bear witness to this important and significant fact.

5. *Tracheotomy in Epilepsy.**—The following case is cited by its author Mr. Mackarsie, and its commentator Dr. Marshall Hall, as an instance of the successful treatment of epilepsy by tracheotomy, and, as we think, erroneously. In the first place, the inflammation and fever which occurred immediately after the operation, and continued for some time, is sufficient to prevent us from ascribing the absence of the fits to the operation. We have more than once seen habitual epilepsy suspended by inflammation resulting from injuries received during the fit; and we know of instances of a like nature occurring in the practice of others. We have also seen epilepsy suspended by ordinary pathological inflammation. Epilepsy, indeed (as is shown in the next section of this report), is utterly uncongential with any active state of the circulatory system, and the presence of such state is therefore one reason for the absence of the fits. In the second place, the paralysis which happened three or four years previously, and the long-continued coma which followed after each fit, are facts which go to show that the epilepsy in this case was in some measure dependent upon cerebral mischief, and hence, it is possible, that the pulmonary inflammation might have acted beneficially upon the fits, even after its subsidence, by diverting this cerebral disease into another channel. In the third place, the influence of the imagination has to be weighed against the operation,—for faith must have been strongly called into exercise before a patient could be got to submit to so severe a remedy.

A more practical reason, however, for questioning the efficacy of the operation in Mr. Mackarsie's patient is to be found in a case recorded in a recent number of the 'Gaz. Med. Ital. Lomb.,' by Dr. Andrèa Verga, and copied thence into Schmidt's 'Jahrbücher,' for 1852, No. 2, p. 167—a case in which *severe epilepsy actually co-existed with a fistulous opening in the windpipe.* The main particulars are the following:—

A. B.—, aged 25, was admitted in 1841 into the Great Hospital at Milan, with his throat cut, and his genitals severely mutilated, in consequence of a determined attempt at suicide. Six months afterwards his wounds had healed, with the exception of a fistulous opening into his wind-pipe, but his fits and despondency had undergone no change. The breath passed freely in and out of the artificial opening, and the fits recurred with equal frequency and force, whether the opening was closed or not. In this state he was removed to a mad-house, and in this state he remained for three years, when he died of tabes, the fistula continuing open, and the fits unabated up to the last. After death, the brain and skin were found congested, and the bowels somewhat ulcerated.

With these remarks we report the case and comments, the first by Mr. Mackarsie, the second by Dr. Hall.

1. *Case.*—Robert W.—, aged forty, has suffered more or less from epilepsy for the last twenty years; he has been under the care of the most experienced of the faculty in Manchester and elsewhere, without deriving any benefit; he

* Epilepsy; and its Treatment by Tracheotomy; with a Case. By Dr. Marshall Hall and Mr. Mackarsie, of Chesterfield. *Lancet*, October.

has within the last two or three years become much worse, having frequent fits almost every day, seldom passing two days without from two to three attacks; his mind latterly has become much impaired. Some months since I ascertained from his wife all the symptoms, and every minutia connected with the case:—When first attacked, evident symptoms of laryngismus are first observed and heard; he is then violently thrown to the ground, and continues for some time in violent convulsions; but whenever he can *freely inspire*, the fits cease, leaving him in a comatose state for some hours; his face generally is of a dark-brown congested appearance. His appetite is good, and all the secretions perfect, and were it not for the fits, he would enjoy good health.—I recommended, as advised by Dr. Marshall Hall, of London, tracheotomy as holding out a fair chance of great relief, if not of a permanent cure. His friends consented, and on Tuesday, 24th of August, I operated. I found the neck *very* short, the space between the apex of the cricoid cartilage and the upper part of the sternum measuring little more than half an inch. I commenced the operation (in the presence of, and assisted by, two of our best local surgeons,) by making an incision from a little above the apex of the cricoid down to the sternum, through the skin and fascia; on arriving at the sterno-thyroid and hyoid muscles, I found them very prominent; the small vessels in the vicinity much engorged and enlarged, and more numerous than natural, the operation being much impeded by free oozing of blood. On separating the muscles from the mesial line, we found that before the trachea could be reached and cleared, so as to apply the "trachéotome," we had to go to a very considerable depth. After much trouble, we retracted the parts sufficiently to admit the point of the instrument, which answered the purpose most beautifully, and will, I have no doubt, in all cases supersede the older mode of opening with the bistoury.

August 25th.—The patient has passed a comfortable night, a large quantity of mucus having passed through the tube.

26th.—Not so well; the patient has been hot and feverish, and passed a restless night; tongue furred; pulse 100; a large quantity of mucus passing through the tube. No fit.

27th.—Rather better; bowels rather confined; pulse 100, full and hard. Calomel eight grains, scammony powder ten grains. No fit.

28th.—Improving; tongue still furred; mercury with chalk three grains, rhubarb two grains, night and morning; bowels acted freely.

29th to 31st.—Continued better till this afternoon, when violent hæmoptysis took place, but had ceased before I arrived.

September 1st.—Better; wound healing, appetite improved, and altogether in a favorable condition; still no return of the fits. In the evening a violent return of hæmoptysis. I examined the lungs, and found the left lung congested, dull on percussion, and the respiratory murmur feeble. I ordered the left side to be freely leeches, &c.

2d.—He has passed a comfortable night; no return of hæmorrhage; expectorates bloody mucus; wound healthy; dulness on percussion not so marked, respiratory murmur more audible.

3d.—Rather better; still bloody expectoration; ordered twelve more leeches, &c.

4th.—Better; has passed a good night; pulse 90, soft; chest much improved; tongue clean; bowels rather confined; expectoration much lessened, and not at all tinged with blood. Aperient draught.

6th.—Continues better; pulse 75, soft; respiration free; dulness on percussion quite gone; bowels open; tongue clean; appetite improved; in all respects going on now most favorably. *No return of fits.*

He gradually went on improving till the 20th, when he had a severe attack, of bilious vomiting, the irritability of the stomach being very obstinate; but with occasional doses of calomel and opium, with a saline effervescing mixture, and hydrocyanic acid, he in a few days recovered.

28th.—Much improved, complains of weakness, and is much reduced in flesh. I ordered a generous diet.

30th.—To-day much better; walks out, enjoys his food, sleeps well, and is now quite recovered; excepting complaining of slight debility. He states he has not felt so well for many years. *He has had no return of the fits.*

P.S.—The patient had a paralytic stroke three or four years ago, but had quite recovered before the operation.

2. *Comments.*—No one, I think, can read the case of Mr. Mackarsie in the last two numbers of the 'Lancet,' without feeling the most anxious desire to know *what degree* of good is to be expected from the institution of tracheotomy in the treatment of epilepsy. Epilepsy is at once the slightest and the direst of human maladies; it may be so slight as to consist in a momentary vertigo; and it may be so severe as to lead immediately to apoplexy, paralysis, or mania, and ultimately to loss of life or loss of intellect; and there may be every intermediate form and degree. The event which divides the milder from the severer forms of epilepsy, is spasmodic closure of the larynx, or spasmodic laryngismus. This also may be slighter or more complete in different cases.

In the entire absence of laryngismus, spasmodic contraction of the muscles of the neck, inducing compression of the veins, is the cause of the other symptoms; and I have designated this form of epilepsy, the *epilepsia trachealea*. When laryngismus is superadded, I have distinguished the case as *epilepsia laryngea*. Other forms of epilepsy are such as to have suggested the designations, *epilepsia evanescentes*, and *epilepsia syncopalis*.

The first and the last idea connected with the institution of tracheotomy is that of laryngismus. It is in the cases in which this occurs, and in no others, that the operation may prove useful; and the benefit to be derived from it is precisely in proportion to the degree and duration of this event, and of the dyspnoea and respiratory efforts which result from it. It is, in fact, these efforts which add to the previous state of trachelismus their influence in inducing impeded return of venous blood from the head, the cerebrum, and the medulla oblongata; and the consequent loss of consciousness, convulsion, coma, mania, &c.; and the ultimate paralysis, amentia, &c.

It is obvious that tracheotomy *can* have *no* influence on any form of epilepsy not involving laryngismus.

It is equally obvious that *all* that depends on laryngismus in epilepsy *must* be obviated by tracheotomy.

If the case be one of *epilepsia laryngea*, it is reduced by tracheotomy to the form of *epilepsia trachealea*. It might be designated *epilepsia abortiva*.

The great questions now present themselves—How far, with this change in the degree and severity of the epilepsy, are its dire *effects* warded off? How far do the susceptibility and disposition to epilepsy wane away, and the effects already induced subside?

I imagine that the *epilepsia trachealea* can scarcely be attended with danger to life, or even with permanent danger to intellect. These dangers are therefore avoided by tracheotomy, the laryngismus and its effects being superseded, and trachelismus alone at the most remaining.

I have this day seen an epileptic patient, formerly a commercial traveller, who has already lost his faculties to such a degree as to render it necessary to relinquish his employment. The fits continue in spite of every remedy pro-

scribed by various physicians. His memory is daily failing. The workhouse must soon be his doom, unless an effort be made to rescue and save him! He is subject to minor and severer attacks, the former without, the latter with, laryngismus.

Shall I give him the chance and hope afforded by tracheotomy?

One patient died recently in the epileptic coma, whose life, I believe, tracheotomy would have saved.

One patient is a maniac in a lunatic asylum, and another, an idiot in a workhouse, whom, I believe, tracheotomy would have preserved from such calamity.

I leave these suggestions with your readers.

I have suggested, and suggest, the remedy. It is still a mere suggestion. It remains for experience to determine its value—and especially comparatively with the calamities it is proposed to obviate. It is too soon for criticism.

Whenever this suggestion is adopted, I wish the state of the symptoms, and especially of the respiration, in the *epilepsia abortiva*, to be carefully observed and recorded. It is still to be feared that the change will be but the "severer for severe;" but the kindly feelings of our profession will, I trust, lead to a cautious and a hopeful trial of a remedy which *has* accomplished much, and promises more.

I conclude by observing—

1. That no one should hesitate to perform the operation of tracheotomy in cases in which, like that of Mr. Cane, the patient is in danger of his *life* from paralytic laryngismus.

2. That no one should hesitate to perform this operation in cases of *pure* *epilepsia laryngea*; that is, of epilepsy in which *all* the attacks are marked by spasmodic laryngismus, and in which the *intellect* is threatened.

3. That in *no* case in which laryngismus is *not* the *chief* symptom should tracheotomy be contemplated.

4. That in cases in which *other* attacks not involving laryngismus occur, the propriety of, and hope from, tracheotomy, will be precisely *in proportion* to the laryngismus.

5. That in cases in which both kinds of attack occur—that is, both those *with* and those *without* laryngismus—we must expect the former to continue to recur, taking the mitigated form of the latter, notwithstanding the benign influence of the tracheal opening.

In Mr. Mackarsie's case, there was, on Saturday, Oct. 9th, a "slight fit, not, of course, preceded, as formerly, by laryngismus, or followed by coma, but denoted by a little spasm and foam, of very temporary character, and leaving no loss of consciousness;" and during the succeeding week, "four, all of very short duration, none lasting more than a few minutes; whereas, before the operation, the patient used to continue in them and the subsequent coma for several hours." Such events—such *abortive* efforts—are the *proofs*, in fact, of the *influence* of our procedure, though they may be opposed to our ardent and benevolent wishes:

Such events must occur—must therefore be expected. Nay, I think that when the case is *pure* *epilepsia laryngea*, we ought, after the operation, to expect seizures of the modified and *abortive* form, although, in one case—that of Mr. Cane—the patient has, during twenty months, escaped even from this.

In Mr. Mackarsie's case, I shall expect *abortive* attacks—attacks of the severest, laryngeal form, they cannot be. Of what *degree* of severity they may prove, and in what *degree* they may prevent or delay the perfect restoration of the intellectual powers, time alone can determine.

The whole question of the institution of tracheotomy, in cases of the para-

lytic and spasmodic laryngismus of apoplectic and epileptic affections, is one which I beg leave to commit to the serious and *benevolent* consideration of my medical brethren, for the honour of our profession and the relief of suffering humanity.

Let it be remembered that it is *not* for a name—that it is *not* for apoplexy, nor even for epilepsy, that I have suggested tracheotomy, but for their *laryngeal* forms—those forms which involve paralytic or spasmodic laryngismus, consequent dyspnoea, impeded venous congestion, augmented coma, general and violent convulsion, and its effects.

The case must also be of inorganic origin; there must be *hope*. It must be attended with danger to life or intellect; there must be the "dignus vindice nodus." The case must not involve organic and irremediable disease, cause or effect; and it must involve *danger to life or intellect*, that is, "sufficient reason" for the operation.

The ultimate conclusions, then, at which I have hitherto arrived in this matter, are,—That, by *tracheotomy*, the *epilepsia gravior*, or *laryngea*, is at once and infallibly reduced to the *epilepsia mitior*; that the coma, mania, and death, the immediate results of attacks of the former, are prevented; that the remoter effects, chiefly amentia, of former attacks, are mitigated, perhaps entirely removed; and that the attacks of *epilepsia mitior* may, in the absence of the severer attacks, and of the injury and susceptibility of the nervous centres left by them, gradually wane away!

In one word, the *epilepsia gravior*, or *laryngea*, is converted, by *tracheotomy*, into the *epilepsia mitior*.

5. *The Pathology of Epilepsy.**—What is epilepsy? is a question to which the answer, as it appears to us, is very different to that given by Dr. Marshall Hall and other authorities on the subject. It is, we would say, a state of *general* disturbance, in which nervous irritation, or any mere *local* affection, has no *essential* part, and of which the only constant characteristic is unequivocal *depression* of the true vital powers—depression most marked in the convulsion itself.

What, then, is epilepsy? In order to obtain the answer, let us interrogate successively the temperament, the attack, and the pathology of the malady.

The Epileptic Temperament.—In lunatic asylums, epileptics are classed with demented and imbecile patients; and not only classed but confounded with them. They are, in fact, the most miserable of that miserable company. They are wanting in vital heat, and for this reason they love to bask in the sun, to huddle around the fire, or to crouch along the pipes of hot water which warm the cells and corridors. Their hands are cold and clammy, their pulse weak and miserable, their complexion pale and sallow, their countenance languid and dejected, their flesh flabby and often wasted, their little strength easily spent, and when spent slowly recovered. Often, also, they exhibit signs of scrofula, of syphilis, or of mercurial abuse.

The mental are in strict conformity with the bodily characteristics. Sometimes, indeed, the mind may be endowed with a more than ordinary share of genius and talent, but in such cases the fits occur in the state of weariness and exhaustion following the periods of excitement, and not in these periods. Often the mind is bewildered and blighted with insanity, but in these cases the fits invariably alternate with the paroxysms, and coincide with the intervals of collapse. This, indeed, follows from the sequel, for while the fits tend to become more and more severe and frequent as the

* On the Pathology of Epilepsy. By Charles Bland Radcliffe, M.D. Lancet, Oct. 30.

malady progresses, the indications of genius and talent, and the delusions of insanity, become feebler and feebler, until at length the condition is reduced to a pitiful, convulsed fatuousness, from which no single ray of the divine principle beams forth. This picture is dark, but not darker than reality. Indeed, this one fact—that epilepsy, without losing any of its convulsive character, invariably tends to merge in fatuity—is of itself sufficient to show that mental or bodily energy and activity form no part of the epileptic temperament.

The Epileptic Attack.—In order to a clear conception of the epileptic attack, it is desirable to endeavour to isolate its phenomena from those which usher in and succeed the true fit.

(a.) Upon the eve of a fit, epileptics, for the most part, sit or move about in a moping or listless manner, and exhibit, in various undefinable ways, a decided lack of vital energy. They are silent and moody, or speak only to complain of creeping and chilly feelings, of troublesome shudderings, or of faintness and sickness. The countenance is rarely otherwise than pale and sad; often it is dusky, and bedewed with cold and clammy perspiration; and in confirmed and old cases there is a pinched and anxious expression, which is not readily mistaken when once seen. The respiration is disturbed, and frequently interrupted with sighs; and the pulse is weak, irregular, and often slower than natural. These symptoms are more decided when the malady is of long continuance, and especially in such cases as are found in the wards of lunatic asylums and workhouses; but they are always present in a greater or less degree. In a word, there are always, on the eve of a fit, indications of failing energy and impending prostration, and never the reverse.

(b.) The fit itself is very variable in its characters, and especially in the manner of its onset. In the slightest forms the patient pauses suddenly in the midst of anything he may happen to be doing or saying at the time, his countenance flushes or darkens, his expression is fixed and confused, the veins of the neck and temple are more clearly defined, and there are spasmodic twitchings in the neck, and hands, and elsewhere. After a moment or two these symptoms pass away without leaving any trace in the memory, and thus we perceive that the mental faculties had been suspended for the time. The attack, indeed, is so slight and transitory that it might have passed unnoticed, if attention had not been accidentally directed to it.

In other and more ordinary cases, the convulsions are ushered in by a cry or scream, and the sufferer is at once prostrated on the ground. Instead of a few passing starts in the hands or neck, the whole frame is seized with spasm, the features become horridly drawn, the face is twisted to one side, the eyes seem as if about to start from the lids, the tongue is protruded and mangled between the teeth, the mouth is choked with bloody foam, and, to crown the whole, there is a seeming agony of suffocation—seeming, because the sense of suffering is mercifully absent. The face and neck soon become greatly swollen and discoloured from distension of the veins. The pulse is weak and depressed, and instead of becoming full and excited, as might be expected from the violence of the struggle, it fails more and more, until at last it is scarcely, or not at all, perceptible. The heart acts tumultuously, but propels little or no blood into the arteries, as is clearly proved by the condition of the pulse. Now and then, also, there is a throbbing movement in the root of the neck during the height of the fit, which movement seems connected with the vessels, and of which we shall have to speak presently.

In other cases the attack of epilepsy is ushered in by signs which indicate the temporary suspension of the heart's action; and here, though the fits may be every whit as violent, and consciousness and sensibility as completely

paralysed, the countenance and neck remain pale, or at most livid, from beginning to end, without any of the venous engorgement which characterises the fit in its most ordinary forms. Cases like these are by no means unfrequent, and are most generally to be met with in individuals whose mental and bodily powers are completely broken down, as in the miserable people who are at the same time demented and epileptic.

(c.) For some time after the violence of the struggle is over, the limbs are shaken by passing quivers, and the breathings interrupted by sobs or gasps; but at length these residuary troubles pass off, and the patient lies still and exhausted. After some time, and many sighs, the lungs gradually resume their steady action; and with this change, and in consequence of it, the venous congestion of the head and neck subsides, the colour, warmth, and pulse return, and the brain being relieved from the load which had pressed upon it, (if such there were,) and once more supplied with red blood, the patient at length wakes to an obscure and troubled consciousness. All these changes take place slowly, and usually several minutes elapse before recovery; and sometimes, but not very frequently, the return of consciousness is delayed by the continuance of a quasi-comatose condition of the vessels of the brain. The most common result, however, is that in which the vessels throughout are in a syncopal, rather than in a comatose condition; and in which the patient wakes before the circulation is fairly re-established.

The Pathology of Epilepsy.—What, then, is the interpretation of this complicated and difficult subject?

(a.) Interrogating the *vascular system*, all the symptoms would seem to show a want of proper activity. Before, and in the intervals between the fits, everything indicates a directly opposite condition to plethora; and the bluish or sallow cast of the skin, and the manifest congestion of the venous trunks, speak sufficiently as to the nature of any vascular fulness, if such exist. On the eve of the fit, the pulse is weak, irregular, and slow, the respiration disturbed and interrupted with sighs, the skin cool, clammy, and pale. In the actual paroxysm, the pulse fails more and more, until at last it ceases to be perceptible; and (as is evident from this state of things) the heart beats inefficiently, though tumultuously and with considerable violence. And after the fit the patient is spent and almost pulseless. There are many cases of epilepsy also, and these as violent as any, in which the fit is ushered in by syncope, and in which, for the time, the movements of the blood are wholly or in great measure suspended. Nor is the occasional throbbing in the hollow of the neck, immediately above the sternum, any real objection to this view; for occurring, as it does, when the pulse at the wrist and elsewhere is almost or altogether silent, it cannot be indicative of increased arterial action in the part. What it really is, is more difficult to say. It may be produced by the mere shaking or dragging of the vessels of the part by the convulsively acting heart; or by regurgitant pulsation in the large venous roots—there being at the time quite sufficient engorgement in these vessels to cause some separation in the curtains of the right auriculo-ventricular opening. In respect of this latter supposition, however, it has been objected by Dr. Russell Reynolds that there are no stethoscopic signs of auriculo-ventricular patency, and no pulse in the external-jugular—both of which proofs, according to him, we ought to have, if the idea were tenable. But to each objection there is an answer. To the first may be urged the insuperable difficulty of using a stethoscope when the body is writhing to and fro in convulsions, so as to detect the vague signs in question amidst the rubbing sounds occasioned by the movements of the thoracic muscles. To the second, it may be stated, that the valve at the mouth of the external jugular *might* prevent pulsation in that vessel, even

when marked pulsation existed in the large venous roots, which roots contain no valves to shut out the impulse of the heart. It may be stated also, that the external jugular does not throb in every case of tricuspid patency, but only in those cases in which the malady is of long standing, and the secondary venous engorgement proportionately great. Any way, this phenomenon presents no insuperable difficulty; for whether it be accounted for in the manner just supposed, or by the dragging or shaking of the disturbed heart,* the state of the pulse, and of the system generally, prevents us from ascribing it to increased arterial action; and hence we may discard this seeming objection, and adopt the conclusion, that the circulation, in the fits, and in the intervals between the fits, is clearly and very considerably wanting in normal activity.

(*b.*) The condition of the *nervous system*, as might be expected, seems to be in strict accordance with that of the vascular system. In the *brain*, the marks of wanting vitality are very unmistakeable. In the intervals between the fits, the blight which eventually obliterates the mental faculties is seen at work in one or other of its destructive stages. On the eve of the fit, the patient is rarely otherwise than silent, sad, moody, and still; in the fit, he is always bereft of sensibility, consciousness, and volition; and for some time afterwards he is stupid, confused, and exhausted. When epilepsy is associated with active mental capabilities, or with insanity, the fits invariably occur in the intervals of collapse or prostration, and not in the periods of afflatus, or in the maniacal paroxysm. It must, however, be understood, that the complication with insanity is not in any way a proof of hyper-mental activity, for the late researches of Dr. Davey and Dr. Henry Monro go to show (and in my opinion to prove) that insanity in every form is due to a direct and positive want of cerebral and mental power. The appearances after death, also, are in keeping with all these considerations, for in confirmed cases the brain invariably presents signs of degeneracy and want of tone,—such as pallor, atrophy, softening, and dropsical effusions. These appearances, it is true, are common to dementia and fatuity; but this very fact is an argument in favour of their connection with the malady in question. It is an argument, because the natural termination of epilepsy is in dementia and fatuity. It is an argument, because there is a close, if not inseparable, connection between dementia and convulsion—a connection, I say, for if epileptic symptoms are absent, there are sure to be palsied shakings, or cramps, or spasms of some kind or other. Whatever the true appearances after death, however, it is quite certain that they are not indicative of inflammatory or active changes, for though these are not unfrequent, we conclude them to be accidental, inasmuch as they are both more frequent, and far more confirmed in persons who, during life, had exhibited no convulsive symptoms whatever,—as in those who had suffered from ordinary insanity. We may conclude, then, that all the evidence upon this subject goes to show a positive lack of cerebral activity—in the attack as well as in the temperament.

It is the same, likewise, with the *medulla oblongata*—if the state of the respiration and pulse afford any criterion. Thus: on the eve of the fit, the respiration is disturbed and interrupted with sighs; the pulse wanting in vigour; the skin pale and dusky—a fact which sufficiently shows that the

* My brother, Mr. J. N. Radcliffe, of Leeds, writing to me recently on this subject, suggests that this throbbing may be due not so much to the contents as to the coats of the vessels concerned. He thinks it an evidence of convulsion in these coats, which convulsion is a companion-phenomenon to that contraction of the intestines, bladder, or seminal vesicles, which occasionally causes the expulsion of flatus, feces, urine, or semen. He thinks it a sign that the epileptic convulsion has extended from the voluntary to the involuntary muscles.

blood is imperfectly aerated; while in the paroxysm, the symptoms are those of asphyxia or syncope. The respiration and circulation are, in fact, upon the verge of extinction, and hence it seems necessary to conclude that the functional changes of the medulla oblongata are wanting, at this particular time, in their proper and peculiar activity. Nay, it must so happen; for these functions, like those of every other organ in the body, must fail as the circulatory and respiratory changes flag.

It is the same with the *spinal cord*, if we may judge of this organ apart from theory. We might argue this to be the case from the condition of the respiration and circulation, for the blame of the weakened discharge of these functions may be partly ascribed to imperfect action in excito-motory nerves. We might argue, also, in favour of this conclusion from the remarkable want of muscular tone, which is, in our opinion, one of the most marked peculiarities of the epileptic—for it is supposed to be one function of the excito-motory nerves to impart this tone. But we must argue in favour of this conclusion from the condition of the circulation and respiration, which condition must entail comparative inactivity in the spinal, as well as in the cervical and cephalic portions of the same nervous axis.

This last argument also applies to the *sympathetic system*, and necessitates a corresponding state of inactivity in it; and thus it would seem that the brain, medulla oblongata, spinal cord, and sympathetic ganglia, are all in a far less active condition than in health, instead of being (as is supposed) in an irritated state, in which an excessive amount of motive nervous influence is given off.

3. The condition of the *muscular system* agrees with that of the vascular and nervous systems, as is evident in the remarkable inadequacy to exertion, and in the slowness with which the system rallies after fatigue, as well as in the pallid and soft condition of the muscles on dissection, which condition contrasts very greatly with the normal redness and consistency.

4. Viewed in this manner, therefore, the vascular and nervous systems of the epileptic, as well as the mobile structures in which the convulsive phenomena are manifested, would seem to suffer from unequivocal depression, which depression is most marked in the fit itself.

5. On further examination, it would appear that epilepsy is not necessarily connected with *local disorder*. In the brain and spinal cord all manner of appearances have been noted, but none of these are *constant*, and therefore none are essential. Esquirol, indeed, estimates the researches of morbid anatomists at their right value, and his words require no comment: "De toutes ces recherches," (he asks,) "particulièrement de celles du Bonnet, de Morgagni, Bailie, Greding, Mechell, Wenzell, que pouvons nous conclure? Rien, si ce n'est que ces mêmes altérations ont lieu chez des individus qui ne sont pas épileptiques, comme Wepper et Lorry l'ont prouvé. Avouons franchement, que les travaux de l'anatomie pathologique n'ont jusqu'ici répandu aucune lumière sur le siège immédiate de l'épilepsie." Disease of the brain or spinal cord, like disease of the uterus, or some other important viscus, is not unfrequently associated with epilepsy, and when so associated may sap the powers of the system; but, except in this way, it is difficult to suppose it to have part in the matter: any way, the premises go to show that anything which would excite the system would be likely to avert and not to induce the fits.

There is, we conceive, no more reason to consider epilepsy a *nervous disorder*, than to consider phthisis a pulmonary disorder; for though the nervous system and lungs in these cases are much deranged, and this derangement reacts most prejudicially upon the interests of the system at large, yet there is abundant proof that the local is only part and parcel of a general

disorder, essentially similar in all respects. The nervous and vascular systems, in fact, reciprocally sympathise with, and participate in, each other's trouble, and there is no more reason to assign epilepsy to the one than to the other. Both are oppressed and prostrated, and both are removed as far as possible from that excited state which is usually designated under the term *irritation*.

Nor does it appear that any exemption can be accorded in favour of *laryngismus* and *trachelismus*, for, do what we will, we can only regard these modes of convulsion as *symptoms*. That they are not *essential* to the existence of the malady, appears in the fact that they are *often absent*. It appears, also, in the relation they hold to the fit when present. Now the only reason, so far as we can see, why more importance should be attached to laryngismus and trachelismus than to those twitchings in the limbs which occur simultaneously with them, is that the cervical spasms occasion serious interruption to the return of the blood from the head, either directly by pressure on the veins, or indirectly by asphyxial closure of the glottis, or by both ways at once: and hence this effect of the spasm may be taken as a means of testing the question at issue. What, then, is the relationship of this cranio-cervical congestion to the convulsion or insensibility of the fit? Is there any *necessary and indissoluble* connection? With regard to the convulsion, the answer must be in the negative, for if otherwise, how is it that the laryngismus and trachelismus, and the convulsive phenomena in the limbs, *precede* the congestion? How is it that the fit breaks off when the venous engorgement is at its height? In other words, how is it that the fit begins and ends too soon? With regard to the insensibility, also, the answer must be equally in the negative, for there are numbers of cases in which the insensibility (at the beginning at least) is of a syncopal and not of a comatose character.

Undoubtedly the insensibility is often, if not generally, of a comatose character, and in these cases we refer to the laryngismus and trachelismus for the cause. Undoubtedly, also, this comatose state reacts most prejudicially upon the violence of the fit, by deepening that prostration of the proper vital powers which is the fundamental cause of the convulsion. We thus attach very high importance to the phenomena upon which Dr. Marshall Hall has so much insisted of late; but we cannot regard them as *essential* to the malady. Indeed, Dr. Hall himself does not regard them in this light.

And thus we discard any *local* disorder as the cause of epilepsy.

6. With respect to other causes, or supposed causes, of epilepsy, it only remains to add that they are in accordance with the foregoing considerations. Thus: the seizure is referable, not to joy, but to fright and fear—not to the temperate indulgence of the appetite, but to the exhaustion consequent upon excess and abuse—not to good cheer, but to hunger and privation. It happens at night rather than in the day. There is much obscurity in these matters, from the careless manner in which the most incongruous agencies are grouped together as exercising the same influence upon the system, and much obscurity is inevitable from the difficulty of analysing the complex knot which ties together the several influences acting upon the body; but still there is sufficient reason to believe, (if only a moderate share of patience and attention be given to the subject,) that the extra-corporeal causes of the fit are of an exhausting, and not of an exciting character.

7. The conclusion which follows upon these several facts and considerations is, that there is in the epileptic an unequivocal prostration of the true vital powers, and that this prostration is most marked in the fit itself. The conclusion, indeed, is in harmony with our published views upon muscular physiology and pathology, which views lead us to believe *that muscular contraction is not an active state effected through the instrumentality of nervous*

or other stimuli, but a passive or quasi-passive change, resulting from the ordinary molecular attraction of the tissue upon the withdrawal of these stimuli.

7. *On Early Paracentesis Thoracis in Pleuritic Effusions.**—The advantages of this practice are yet little known and admitted, and it is with much satisfaction therefore that we record the following particulars:—

1. Dr. Hamilton Roe's communications to the 'Lancet' are virtually the reproduction of the paper read before the Medical and Chirurgical Society in 1849, the abstract of which is to be found in vol. IX, p. 242; and to this abstract, therefore, and to that of a former paper, read before the same Society in 1844, and reported in vol. I, p. 24, we refer our readers who are not acquainted with the valuable opinions of this writer.

2. Dr. Bowditch's researches tally completely with those of Dr. Hamilton Roe, as the following summary will show. He thus reviews his cases and the main facts in connection with them:—

1. Three out of the eight patients were cured of the pleuritic effusion, and the operation had an important influence towards that end.†

2. Three were materially relieved in their rational and physical signs.

* On the Early Employment of Paracentesis Thoracis in Pleuritic Effusions. By (1.) Dr. Hamilton Roe; (2.) Dr. Bowditch, (U. S.); and (3.) Dr. Beyran, of Constantinople. 1. The Lancet, Nov. 1851. 2. American Journal of Medical Science, April 1852; and 3. L'Union Médicale.

† The following passage from Dr. H. Roe's first paper, in the 'Medico-Chirurgical Transactions,' vol. xxvii, p. 33, contains the results which he had obtained at that time:

"From the perusal of these particulars it will appear evident that I have not made any overstatement in saying that this operation (paracentesis thoracis) is not more dangerous than any other which is performed upon the human body, and that the evil consequences supposed to attend it are imaginary rather than real, inasmuch as it not only was not fatal in one of these 24 cases, but did not cause in any of them the smallest permanent inconvenience. In every instance where it was employed at an *early stage* of empyema, or inflammatory hydrothorax, it was successful, and failed to cure in those only when it had been long deferred. The total mortality proportionate to the whole number of cases, viz., 6 in 24, is less than that which occurs after most operations, and yet is more than can fairly be laid to the charge of paracentesis thoracis, as one of the deaths was from phthisis, another from pneumothorax, and a third from mechanical hydrothorax, for none of which diseases have I advocated the operation as a curative measure. Deducting these three cases the mortality will be 3 deaths out of 21 cases. Had I been desirous to present the strongest case in favour of paracentesis I might fairly have excluded two who were in a hopeless condition when the operation was performed; but rather than exclude any case I prefer to give every one which came under my observation, in order that my professional brethren may see that I report the successful and unsuccessful cases with equal fidelity, and may have data on which to form their own judgment as to the propriety of reviving this very ancient remedy, one which can be traced up to Hippocrates. The cases will show that the success of the operation was directly in proportion to the shortness of the time which intervened between the accumulation of the fluid and the performance of the operation, and that when it was unsuccessful the chief cause of its failure was its being postponed until too late a period. The very fact that, with the exception of one case of pneumothorax, death occurred only where the effusion had been of very long standing, suggests the opinion that the failure of the operation may be referred to the duration of the disease, the contracted state of the lung, and other changes which the thoracic viscera are known to undergo from the long-continued pressure of the effused fluid, and leads to the conclusion that we ought not unnecessarily to delay the operation a single day."

3. Two were not relieved, for no fluid could be obtained.

4. No one suffered more than slight inconvenience from the puncture.

5. There were twenty-seven punctures, the largest number in any one case having been five. In two, there was only one puncture.

In one case, three punctures were made in as many minutes.

Symptoms subsequent on the puncture.—After no one of the twenty-seven operations did any serious or unpleasant symptom occur. Some complained more than others of the pain of the puncture. But usually this subsided entirely, as soon as the instrument was fairly introduced, and firmly held by an assistant. Towards the end of the operation, a severe pain was at times felt, or a sense of distension, of stricture, or of dragging; or, what was still more common, a peculiar, indescribable feeling of distress in the affected side. One patient compared it to faintness, and yet said she did not feel faint. *I always desisted when any severe symptom appeared.* There was sometimes a slight soreness about the part for a day or two, but never was there any suppuration or ulceration, and the wound closed instantly on the withdrawal of the canula. The results immediately following any successful puncture were very gratifying. In all, there was a *relief to the sense of oppression*, to the dyspnoea, and to the pain, when it existed. An ability to lie on both sides was gained by some often immediately, in others after 24 or 48 hours. A perceptible increase of physical power was manifested by all. They were able to move about with much more freedom. The men usually were able to put on their coats with less labour, and some seemed to do so even with alacrity, so much comfort in breathing did they experience in comparison with the dyspnoea felt a few minutes previously. In addition to these evident signs, there was an exhilarated mental condition. The mind, as well as the lung, seemed relieved of an intense weight, and displayed itself, among the more mirthful of our patients, in somewhat wild facetiousness and joke—while those of a more quiet temperament showed their delight of mind in a more sober style.

The *pulse* usually remained after the operation much as before. In one, who recovered, it was accelerated for some time after the other symptoms had improved. It was noticed as fuller in one, immediately after the operation, it having been feeble previously. Generally, however, it lessened in frequency after a few days, even if it was destined to rise subsequently on a recurrence of the effusion.

The *cough* was augmented, in most cases, for a few days after the operation. A patient who experienced the greatest relief, and who for a week had had no cough, was seized with one immediately after the fluid commenced flowing; and it was quite severe for about a week, with expectoration of nearly a gill the first day. Both symptoms ceased almost entirely after the lapse of time above named.

The *digestive functions* were usually improved. The appetite became better, or it commenced after there had been complete anorexia. In one patient, there was pain in the abdomen for two days subsequent, and, as it was combined with tenderness and tympanitis, I feared peritonitis. These symptoms disappeared soon after the administration of a cathartic.

The physical signs changed more slowly. In two cases, there was an evident improvement in the results of percussion immediately after the operation; in four, I noted a diminution of dulness towards the upper parts of the chest, on the next day. In two, there was a decided improvement throughout the lung in twenty-four hours. Usually, however, the lower parts were a long time in recovering their healthy tone. This I attributed first, to the fact that the lung, when much compressed, requires considerable time before it can be distended; and second, that commonly there is some thick false membrane

covering the layers of the pleura, which must become attenuated before a healthy sound can be produced.

Inspection showed a change in the form of the thorax immediately after the operation in two cases. Commonly, this change took place in a much more gradual manner. There was a perfect restoration of the shape in one case.

A *rubbing sound*, observed in four cases, was noticed in the first twenty-four hours in two, and on the third day in the two others. It commenced usually over the breast, and thence gradually extended. I have heard it all over the lung, and, in the majority of the cases, it was quite distinct.

Ægophony.—The time of disappearance of this sign was noticed in only one case. In that, it had gone before the third day.

Once I found a fine crepitous r le existing in a lung, which had been relieved of compression forty-eight hours before. I presume it was owing to the gradual expansion of the compressed lung, because I could not hear it, save after a long breath, and there were no symptoms of pneumonia. *In this same individual, the r le that had existed at the apex of the other lung, and which I had regarded as probably indicating the existence of tubercles, disappeared within a week after the removal of the fluid, leaving only an indistinct crumpling on coughing, and forced inspiration.*

One very important sign was quite manifest in two of our cases, viz., *the falling back of the heart*, when it had been dislocated by a large effusion into the left chest. This I observed twice, immediately after the operation, and possibly the same result would have been noticed in others, had I made a sufficiently accurate examination. In one of these cases, the patient perceived it, and said that he felt relieved of the soreness and thumping that had been about the right nipple, previously to the operation. But in all the cases, where there was such dislocation, the operation sooner or later removed it: the organ being longer out of place where pus was effused, than when simple serous fluid was formed.

The *respiratory murmur* was in all the cases a long time before its entire restoration, although a very decided change was produced in a few days. In one case only has this been perfect, after many months of illness. Two others may be in the category, but they are still under treatment. The character of the fluid in the chest has apparently some influence upon the result, as the following table will indicate. In four cases, two purulent, two not so, we have

	Respiration tolerably clear in.	Respiration quite clear in.
Purulent cases	—	8 months or never.
Non-purulent cases	24 hours and 3 days.	—

The reason for this difference is probably the existence of the thick membrane before alluded to.

Quantity and quality of the fluid removed, and their influence on the result. The quantity varied from ℥iv to ℥xli. The medium of six operations was ℥xxiv. Although the removal of a large quantity (30 or 40 oz.) gave very decided and prompt relief, as much apparent comfort was at times experienced when a smaller quantity (9 oz.) was removed.

The quality of the fluid was pure pus in two patients. Of these, one is now wholly well. The other is tuberculous. In four it was a thin, yellow

fluid, which coagulated on standing. Of these one recovered; one has lost all traces of effusion, but she has tuberculous lungs. A third, having cardiac disease, died, but the effusion never returned to so great amount after the operation, and life was prolonged by the operation. In the fourth, there was probably coagulation of the fluid in the chest, and it could not be drawn off. My inference from these facts is, that the quality of the fluid cannot afford us any indication as to the prognosis, save that when a purulent fluid occurs, a longer time is occupied for cure, as we have previously stated.

Finally a bloody fluid was found in one. He did not recover.

Our cases are so few that we can give but little positive information upon the effects, produced by the age of the patient and the duration of the disease, upon the ultimate result of the operation.

In six cases, the average age was thirty-three and one third years; the oldest, fifty-six; youngest, twenty-eight.

Great age has been generally considered unfavorable for the operation of paracentesis. Of three of my cases, in which one got wholly well, and the others are rapidly improving, though still under treatment, the average age is twenty-nine and one third, or four years less than the average. Of the three other cases, none of which have been *permanently* improved, the average age is forty-two, or more by nine and a half years than the average.

The length of time the disease has lasted is of as much importance perhaps as the age of the patient. The respective durations of the disease previous to the operation in the three cases above named, in the first category, were six weeks, two weeks, and ten days; average, twenty-two days.

In the last three, one had had dyspnoea seven years, and had grown much worse during the previous seven months. In the next, the patient had been ill ten weeks of pleurisy, and had had hæmoptysis. Finally, in the third patient, the disease had lasted for three months.

As far as our cases go, therefore, they prove that youthfulness on the part of the patient, and early puncture, give more favorable results than the contrary conditions.

3. Dr. Beyran, also, is in favour of the early operation; and in support of his views he relates the particulars of three cases occurring at Constantinople in the early part of last year, two of which were successful.

Case i.—Margos, aged 28, a sawyer, exposed to alternations of heat and cold, was seized with pleurisy on February 3d, 1851. On the 9th, he was admitted into hospital, with signs of effusion in the right pleural sac. On the 11th, the respiration becoming more and more impeded, Dr. Beyran punctured the thorax between the seventh and eighth ribs, by means of the trocar of M. Reyhard. Six and a half pints of transparent serous fluid escaped. A piece of diachylon plaster and a bandage were applied. After the operation, he gradually recovered; and was discharged cured on February 26th; and has since remained well.

Case ii.—Serpoulie, aged 32, a washerwoman, had been ailing for some days, with a pain in the left side of the chest, when she accidentally burnt her legs, on April 13th, and was brought to the hospital. The next day, the most urgent symptoms were those of extensive effusion into the left pleura. Blisters and diuretics were used, without effect. On the 16th, as the patient was threatened with suffocation, Dr. Beyran punctured the thorax. The patient being fat, an incision was made first down to the ribs, until fluctuation was distinctly felt with the finger; the bistoury was then introduced, and five pints of yellow transparent fluid were removed. The flow was then suddenly arrested to prevent the access of air; plasters, graduated compresses, and a

bandage were applied. In half an hour, the stroke-sound was normal, except at the lower part; and the respiratory murmur could be heard. The patient was calm. The next day she was much better; and on August 18 she left the hospital completely recovered.

Case III.—Dr. Beyran was called in consultation in the case of Mlle. M. Narisen, who was seized, on December 2, with pleurisy of the right side. He saw her on the 12th, when he diagnosed effusion into the right pleural sac. The patient also had tenderness in the hypochondria and epigastrium, with nausea and vomiting. Dr. Beyran recommended paracentesis; but could not prevail on the other medical attendants to have it performed until several days after. It was then performed, when suffocation was imminent, by puncture with a bistoury. The patient appeared relieved for a time; but died exhausted in eight hours after the operation. Before her death, she complained of much pain in the region of the stomach.

8. *Phthisis.*—Dr. Cotton's work is "not intended to introduce any newly-discovered cure for consumption," or to advance any speculative theory as to the origin of tubercular diseases, but to present a practical exposition of phthisis, derived from personal observation. It is the old story well told, and not without such variations as will well repay the trouble of listening to it again. The following remarks upon the value of the present panacea, cod-liver oil, as compared with other oils, form one of the many passages which we had marked for reference:—

Cod-liver Oil.—Whether we regard this medicine as a means of arresting, or simply of palliating consumption, it undoubtedly ranks higher than any other with which we are acquainted. Some prejudice, however, against its employment still exists, based upon a belief that its good effects are not lasting; and that it fattens, without permanently improving the health or adding to the strength. It certainly does so in a considerable number of cases; but, on the other hand, the examples of its successful employment are so numerous and unquestionable, that we have, I think, only to bear in mind the character of the disease we are dealing with, and how utterly powerless against it are the majority of medicinal agents, to be forced to the admission that the use of cod-liver oil was the commencement of a new and most important era in the treatment of consumption. So highly do I esteem this medicine, that I venture to declare my conviction that, where it has not been administered, all has not been done that might and should have been.

We have in this medicine a remarkable illustration of the advantage of *experiment* in the application of remedies, even in direct opposition to theoretical views, since no one could anticipate that an unnitrogenized material possessing only in a very small degree any active ingredient, could have such a decided effect upon the most obstinate morbid condition with which we are acquainted. The very composition of the oil would afford, indeed, to many persons, *a priori* reasons against its employment, as we have already seen that the softening or further degeneration of tubercle essentially consists of its conversion into fatty matter, which might be expected rather to be promoted than otherwise by the introduction into the system of so large a quantity of oil. Experience, however, tells us that during the process of softening cod-liver oil is particularly useful;—an interesting point in relation to pathology,

* The Nature, Symptoms, and Treatment of Consumption; being the Essay to which the Fothergillian Gold Medal of the Medical Society of London was awarded. By Richard Payne Cotton, M.D. Churchill, 1852. 8vo.

as corroborative of the original statement of Dr. Quain, that fatty degeneration of animal tissues is not a simple error of nutrition, but a *physical* change in the part itself depending upon diminished vitality.

There are several kinds of cod-liver oil, each differing from the other in purity, colour, and flavour; but none should be employed which is not clear, pale, and, as nearly as possible, tasteless: the dark-coloured and impure oils, which were at first thought superior to the others, are unfit for use, as they cannot be taken for a sufficient length of time, without producing disgust and destroying the appetite, which is very seldom the case with the purer varieties.

The great object on first giving it should be to avoid nausea, and this is in general easily accomplished, by commencing with a small quantity. A teaspoonful twice daily is sufficient to begin with, and this may be increased, according to circumstances, until it reaches as much as from one to two table-spoonful at each dose; by proceeding gradually in this way, the stomach becomes the sooner reconciled to its use, and the more likely to endure its continuance. Many persons recommend it to be taken in much larger doses, but I have usually found that these disorder the function of digestion, and impair the appetite; whilst every good which the remedy can effect seems to result equally from the quantity I have named. It is very seldom that the oil causes sickness, and if once the dislike to its oiliness and flavour be overcome, it rather increases than otherwise both the appetite and the digestion: indeed, in many instances, it will remain upon the stomach at a time when nearly every kind of food is rejected. It should be taken midway between meals; and in a vehicle the most agreeable to the patient: after many experiments upon this point, I have found that nothing answers better than new milk or some light wine, but there is scarcely anything with which it may not be given. In the few cases where it really disagrees with the stomach, there are several ways in which this may be counteracted; and if one should fail, another may succeed. The addition of hydrocyanic acid or creasote is perhaps the most frequently effective; but a light bitter, such as calumba, chiryta, or cascarrilla, often answers the purpose. The unpleasant odour, as well as the oiliness, may be completely disguised by making it into an emulsion by means of mucilage or liquor potassæ; but such a combination, although perhaps now and then necessary, on account of the sickness which is otherwise occasioned, is, I have reason to think, far less beneficial than the pure oil.

Cod-liver oil is equally applicable to every period of phthisis—at its commencement, as in its final stage,—and is never contraindicated, except perhaps when there is severe hæmoptysis or diarrhœa, when, as a matter of precaution, and to afford scope for other remedies, it is just as well to suspend its use. It has been thought in some cases to produce diarrhœa, but this, I believe, is never the case unless the oil is impure, or has become rancid; and I have many times proved its harmlessness with respect to hæmoptysis, by continuing it in union with appropriate styptics, when this symptom has occurred; the result being quite as successful as if it had been omitted. Pulmonary congestion has been said to follow its use, but I have never seen any grounds for such a conclusion. The perspirations are never increased by it; and the more severe the cough, the greater is the necessity for giving it, since, in addition to other qualities, it often proves an excellent cough medicine.

Many persons cannot take the oil except in a separate form; but I am convinced that its value is much augmented when it can be combined with some preparation of iron, or with one of the vegetable tonics. For this purpose, nothing is better than the *syrupus ferri iodidi*, the *vinum ferri*, and the *mistura ferri co.*; or *cinchona*, *quina*, *cascarrilla*, or *calumba*. When the appetite

is defective, or there are dyspeptic symptoms, the latter class of remedies is the most useful; steel being better adapted to cases of simple debility coupled with anæmia.

It is often a good plan to vary the mode of administering the oil. When it has been taken alone, or in conjunction with some other medicine, for a length of time, and is beginning either to lose some of its good effects, or to disagree with the stomach, a tonic may be given in the early part of the day, and a full dose of the oil a few hours subsequently; or the oil may be temporarily discontinued, and its place supplied by one of the medicines just now alluded to. Changes of this kind often, as it were, renew the efficacy of the remedy, and in many instances seem even to increase it.

To ensure the full effect of cod-liver oil, a long trial is essential; and much of the disappointment it has occasioned is probably owing to this condition not having been attended to. It should certainly not be abandoned under, at least, five or six weeks; and, as a general rule, the longer it is employed, the greater is the chance of its success. I have several hospital patients who have been taking it for years, and who could not be induced to discontinue it.

Dr. Cotton then subjoins a table of 100 cases, selected from many others upon no other grounds than the completeness of their history, and from this table he gathers the following particulars:

Thirty-one patients were *greatly improved*; twenty-one of these were in the first stage; six in the second stage, and four in the third stage. Of those in the first stage, five entirely regained their health, and, were it not for the chance of a relapse, might be fairly said to have been cured; nine resumed work, enjoying a complete arrest of their disease; and seven failed to report themselves finally at the hospital. Of the six in the second stage, three had their pulmonary disease checked, and gained sufficient strength to resume their several pursuits; whilst the remaining three ceased hospital attendance before their cases were completely noted. Of the four in the last stage, three were able to return to their employment, and one, although unfit for exertion, seemed to enjoy tolerable health.

Twenty-six patients were *moderately improved*. Of these, eighteen were in the first stage; four in the second stage; and four in the third stage. Of those in the first stage, seven gained in strength, and were able to return with more or less success to their occupations; whilst eleven discontinued their attendance without finally reporting themselves. Of the four who were in the second stage, one had the pulmonary disease arrested, and the general health considerably improved; and three enjoyed a respite from some of their most troublesome symptoms, and were supposed to have resumed work. Of the four who were still more advanced in their disease, two improved sufficiently to attend to their domestic duties; and two were also supposed to have done so, but were last sight of.

In forty-three cases, however, *no improvement* was observed; or the benefit some of them might have derived was inconsiderable and transient. These were also in various stages of the disease. Eleven were known to have died; many were obviously becoming worse when last observed; and several ceased attending at the hospital.

It is to be feared that, in many instances, the *improvement* which occurred was not permanent; but upon this point it is impossible to form a correct opinion, the greater number of the patients having been lost sight of. This very circumstance, however, is somewhat in favour of the benefit having been, very frequently, enduring, since all the cases date as far back as three years,

and it may be assumed that many would have returned to the hospital had it been necessary. A few have again presented themselves for treatment, some of whom were, a second time, more or less restored to health, but two, if not three of them are known to have died. There are, however, five, in whom the disease had not passed the first stage, who are, to my knowledge, still enjoying excellent health; and although many, in whom the tubercular symptoms were of a more advanced kind, may, ere this, have given way under them, there are several who are yet enjoying, with tolerable freedom, the society of their friends, and even pursuing their former avocations.

In comparing the effect upon the weight, with that upon the general health, it will be seen that although there was, in no case, any *great* improvement without an increase in the weight, there were several instances of *moderate* improvement where the weight remained stationary, and two under the same head in which it was actually diminished. It will be also observed that the degree of improvement was not always in proportion to the increase of weight, several who had gained the most not being the most improved. Two remarkable cases will be seen in which the weight was augmented, one to the extent of three ounces, and the other to that of twelve ounces, weekly, although at the same time the tubercular disease was advancing; in one of these death took place suddenly; the other was lost sight of, but was supposed to have ended fatally.

It is difficult to tell upon what the beneficial action of the oil depends. Some persons have attributed it to the iodine or bromine which it invariably contains; others have considered its efficacy principally due to its chemical composition, and that, as a simple hydrocarbon, it adds to the fatty constituents of the body;* whilst many have attempted to account for its effects upon physiological principles. Such explanations, however, are not altogether satisfactory. The truth is that we know very little of the *modus medendi* of any medicinal substance; and there is no reason why that of cod-liver oil should form an exception. I am satisfied in regarding it as a highly animalized substance, having its ultimate elements so arranged in organic compounds that they are readily taken into the system at a time when the digestive organs refuse to be reconciled to many other dietetic and medicinal agents; its effect in arresting the tubercular formation being an indirect one, and entirely due to the influence it exerts upon the general health. The oil, in fact, has the singular quality of combining the properties both of *food* and *physic*; its nutritive power is evinced in its tendency to fatten the body, whilst its tonic action is manifested in its strengthening the muscular system, and invigorating the spirits.

Other Animal and Vegetable Oils.—With a view of ascertaining the value of substances bearing more or less analogy to cod-liver oil, I have made repeated trials of train oil, the oil of the spermaceti whale, and neat-foot oil; as well as of linseed, almond, and olive oils.

The common *train oil*, after being disguised by some aromatic essence, such as cinnamon or peppermint—in order that the patient's imagination might have no share in the result—was given in fifty cases in different stages, and notes were carefully preserved. Except in ten instances, it was not continued longer than a month, for within this period its inferiority to the cod-liver oil became too manifest to justify further experiment. In these ten cases it was taken—and for a considerable time—with good effect, especially in those which had reached the third stage: there was in each an increase of weight;

* I have tried, in consequence of a suggestion of Dr. Thomas Chambers, a strong solution of sugar with ox-gall, a mixture which in chemical composition must bear some resemblance to cod liver oil; but in no case was it productive of good, and several times it caused diarrhoea.

the cough was lessened; some of the most urgent symptoms were relieved, and the health improved. Upon the whole, however, the benefit appeared less than might have been expected from the cod-liver oil.

The spermaceti oil was tried in the same number of cases, but with less satisfactory results. In four or five instances the health improved; the weight slightly augmented, and the cough diminished; but in none was the advantage of this remedy either so conspicuous or long continued as that of even the train oil; and, upon the whole, the effect was so little encouraging as to lead to its early discontinuance.

Neat's foot oil was given to twenty patients, and persevered with for a longer period than either of the preceding; but with a result of a very similar kind. Some gained slightly in weight, and expressed themselves as having received benefit; but the majority appeared so little, if at all improved by its employment, that this oil, like the others, ultimately gave place to its more trustworthy competitor.*

From these observations it may, I think, be concluded, that other animal oils possess the same qualities as those of the cod-liver oil, although in a less degree; and that the nearest approach to the latter is found in the common whale or train oil, which, in case of necessity, might, to some extent, become its substitute. It may be thought that the trial afforded them was of insufficient duration; but I became so soon convinced of their comparative inferiority, as to feel it would be wrong to sacrifice to further experiment the most fitting opportunity for making some impression upon the course of the tubercular disease.

The oils of linseed,† almond,‡ and olive, may be included under one head. They were given respectively in about thirty cases, in all of which there was either no improvement whatever, or it was so slight as to render it difficult to determine whether or not the oil deserved any of the credit. The cough, however, was generally diminished by their influence, but neither the patient's appetite nor strength was materially increased, whilst the olive oil occasionally produced a disinclination for food, and slight diarrhoea. It was singular, indeed, to observe the rapid improvement which often followed their exchange for the oleum aselli. Upon one occasion, after the linseed oil had been taken for nearly a month with no success, the cod-liver oil completely restored the patient's strength, and added to his weight one stone and one pound within six weeks: and in another example, after having prescribed the linseed oil, apparently with signal success, the health being improved and the weight greatly increased, and whilst imagining that at last an instance had occurred, of my expectations being realized, I discovered that the hospital supply having become exhausted, the patient, dissatisfied with his improvement, had been taking, of his own accord, the oleum aselli. I had also many similar illustrations in reference both to the almond and olive oils.

9. *Paracentesis Abdominis in Tympanites.*§—This operation is fre-

* My friend and colleague, Dr. Theophilus Thompson, who was, I believe, the first to employ neat's-foot oil, has formed a higher estimate of its effects. His experiments, however, were carried on upon the in-patients, whilst my own were practised upon out-patients; and these different conditions may possibly explain the difference in our results.

† The trial of this oil suggested itself to me from witnessing the effect of the linseed cake upon prize cattle: whether it might have a similar effect upon healthy members of our own race is open to experiment.

‡ Almond oil has lately received a high character in scrofulous diseases. In a paper by Dr. Duncan and Mr. Nunn, in the 'Prov. Med. and Surg. Journal' for March, 1850; but it seems not to have been given, to any extent, at least, in cases purely phthisical.

§ On *Paracentesis Abdominis in Tympanites*. By M. Labric, D.M.P. *Révue Médico-Chirurgicale de Paris*, April, 1852.

quently performed on cattle suffering from tympanites, and the opinions of veterinary surgeons are very favorable as to its utility. In five instances, also, it has been performed in man, and certainly without any apparent harm. The operation is, undoubtedly a *dernier ressort*, but at the same time it must be admitted that the following cases, the results of veterinary practice, the rare occurrence of any ill effects after tapping for ascites, and the many cases of uninterrupted recovery after penetrating wounds of the intestines, all go to show that it cannot be regarded in this light on account of its own intrinsic dangerousness. We proceed then to the clinical evidence which M. Labric has been at the pains to collect.

The first case occurred in La Pitié, under the care of M. Piedagnel, and the operation was performed by M. Michon on the 18th of September, 1850. The patient was a man about 50 years of age, whose life was rapidly drawing to a close in consequence of chronic disease of the peritoneum. The bowels were enormously distended with flatus, and the power of expelling gas or feces was lost. Hiccup and anxiety were most distressing, suffocation was impending, and matters were rapidly getting worse in spite of all ordinary means for procuring relief. This had been the case for several days: The effect of the operation was to let out a very large quantity of air, to afford instant relief to the hiccup, anxiety, and feeling of suffocation, and to procure shortly afterwards several copious stools. This relief continued until the 27th, when the symptoms again became urgent, though not to such an extent as to require a repetition of the operation; and in two days the patient died. After death the usual thickenings, discolourations, adhesions, and effusions of chronic peritonitis were found, all of which were evidently of a chronic character, *but there was no trace of the wound caused by the trocar*, except immediately underneath the skin. On the parietal and intestinal surfaces of the peritoneum there was no trace whatever. In this case, therefore, there was no evidence of peritonitis, or any other danger, either in the symptoms during life or in the appearances after death.

The next case occurred in July, 1850, under the care of M. Blache at the Hôpital des Enfants Malades. It was one of a child dying from extreme marasmus, and much tortured with flatulent distension of the large intestines. Two punctures were made after several days spent in unavailing efforts to afford relief. This was on the 21st of the month. The day following the distension having returned, and there being no signs of inflammation in connection with the former operation, two other punctures were made, but on this occasion the canula became stopped up with feces, and little or no gas escaped. A fifth puncture was made on the 26th. Death happened on the 2d of August. In this case the traces of the wounds were discernible, but no signs of inflammation, and hence the conclusion that they had done no harm. M. Labric ascribes the little relief procured by the operation to the contractility of the bowel having been destroyed by the enormous distension to which it had been subjected.

The third case is borrowed from the 'Bulletin de la Société Médicale d'Emulation' for January, 1823. It was one of puerperal abdominal inflammation, attended with enormous distension of the intestines, and with a complete loss of the power of expelling flatus or feces. Paracentesis was performed when the patient was in a moribund state by M. Laval, upon which an enormous quantity of gas escaped. The canula was then closed for

a couple of hours, for fear the patient might faint from the too sudden evacuation of the abdomen, and then a second large quantity of gas was evacuated. After the operation the patient had a good night; on the following morning she had a copious stool, and in the course of the two succeeding days several such; and in twenty days she was well. In this case the operation seems to have afforded immediate relief, to have re-established the peristaltic action, and, in a word, to have saved the patient, for she had continued to sink progressively and rapidly up to the time it was practised. No inconvenience whatever resulted.

The fourth case is out of a thesis by M. Maisonneuve, dated 1835. It is that of a medical student who sank from peritonitis, and who before death was agonised by tympanitis. The operation was practised a few hours before death, with the result of procuring immediate relief to the suffering, and a speedy and copious action of the bowels.

It only remains to say that the instrument used was an ordinary exploring trocar, and the puncture performed in the most prominent part of the abdomen, the median line being chosen in preference to the more vascular and muscular parts of the parietes. It is to be observed also that in the third case no harm resulted from leaving the canula in the wound for some time—a fact of some importance, for in some cases in which this operation might be expedient, it is easy to conceive that such a delay might be necessary in consequence of the *slow* escape of the gas.

10. *The Treatment of Albuminuria by Iron.**—The very interesting and important cases which form the subject of this paper, seem to show that iron is the true antidote for that general deterioration of the blood which exists in all cases of albuminuria, and that much advantage is gained from beginning its administration at an earlier period than is usually supposed. They open out a new and hopeful plan of treatment in a malady which is notoriously difficult to manage.

Case I.—Patrick Smith, aged 40, a coachman, of temperate habits, was admitted under my care into the Meath Hospital, (February, 1849,) for general dropsy. He had been attacked the night previously with convulsions, stated by a medical man who had seen him to be of an epileptiform character; but on admission he was gradually recovering from a state of stupor, and could answer questions. His face was remarkably pale and ghastly, his body, and both upper and lower extremities, very anasarcaous, skin dry, tongue red, pulse 76, regular, great difficulty of breathing, with muco-purulent expectoration, and rales over the entire of both lungs; he complained of pain across the loins, and also of frequent sense of vertigo; the urine was passed in natural quantity, feebly acid, of a dark brown appearance, sp. gr. 1.010, highly albuminous with heat and nitric acid; very deficient in uræa. The sediment under the microscope consisted of blood-discs, renal epithelium, and casts of the tubes, both entire and broken up. He had been taking mercury for the dropsy, and was under its influence when admitted. I learned that he had enjoyed good health until three years ago, when he was treated for disease of the liver, and cured; he remained well up to eight

* On the Treatment of Albuminuria by the Administration of Preparations of Iron. By Cathcart Lees, M.D., Physician to the Meath Hospital, Examiner in Medicine to the Queen's University in Ireland, &c. Dublin Quarterly Journal of Medicine, June, 1852.

weeks since, when, after exposure to wet, he was attacked with diarrhœa, and on its subsiding his feet and legs began to swell; in a few days his body and face became dropsical, with very scanty and high-coloured urine; the heart was acting strongly, but there was no sign of valvular disease. I considered this a case of subacute congestive desquamation of the uriniferous tubes, with the secondary head affection, so often met with in the disease; I, therefore, ordered him to be dry-cupped over the loins, and, as the bowels were confined, to take half-a-drachm of compound powder of jalap and an eighth of a grain of elaterium. This caused gentle watery evacuations from the bowels. I allowed him sago, with a small quantity of wine, and then, even though he appeared to have general mucous secretion all over both lungs, I gave him ten grains of the ammonio-tartrate of iron three times a day. This was followed by the happiest results. His breathing improved; he had no return of convulsions nor vertigo. I then gave him a vapour-bath twice a week, clothed him in flannel, and kept him on the constant use of the iron for three months, with an occasional purge of the compound jalap powder; the anasarca disappeared entirely, the urine became perfectly clear, the specific gravity rose to 1.015, and though a trace of albumen could still be detected, and an occasional sediment of epithelium with one or two casts of the tubes, yet the man considering himself cured, left the hospital, and was seen by one of our students within the last month working as a railway labourer, and apparently enjoying good health. I consider this case worth recording, as showing the good effects of the treatment by iron in so early a stage of the disease, even though the condition of the urine and the pain in the back indicated congestion of the kidneys, and when also the case presented the symptoms and physical signs of acute congestive bronchitis, with profuse muco-purulent secretion. Another important feature in the case is the fact of convulsions coming on while the patient was under the influence of mercury, and tends to confirm me in the opinion I have long entertained from what I have observed in similar cases, and which I find corroborated by Drs. Bright and Barlow, of Guy's Hospital, in their latest report on the subject,* who state that "mercury was not only an inefficient, but in all probability a dangerous, remedy in those cases in which the renal disease was the primary and principal affection."

Case 11.†—Rickaby, aged 36, was admitted into the Meath Hospital, February, 1850, for general dropsy. He states that he was always a healthy man until about eight years since, when he caught cold from having worn damp clothes; a week subsequently his face became œdematous, and afterwards his whole body swelled. He was first treated in the Dispensary of this Institution, when he was bled, as also on coming into hospital, where he was under treatment for thirteen weeks, both by Dr. Stokes and Dr. Leck, and was eventually discharged cured. From that period he enjoyed good health, until seven weeks ago, when his appetite began to fail, followed after a few days by tenderness across the abdomen and lumbar region, and in a week the face, abdomen, and lower extremities began to swell, and he gradually increased to the present time, when there is very great anasarca, particularly of the lower extremities and scrotum, which is enormously distended with fluid; there are also ascites, and considerable effusion into both pleural cavities, indicated by dull sound on percussion from the base of the lungs up to the inferior angle of each scapula, with absence of respiration, but change of position restores the clear sound, and also the natural respiratory murmur; the urine is scanty, dark-coloured like porter, with a copious brownish

* Guy's Hospital Reports, second series, No. 1, p. 237.

† Reported by Mr. George Nicholson.

sediment; it is acid; specific gravity 1.010; very deficient in urea; highly coagulable by heat and nitric acid; under the microscope the sediment appeared to consist of blood-discs, epithelial cells, nuclei, entire and broken-down casts of the uriniferous tubes, with an amorphous deposit of lithates; the pupils of both eyes are greatly dilated, but there have been no head symptoms; he complains chiefly of pain of his right thigh, and of coldness of his feet during the day, while they are, on the contrary, uncomfortably warm during the night. He was ordered the following mixture: a drachm of ammonio-tartrate of iron, half an ounce of syrup, and five ounces and a half of water, of which an ounce was to be taken three times a day; he was clothed in flannel, and directed to have an occasional dose of compound jalap-powder, and a vapour-bath twice in the week. Under this treatment he improved rapidly; the effusions in the chest and abdomen, as also the anasarca, disappeared; the urine became quite clear, and the specific gravity rose to 1.020; urea re-appeared in natural quantity, albumen disappeared, no tubular epithelium could be detected by the microscope, and he left the hospital on March 29th, having been taking the iron daily for nearly two months, apparently quite recovered, able and willing to resume his work as a labourer.

*Case III.**—Margaret Holmes, aged 34, mother of nine children, healthy-looking, was admitted into the Meath Hospital, March 4th, 1852, with general anasarca; she was in the fifth month of pregnancy. When four months pregnant of a child, now three years old, she observed her abdomen to be swelling rather unnaturally fast, but was not in any way indisposed; her urine, however, was, for a short time prior to the swelling, scanty and high-coloured; for two or three months previously to her confinement she became affected, for the first time, with a sensation of numbness, almost amounting to pain, across the loins; at this period her legs and feet began to swell; all these symptoms disappeared in nine days after her confinement. After this she continued in perfect health for one year and a half, when, being in her fourth month of pregnancy, the former symptoms returned in the same succession, her urine again becoming scanty and high-coloured; the swelling of her feet was at this time so great that the integuments of one of them gave way, and a large quantity of fluid exuded from it. The swelling did not leave her at this time, as before, after her confinement.

About six weeks or two months after being confined, the anasarca continuing still, she felt some dimness of vision, and got a fit, remaining unconscious for two days; on the third day her senses were again perfect: she then went to Steevens' Hospital, and, after remaining there for five weeks, she left it quite recovered.

From this time (March, 1851,) to June there was no return of her complaint, but then the swelling commenced again, beginning in her abdomen, and extending from thence to the legs and feet, gradually increasing up to the present time, (March 4th, 1852,) attended with a sense of numbness in the back; scanty and high-coloured urine, of specific gravity 1.010, coagulable by heat and nitric acid, with a dark brown sediment, consisting of blood discs, renal epithelium, casts of the uriniferous tubes, and some mucous globules. There was general anasarca, with ascites; she suffered greatly from dyspnoea, caused, I presume, by the distension of the abdomen, for there was no disease of the heart or lungs to account for it. I had her dry-cupped in the loins; and she was ordered to take an eighth of a grain of elaterium, and half a drachm of compound jalap powder. This acted gently on her bowels with great relief. I then put her on the electuary of the tartrate of iron, followed by the ammonio-tartrate of iron. Under this treatment she improved rapidly; all anasarca disappeared; the albumen in the urine greatly diminished, the

* Reported by Mr. Ulysses Fitzmaurice.

specific gravity rose to 1.015, with a fair proportion of urea; and she left the hospital in about six weeks, apparently perfectly recovered.

"This case is interesting as illustrative of the influence of the puerperal state, not only as a predisposing, but also as an occasional cause, in exciting an acute attack of dropsy. The woman lived always comfortably and temperately, had never scarlatina, nor any symptom of inflammatory disease; but during each pregnancy the dropsy gradually returned, with scanty high-coloured urine.

"Case iv.*—A. B.—, a young gentleman, *æt.* 12, had been complaining for six or eight weeks, of languor, loss of appetite, headache, previous to April 19th, 1850, on which day he passed some blood by the urethra. Dr. Osbrey saw him on the 20th, and found him suffering from frequent desire to pass urine, which was scanty, of a dark sanguineous colour, followed by much straining, and with the passage of blood from the urethra, in which canal a glairy mucous discharge was constantly present; the urine on standing deposited a copious sediment of pus, mixed with blood; there was no pain or tenderness over the loins, the bladder, or in the perineum; his aspect was very pallid; tongue clean; pulse 80, weak and thready; appetite very bad; there was slight œdema of the feet and ankles. He had never suffered from scarlatina, nor was there any disease of the heart or lungs. Dr. William Moore examined the urine, and reported it to be acid, retaining its acidity on the third day after being passed; specific gravity 1.016; highly albuminous; very deficient in urea; pus corpuscles in great quantity; with some mucus, blood, and epithelium. Dr. Osbrey first directed his attention to allay the irritable state of the bladder, which he effected by the use of liquor potassæ, and hyoscyamus, with mucilaginous drinks; under this treatment the irritability of bladder and the discharge of blood ceased; he complained of pain in the right lumbar region on the 30th of April, but which was completely removed by a blister to that part; and the discharge from the urethra ceased the next day. The urine was still highly albuminous, acid, retaining its acidity for fifty hours; urea deficient; pus corpuscles in great variety.

"May 6th.—The sedative mixture was continued, and he was given ten drops of the tincture of the hydro-chlorate of iron three times a day. Next day he complained of headache and sickness of the stomach, but which being temporary, no change was made in his medicine.

"May 13th.—Urine passed in greater quantity; specific gravity 1.008, albuminous, still deficient in urea; *no pus*; vibriones in great numbers. The iron was continued, and pills of quina, with extract of gentian, two grains of each, given three times a day.

"May 30th.—Dr. Moore reports the urine to be acid; specific gravity 1.017, no albumen; no pus; urea in fair proportion; vibriones still numerous. He continued the use of the iron until July, 1850, when he appeared perfectly well; urine quite healthy; and he has had no return of the disease up to the present time, now nearly two years.

"The following case is illustrative of the beneficial effects of iron in the more advanced stages of the disease.

"Case v.*—Catherine M'Kenna, aged twenty-one years, of a pallid, emaciated appearance, was admitted into the Meath Hospital, March 17th, 1852. She complained for the first time, about nine months since, of pain and tenderness in the epigastrium and abdomen; after a short time the abdomen began to swell, and has continued gradually to increase; the pain and tenderness were accompanied by a dry retching, which she states used to attack her

* Communicated to Dr. Lees by Dr. Osbrey.

† Reported by Mr. Daniel Ryan.

every day about one o'clock; this dry retching continued for about three months, but at no time had she any regular vomiting; her abdomen is now much distended, but chiefly with air; there is some ascites, and also enlargement of the right lobe of the liver; her appetite is very bad, and she suffers from thirst; she complains occasionally of headache; and has a short, dry cough, with perspirations at night; there is a shade of dullness with increased resonance of voice under the right clavicle, but no r le; she passes a large quantity of urine of a very pale colour and alkaline re-action, specific gravity 1.004; no precipitate is caused by heat, but on adding nitric acid a copious precipitate of albumen is formed;* no urea can be detected in the urine; there is a slight, cloudy sediment composed of renal epithelium, with casts of the tubes dotted with oil globules. She states that two years since she fell down stairs and hurt her back, but paid little attention to it until some months ago, when the pain returned, but was removed by a blister. She has had leucorrhœa for the last two years; she has never had any swelling of the legs or feet; she is not pregnant; her bowels are always inclined to be too free. I put her first on the use of the liquor ferri pernitratiss, in doses of ten drops, three times a day, and afterwards she took ten grains of the ammonio-citrate of iron, three times daily; under this treatment her general symptoms and appetite improved; the urine became acid, but still continued albuminous, though less so than at first, and its specific gravity increased to 1.012; she left the hospital, as she felt much relieved and was anxious to return to her home."

11. *The Effects of Different Remedies in Diabetes.*†—The subject of Dr. Frick's observations was placed under peculiarly favorable circumstances for ensuring all necessary certainty. He was a prisoner in the Maryland Penitentiary, in the prime of life, not fleshy, but healthy and strong in appearance. The case-itself presented no unusual peculiarities.

In the course of the investigation, abundant proof of the general and not local character of the disease was obtained, sugar being found not only in the urine but also in the sweat, f ces, chyme, bronchial mucus, saliva, as well as in the blood and in the purulent matter of an abscess in the hand. Sugar was also found in the ordinary excretions, and in considerable though in diminished quantities, when all sugar or saccharifiable substances were carefully excluded from the food; it was even found in the chyme when the previous meal had consisted of meat and eggs alone.

Dr. Frick's conclusions upon the influence of diet are somewhat surprising. In the matter of *drinks* he finds it not necessary to subject the patient to any privations. He found, indeed, that the *specific gravity* of the urine varied according to the amount of fluid drank, but that the saccharine contents in a given time underwent little or no variation. And equally so with respect to food; for though the symptoms are ameliorated when the diet is made to consist of animal matters, "there is no real improvement, and the deprivation of saccharine and amylaceous matters is not counterbalanced by the diminished thirst and less frequent calls for micturition."

* Dr. Simpson, Lecturer on Chemistry, tested it most carefully, but could not discover any traces of urea in the urine. I was assisted in the microscopical investigation of all the cases by Mr. Thomas Ledwich, and the chemical analyses were made by Dr. Simpson.

† A Case of Saccharine Diabetes, with Observations on the Results of Treatment. By Charles Frick, M.D., Baltimore. American Journal of Medical Sciences, July, 1832.

We have been most struck, however, with what is said upon the effects of remedies in the treatment of diabetes, and it is this part of the article that we would reproduce here. Many remedies were tried, and their effects carefully noted for a week at a time, every precaution being taken to preserve the patient as much as possible in the same predicament. The remedies were given in the dose indicated below, and repeated thrice daily, and the result is shown in the corresponding figures, which indicate the amount of sugar passed in the stools as well in the urine during the week in which each remedy was tried.

		Grains.		Grains.
Strychnine	$\frac{1}{6}$ gr.	3369	Without medicine	14520
"	$\frac{1}{3}$ gr.	3565	Creosote and naphtha	15028
"	$\frac{1}{10}$ gr.	6250	Cod-liver oil, 6 $\frac{1}{2}$ per week	15058
"	$\frac{1}{15}$ gr.	6425	" 10 $\frac{1}{2}$ per week	16108
"	$\frac{1}{30}$ gr.	6360	Ergot	17150
Mur. tinc. ferri	10 drops	6900	Cod-liver oil, 20 $\frac{1}{2}$ per week	20160
"	20 "	8264	Whiskey	20504
Aqua ammonia	5 "	12550	Calomel and opium	24230
Iod. potass.	3 gr.	14270	Ergot, strychnine, and iron	24340

Strychnine.—The amount passed without medicine is obtained from the average of eleven analyses. We see, therefore, that the influence of strychnine exerts by far the greatest control over the quantity of sugar passed in the urine and feces. The patient was kept under its influence for various periods, amounting in all to four months. It is here shown that, under doses of one-twentieth of a grain, the amount is diminished to less than one-half, and under one-sixth of a grain to less than one-fourth. For three successive days he was kept upon a meat diet, and one-sixth of a grain of strychnine administered three times daily. The quantity of sugar, on the third day, was diminished to 132 grains. This was on the 30th of October, and was the smallest quantity we ever found in this patient's urine.

Tinc. Ferri. Mur.—This remedy, in doses of ten drops, diminished the sugar one-half; but on increasing the dose to twenty drops, a notable increase manifested itself, though still showing the beneficial effects of the medicine.

Aqua Ammonia.—The diminution here amounted to one-seventh. Larger doses were tried, but they produced so much uneasiness that they had to be discontinued.

Iodide of Potass.—The effect of this remedy over the excretion of sugar was little or none. It produced pain in the bowels and diarrhoea.

Creosote and Naphtha.—These also produced great inconvenience, and their effect was to increase slightly the quantity of sugar.

Cod-liver Oil.—In whatever doses this medicine was administered, its effect was to increase the amount of sugar. When six ounces per week were taken, the difference was slight; but when increased to twenty, one-third more sugar was passed. One fact, however, is worthy of notice. The patient, under this remedy, always gained weight, and, with the exception of the period when ergot was administered, only at that time. In forty-four days, on four pounds of oil, he gained nineteen pounds.

Ergot.—The patient, under the influence of this remedy, gained in one week nine and a half pounds, but the amount of sugar increased one-sixth.

Whiskey.—This increased greatly the quantity of urine, as might be supposed, and also the sugar, which amounted to one-third more than when he was taking no medicine.

Calomel and Opium.—This was continued for two weeks, till the patient

was brought decidedly under the influence of the mercury. The calls to urinate became more frequent, and the amount of sugar became nearly doubled.

Ergot, Strychnine, and Iod. Ferri.—Under this combination the excretion of sugar was about the same as the preceding. He complained greatly of the mixture, and the largest quantity of urine was passed during its administration.

12.—*On Diseases of the Skin.**—The recent work on this subject by Dr. Neligan need not long detain us, not because it is unworthy of notice, but because it cannot boast of much originality. In his classification of this intricate class of diseases, the author prefers the system of Willan with some (as we think) valuable modifications arising out of the progress of science since the time of the elder Dermatologists. Thus he introduces as new classes the hypertrophie, the dermatophytæ, the hæmorrhagiæ, and the cancrodes. In the former class he includes ichthyosis, (placed by Willan under squamæ,) molluscum, elephanticus, condyloma, &c. He also transfers porrigo and sycosis to the dermatophytæ, and lupus, and keloid—a disease unnoticed by Willan—to the cancrodes. In respect of his mode of treating the several diseases of the skin, we can conscientiously say that the reader will find Dr. Neligan a sound pathologist and safe practical guide—a guide especially acceptable to the junior practitioner and student, as supplying them with many formulæ of acknowledged efficacy.

13. *On the Buxton Waters.*†—Dr. Lyon Playfair, it appears, has recently made the discovery that the Buxton waters contain nitrogen to the very large amount of 206 cubic inches per imperial gallon, and to this circumstance Dr. Robertson is disposed to attribute their peculiar efficacy. He argues in favour of this view from the evident importance of nitrogen in the animal economy. The large quantities present in the active principles of tea, coffee, and cocoa, in tannin, in the various fibres and tissues of the body, as well as from the relation of the nitrogen in the food to the nutritive value of that food.

The pamphlets in which this view is set forth contain also a full account of the Buxton waters, the recent alterations and improvements in the baths, the results of their use, and directions for using them.

* A Practical Treatise on Diseases of the Skin. By J. Moore Neligan, M.D., &c. Dublin, 1852.

† (1.) A Guide to the Buxton Waters; and (2.) A Letter to Dr. Lyon Playfair, being a Medical Commentary on the Results of the Recent Analysis of the Buxton Tepid Water, &c. By William Henry Robertson, M.D. (Pamphlets.)

II.

REPORT ON THE PROGRESS OF SURGERY.

BY DR. RADCLIFFE.

1. *Syphilisation*.²—The startling notions conveyed in the term "*syphilisation*," which have for some time past excited considerable attention in France, Italy, and Germany, had their origin in a series of experiments instituted by M. Auzias Turenne, for the purpose of testing the validity of Hunter's doctrine of the non-communicability of syphilis to the lower animals. It was supposed that Hunter and his successors might have failed from having experimented upon animals too far removed from man, and the result showed the correctness of this idea, for on inoculating apes with the virus, these poor creatures exhibited speedy proof that a pustular and ulcerative disease had been communicated to them. The question was as to the nature of this disease. M. Auzias Turenne thought it syphilitic, and so thought the Académie de Médecine when the matter was first brought before it; but eventually the latter body yielded to the influence of MM. Cullerier and Ricord, and changed its opinion. The facts, however, remained and multiplied. There could be no doubt that a disease had been communicated to the apes, and that this disease was contagious, for it was communicated from these apes to other apes, and also to rabbits, cats, and horses. Indeed, such were its appearances that there seemed to be every reason but one for believing it to be syphilis, and that was the communication back again to man: and even this was not long wanting, for—thanks to his rashness—M. Robert de Wultz, one of the professors in the University of Wurtzburg, inoculated himself from a cat, on four separate occasions, and each time produced a true and unmistakeable chancre.

This discovery issued in one more surprising still, upon which the process of syphilisation is founded, namely, the strange and curative change which comes over the phenomena of the disease when the inoculations are many times repeated in the same individual. Experimenting upon apes it was found that the artificial ulcers regularly diminished in size and virulency, in proportion as the inoculations were multiplied, until at length the virus ceased to take effect. The system seemed to become protected, as in ordinary inoculation and

* 1. *Gaz. Médicale de Paris*. 2. *Revue Méd.-Chir. de Paris*; and 3. *Archiv. Gén. de Méd.*

vaccination; and the process by which this is accomplished is that to which the name *syphilisation* belongs. This result, also, is all the more surprising because reiterated inoculations were evidently essential to it, for only once inoculated and then left to themselves, the poor ones speedily perished with all the signs of the syphilitic cachexy.

Having satisfied himself of the reality of these results, M. Auzias Turenne then proceeded to inquire whether man was capable of syphilisation. He had many ardent followers who eagerly submitted to the experiment, and who shortly seemed to furnish evidence in the affirmative.

This pretension excited great opposition, particularly in the Académie de Médecine, where a long and violent discussion took place on the case of a Dr. L—, a German physician, who had submitted to the experiment, and who, instead of being cured by it, had become covered with phagedenic ulcers. In other quarters, however, the impression was more favorable. At Turin, M. Casimiro Sperino, the chief surgeon in the Syphiliticoma, or syphilitic hospital of that city, at once took up the new views, and put them to the test on a large scale. He was favorably inclined towards them, he tells us, for several reasons. He had observed that severe inguinal buboes are more apt to follow small and insignificant chancres, which heal in a few days, than those which are large and obstinate. He had observed that the likelihood of constitutional symptoms held an almost inverse relation to the severity and continuance of the local disease, and he had known many prostitutes, whose constitutions had never been sensibly affected, who had had chancres for years, either constantly open, or closed only to open again immediately. He had repeatedly satisfied himself that foul buboes were more prone to heal in those cases in which their syphilitic character had been tested, after Ricord's plan, by inoculations on the surrounding skin.

The subjects of M. Sperino's experiments were fifty-two hospital patients, all prostitutes, and all suffering from aggravated forms of primary or secondary syphilis. The virus was taken from the person syphilised, or from a comrade—from the first, if possible—and always from a growing ulcer. The inoculations were repeated once or twice a week in three or four distinct places, usually in the abdomen. The time required for the establishment of the artificial chancres was from two to three days. The effects of the second inoculations were less serious than the first, the third than the second, the fourth than the third, and so on until the virus ceased to produce any effect whatever, coterminously with which epoch, all former ulcers had healed, and buboes, recent nodular enlargement of bones, and cutaneous stains or blotches had either disappeared, or were in rapid process of disappearance. The virus, also, which made no impression at this time, was found to retain all its virulence when tried upon an unprotected person.

Since this time M. Sperino has shortened the intervals between the several inoculations, and has increased the number of punctures in each operation to twelve, sixteen, or twenty, and with the effect (he tells us) of expediting the process, and of ensuring a slighter form of artificial chancre. He has also subjected his syphilised patients to a

course of bathing in the sulphureous waters of Acqui, which waters are notorious for their power of bringing out secondary symptoms in the subjects of syphilis, and he has found them to resist this test as well as that of inoculation.

Such are the main particulars of these fifty-two cases, as gathered from M. Sperino's communication to the Academy of Medicine and Surgery of Turin. No other treatment was employed. They are said to have been without exception of an aggravated character, and without any spontaneous tendency to heal. For a month before the institution of the experiments they had been purposely left without any treatment, and during this period they had retrograded.

Such is M. Sperino's case. At first sight the impression is, that his conduct was scarcely warrantable; and of this it is difficult to divest ourselves, so long as we consider the suffering, the confinement, the foul cicatrices, and the doubtful results; but at the same time it is necessary to remember that each of these women submitted with readiness, and even eagerness, and that every case was of such a nature as to render it very problematical whether a cure would have been effected in a shorter time by any known means. At second sight the results seem strange and incredible; but here, again, it must be remembered, that these experiments were carried out in a public hospital by a man of known reputation, that public attention was strongly directed to them, and that they have been subsequently repeated and confirmed in some other hospitals—by M. Gamberini in S. Ursula at Bologna, and by M. Gulligo, in a hospital at Florence. Mere improbability, indeed, is no sufficient objection; but time and additional evidence are both wanted, before we can come to a decision on so important a subject.

Meanwhile we select for illustration a detailed case published by M. Zelaschi in the 'Gaz. Med. del Assoz. degli Stati Sardi,' which case has been taken from that journal and commented upon by M. Diday, in the 'Gazette Médicale de Paris' for July 10th, 1852. The case is long, and somewhat inconclusive, but it has the recommendation of having been got up under M. Sperino's supervision, and published with his consent.

Case.—Carlo T—, *æt.* 29, of sanguine temperament and good constitution, contracted in May, 1851, a primary chancre on the edge of the prepuce. On the side of this ulcer was a large induration, the remains of a similar accident caught in November, 1850, which had been treated by local means only. He had suffered once previously; and on this occasion, the sore had healed spontaneously, after a period of three months.

On first seeing the patient, the chancre was thirty-five days old, with an extraordinary extended and indurated base. It had been thrice cauterized, and the effect of this mode of treatment had been, to inflame and irritate it exceedingly.

Resolving to treat the case by syphilisation, M. Zelaschi made (22d June) two punctures on the inner and inferior surface of the right thigh, with a lancet impregnated with some matter taken from the chancre in the prepuce. On the 25th, these had given rise to pustules. The same day two additional punctures were made by the side of the first and with the same matter, and these, likewise, were converted into pustules in the same time as at first.

Notwithstanding this, however, the prepuce became more painful and more purulent.

On the 20th, acidulated drinks, with a laxative draught, were prescribed. On the 27th, after a good deal of pain in the right groin, a bubo made its appearance, for which emollient cataplasms were used. On the 27th two punctures were made with the virus from the first artificial ulcers, and a third with virus from the prepuce; all of which resulted in pustules. Again on the 1st of July three punctures were made in the inner surface of the same thigh with matter from the artificial ulcers; all of which had taken effect in three days.

The ulcers of the first two inoculations are very painful, and the chancres on the penis still continue to increase.

On the 5th two punctures were made in the right thigh with matter obtained from the sore in the prepuce; on the 8th, three on the left thigh; and on the 10th, four by the side of the last. All these took effect. At the same time, an unsuccessful attempt was made to inoculate with the matter of a gleet existing in the same patient.

On the 10th, the ulcers from the first two inoculations were painful, purulent, and irritable, one or two of them having very hard bases. The ulcers and subsequent inoculations progressively smaller, less painful, and less irritable. The bubo is stationary, but not so the chancre on the prepuce, which is highly inflamed and irritable,—a great proportion of the prepuce being now destroyed by it. Inoculation suspended.

On the 10th, 13th, and 17th, laxatives and diluents were ordered along with frequent baths, and fomentation, either of simple water, or of decoction of mallows. On the 21st the excitement and local irritation were such, that it was thought proper to bleed twice. For the same reason he was also bled on the 23d and 24th.

On the 29th the inflammation was evidently abated in the penis and in the artificial chancres, and with the exception of the first two, all seemed in the way of improvement. Those of the 5th, 6th, and 7th were almost well. The glandular engorgement of the groin almost gone; but the chancre on the penis is still angry and growing.—(Dressings with emollient cataplasms, frequent tepid fomentations,—leeches to the anus.)

The 4th of August, the ulcers of the last three inoculations have cicatrised, and the others are improving manifestly; but the sore of the prepuce has extended to the glans, and two additional chancres have made their appearance on the dorsum penis, and a third in the passage. Ten days later the two ulcers of the first inoculation and one of the second are fungoid and indolent. All the other artificial sores have healed. The chancre of the prepuce still gains ground. At the same period there appeared, in various parts of the body, copper-coloured, flat blotches, unattended with itching, and a few nights afterwards there was some pain and tumefaction in the upper parts of the tibiae, the blotches all the while becoming more and more confluent.

Things being in this state, and antiphlogistic measures having been unattended with any good results, M. Zelaschi, with M. Sperino's approval, resolved upon a new and more decided trial of syphilisation. On the 20th, therefore, twenty punctures were made in the abdomen, with pus taken from another patient. All these came to maturity on the 23d. Fourteen punctures were made in the same region, with matter from the patient's prepuce, of which twelve resulted in pustules.

On the 27th, and again on the 30th, nitrate of silver was applied to the sores remaining on the thighs, and acidulated drinks with the cold lotions and cataplasms were ordered to be persevered in. The ulcers from the ino-

culations on the 20th inflamed and painful. Fifteen additional punctures were made in left iliac region, eleven of which came to maturity.

On the 31st, the pain in the bones of the leg relieved; the progress of the eruption stayed; the ulcers of the 20th improving. This day twenty punctures were made on the abdomen with matter obtained from these ulcers, and of these eighteen became converted into small pustules.

On the 6th of September the improvement was more marked: the ulcer on the penis in great measure healthy, except where the glans is implicated; the ulcers caused by the inoculations of the 20th and 23d of August are quite well; those of the 27th and 31st are nearly well, and several of the pustules have dried up without opening. This day five punctures were made with matter from another patient, and five pustules resulted.

On the 12th, nine punctures were made from these pustules, and nine small pustules resulted.

On the 15th, six other punctures with the same virus were made, and failed altogether; the ulcers on the penis all rapidly healing or healed; the induration nearly gone.

On the 20th, twenty inoculations were made with virus from another patient, and from these originated seventeen small pustules, which, with the exception of two, dried up without bursting.

On the 25th, all the artificial sores are healed, and the chancre of the prepuce nearly well. This day and on the 11th of October fifteen punctures were made, nine the first time, and six the second, without any result. Thrice afterwards fresh virus was applied to the remains of the original chancre, but this proceeded not the less steadily in the process of cicatrization.

On the 8th, nine new inoculations were performed, whence resulted three small pustules, not larger than a pin's head, and passing three days without opening.

On the 9th, almost all the syphilitic blotches had disappeared, and there was an abundant desquamation where they had been.

On the 11th, six punctures were made and ten on the 19th, but none of them came to anything, though in these cases, as in several of the later ones, the virus was taken from another patient, and showed itself in others to be eminently contagious. The process of *syphilisation* was now complete, and what is more, the patient had not only ceased to be sensible to inoculations with the syphilitic virus, (and many additional attempts were made subsequently, as well as those which have been stated,) but he had lost every sign of his former disease except the cicatrices of the ulcers. The patient, in fact, was quite well and able to return to his work, which he did.

In commenting upon this case, M. Diday admits that the result appears to be favorable to syphilisation,—that the healing of the chancres followed immediately upon the vigorous and effective carrying out of the inoculations,—and that the constitutional syphilis gave way contemporaneously and without any other treatment. Still, he cannot decide whether these changes are *effects* or *coincidences*. He derives an objection from the duration of the case,—namely, three months and ten days,—and intimates the possibility that the local and constitutional symptoms may disappear spontaneously in this time. He thinks also that the discontinuance of the bleedings and poulticings might have something to do with the healing of the original chancre. He cannot understand why the inoculations produced no good effect

in the first instance, if they were the real curative agents in the second.

As it appears to us, however, none of these objections are of real weight, except the last, and even this is not altogether satisfactory, for the sores produced by the inoculations in the first instance were progressively milder in their character, and the original chancre, for anything M. Diday knows to the contrary, though bad enough, might have been worse if it had not been for these inoculations. There is also a weighty argument in favour of the views of M. Auzias Turenne, which M. Diday forgets altogether, and which we feel bound to mention, though without pledging ourselves to one view or the other. This is, the rapid improvement which takes place *in spite of* the continued and abundant introduction of new virus from other patients. This fact, in our opinion, altogether removes the case under consideration from the list of those in which single infections have worn themselves out in time, and imparts a novel and remarkable interest to these cases of syphilisation.

In the Académie de Médecine the debate ran upon the moral and not upon the scientific merits of the case. The idea of syphilising a pure person as a prophylactic measure so horrified the members, that the real question at issue, or that which ought to have been at issue, the reality or non-reality of syphilisation, was never gone into. This will appear when it is stated that the experiments of Turenne, Sperino, Marchal (de Calvi), and others, were altogether ignored, and that the only evidence admitted was the case of the young German physician, M. L—, in which M. Turenne says and proves that syphilisation had never been properly carried out. We would venture also to dissent from the verdict of the Académie for two other reasons. The one is that that verdict was chiefly got by M. Ricord, who is too deeply pledged to opposite views to be an impartial judge; the other is that M. Malgaigne entered a protest against it.

2. *The Contagiousness of Secondary Syphilis.**—M. L—, the unfortunate German physician, who furnished the text for the long and violent discussion on syphilisation at the Académie de Médecine, has been made the text for a discussion of equal length and violence on the contagiousness or non-contagiousness of secondary syphilis. M. Velpeau was the great champion for contagiousness, and with him fought MM. Lagneau, Gibert, Roux, and Gerdy; M. Ricord contended by himself on the other side. The result was a drawn battle, from which the combatants agreed to appeal to the arbitration of a commission.

M. Velpeau maintained that nearly all forms of secondary syphilis were contagious. In his opinion, the almost universal belief that this was the case was a proof in kind. The warty, condylomatous forms were readily transmissible to parts with which they were in contact, as he himself has shown by many experiments, and the like obtained in many other forms of secondary eruption. The hereditary charac-

* Arch. Gén. de Médecine, Oct. and Nov.; Revue Méd.-Chir. de Paris, Oct.; and Gaz. Méd. de Paris, Oct. 2 and 16.

ter of syphilis was an evidence of secondary contagion. Nurses also were often infected by nurslings. And, lastly, secondary syphilis had been transmitted by direct inoculation by MM. Vidal, Cazenave, Richet, and Boulet in France; by Mr. Wallace in England; and by M. Waller in Germany. These were the main points upon which M. Velpeau maintained the contagiousness of secondary syphilis.

M. Lagneau assented to the argument used by M. Velpeau. In his opinion, the contagious ulcer on the tonsil of M. L—, from which that gentleman had been syphilitised, was truly secondary, for a primary chancre in that position was altogether unimaginable. Moreover, syphilis in this case had developed itself in the usual course,—ordinary chancre in the ordinary place, roseola, ganglionic enlargements, and lastly ulcers in the throat. Secondary sores were not equal in contagiousness to primary sores, and all secondary sores were not contagious in the same degree. This, M. Lagneau contended, was established by many facts; but one unquestionable fact like that of M. J— was sufficient to explode M. Ricord's test of primary chancre—inoculation.

M. Ricord spoke disdainfully of any argument resting upon mere popular assent. Hereditariness, in his opinion, was no better proof of contagiousness in syphilis than in gout or cancer. Condylomatous growths were phenomena of primary syphilis, and therefore M. Velpeau's deductions from their easy transmissibility to parts with which they were in contact fell to the ground. It was very possible to confound the phenomena of primary and secondary syphilis. It was very possible for a nurse to become infected by other channels than the infant, and far more probable. It was even possible that the sore on M. L—'s tonsil might be primary in its character. Cazenave, Richet, Waller, and others had undoubtedly succeeded in inoculating with the matter of venereal eczema, but this eczema might be primary. Usually there would be no difficulty in the diagnosis, but this was not always the case. The primary chancre might have a papular, pustular, scaly, tubercular, or condylomatous form; and in many cases it was only the absence of contagiousness, and not the time of its occurrence, which formed the distinguishing feature of the secondary symptom. Inoculation, the only admissible test, had invariably failed to propagate anything but the original chancre, and this was the experience of many. A case also was known to M. Ricord, in which an infant with deep venereal ulcers on its lips had been nursed for eighteen months without the communication of any disease to the nurse, and the experience of MM. Natalis, Guillot, Nonat, Vepot, Rey, Couvier, Geux, and Cullerier, all of whom were well versed in the maladies of nurses and nurslings, was cited to show that this case was not exceptional.

M. Velpeau would not admit that the diagnosis of secondary syphilis was at any time so difficult as M. Ricord had represented, and he thought this gentleman as likely to be wrong as the others, particularly as he stood nearly alone in his opinion, and that without making any pretension to infallibility. He afterwards proceeded to show that some of M. Ricord's cases would not bear to be tested by his own rules of criticism, and then went on to cite cases in favour of his own view

from M. Bardinet of Limoges, Sommer of Copenhagen, Simon of Hamburgh, MM. Ferry, Henri de St. Arnaud, &c.

MM. Gibert and Roux adduced several cases from their own experience in confirmation of the same view.

M. Ricord retaliated by criticising the cases which had been adduced against him, and said he could not judge of those which were not in print. He satirically asked how it was that there were no stories on record in which nurslings had infected their own mothers, and insinuated that a ready and effectual mode of infection might often be found to have operated in ordinary nurses.

Such is a very condensed abstract of a debate, which occupied no less than six of the meetings of the Académie de Médecine, and here the matter rests until the report of the appointed commission is forthcoming. In the meantime we cannot but think that certain forms of secondary syphilis, under certain circumstances, are shown to be truly contagious, and that M. Ricord's dogma of inoculation as a test for primary chancre is effectually exploded.

3.—*The Simple versus the Mercurial Treatment of Syphilis.**—We leave it to our readers to form their own opinion as to the fairness of the subjoined comparison, of which Professor Bennett of Edinburgh is author, but we think they will unanimously agree that the mercurial plan of treatment described, is not that plan which is pursued by the great body of medical practitioners in this country.

The Simple Treatment is divided into internal or medical, and external or surgical. The first consists in the observation of certain hygienic rules, and the employment of general therapeutic means. The diet must be light and mild,—meat and all stimulating viands retarding the cure; even with the lightest diet, the hunger should never be quite appeased. The regimen must be the more diminished and rigid in proportion to the youth and vigour of the patient. Diluent beverages, decoctions of barley, liquorice, and linseed, alone or mixed with milk, should be taken freely, to the amount indeed of several pints a day. Perfect repose must be secured by confinement to bed. Constipation must be obviated by the use of emollient clysters or mild laxatives. The air should be maintained at the same temperature—this is an indispensable precaution in chronic, consecutive, and mercurial affections. Exercise is only useful in the convalescent stage. In chronic syphilis, however, it may often be carried to fatigue with advantage. Tepid baths, repeated three or four times a day, are always attended with advantage. General bloodletting is often required where the primary disease is intense, or the system excited and the patient plethoric, but should not be used indiscriminately.

In the external or surgical treatment, strict attention to cleanliness, and the position of the diseased parts should never be lost sight of. Emollient decoctions or fomentations, or dressings of simple cerate, are the best applications, and the dressings should not be too frequently renewed. Leeches are generally necessary. The greatest benefit is derived from the external use of a concentrated solution of opium (in the proportion of about ʒij to ℥ of water); it soothes excessive irritability in all cases. When the suppuration is moderated, and the surface of the ulcer cleansed, stimulating dressings,

* Edinburgh Monthly Journal of Medical Science, June.

consisting of solutions of the sulphates of alum and copper, the nitrate of silver, and sub-acetate of lead, favour cicatrisation.

In inveterate cases, more especially those labouring under tertiary symptoms, the iodide of potassium was introduced by Dr. Wallace of Dublin, and used by him with considerable success. I have myself given it in numerous cases with benefit, in doses of 5 gr. three times a day, conjoined with emollient applications to the affected parts.

The *Mercurial Treatment* consists in keeping up slight salivation, by means of the internal administration of blue pills or some form of mercury, sometimes conjoined with mercurial frictions or fumigations, at least for the space of a month. This physiological action of the drug may be produced by administering any of its preparations continuously in small doses. If combined with opium, they act less on the bowels, and more on the system generally.

It is necessary during its action that the patient do not expose himself to cold. A certain irritability is produced, and the constant soreness of the gums, the metallic taste in the mouth, not to speak of the inconveniences of profuse salivation which occasionally occur, render this species of treatment anything but agreeable to the patient.

Both kinds of treatment have now been extensively tested. In the year 1822, the Royal Council of Health in Sweden, having been charged by the king to conduct a series of experiments upon the different modes of treating venereal diseases, reports from all the civil and military hospitals were ordered to be drawn up annually. These reports establish the inconveniences of the mercurial system, and the superior advantages of the simple treatment. In the various hospitals of Sweden, 40,000 cases have been under treatment, one half by the simple method, the remaining half by mercury; the proportion of relapses has been, in the first instance, seven and a half; in the second, thirteen and two thirds, in one hundred. Dr. Fricke's experiments in the Hamburg general hospital were first made public in 1828. In four years, out of 1649 patients of both sexes, 582 were treated by a mild mercurial course, and 1067 without mercury; the mean duration of the latter method has been 51 days, and that by mercury 85. He found that relapses were more frequent, and secondary syphilis more severe, when mercury had been given. When the non-mercurial treatment was followed, they rarely occurred, and were more simple and mild when met with. He tells us that he has treated more than 5000 patients without mercury, and has still to seek cases in which that remedy may be advantageously employed. He has never observed caries, loss of the hair, or pains in the bones follow his treatment, and in all such cases which have come under his care, much mercury has been given.

In 1833, the French Council of Health published the reports sent in by the physicians and surgeons attached to regiments and military hospitals in various parts of France. Some of the reports are in favour of a mild mercurial course, others in favour of simple treatment. They all agree in stating the cure by mercury to be one third longer than by the other treatment. At Strasbourg, mercury was only given to very obstinate cases. Between 1831 and 1834, 5271 patients had been thus treated, and the number of relapses and secondary affections calling for the employment of mercury, has been very small. No case of caries, and only one or two instances of exostosis, have been observed. Full reliance may be placed on these facts, as regiments remain in garrison at Strasbourg for five or six years.

In the various reports now published, more than 80,000 cases have been submitted to experiment, by means of which it has been perfectly established

that syphilis is cured in a shorter time, and with less probability of inducing secondary syphilis, by the simple treatment.

These facts are now very generally admitted, and malignant syphilis is gradually disappearing. Twenty years ago, the most frightful secondary and tertiary cases were met with, and the usual treatment was profuse salivation. At present such cases are rare. Abroad, owing to wise police regulations, the disease is infinitely more innocent even than it is at present in Scotland; and under the salutary influence of a mild and simple treatment, its virulence is daily abating.

In appreciating the value of this important revolution in practice, we should not forget to eulogise those who had first the boldness to introduce it. The credit of this is mainly due in this country to Mr. Fergusson, and other British army surgeons, who practised it during the Peninsular campaign (*Med.-Chir. Trans.*, vol. 4)—to Mr. Rose of the Coldstream Guards (*ibid.*, vol. 8)—and to the late Professor John Thomson of the Edinburgh University, whose writings and lectures on this subject were mainly instrumental in convincing Scotch practitioners of the evils of mercury in this disease. In England, the Hunterian theory and practice have been deeply rooted, and in Ireland have been supported by the writings of Carmichael and Collis. The gigantic experiments made abroad, however, ought to convince the most sceptical—if not, let him compare what syphilis is in Scotland with what it was, and especially observe that we never see an instance in which the disease is unusually severe unless the patient's system has been contaminated with mercury.

4. *A New Operation for the Cure of Varicose-Aneurism.**—In this paper M. Malgaigne gives the particulars of a case of varicose-aneurism, in which he *tied the artery above and below the sac, by two separate incisions, without interfering with the sac or the integuments lying over it.* He then goes on to say that he supposed this idea to be his own, but that, on mentioning his case to his colleagues, he was informed by one of them that Dr. Norris, of Philadelphia, had carried out a similar idea ten years ago, and published the particulars in one of the journals of the time. This first case was also remarkable from the presence of an anastomotic communication with the sac between the ligatures, which communication became enlarged when the main stream was cut off, and so neutralised the success of the operation, obliging Dr. Norris in the end to resort to the old plan of cutting open the sac, and tying the bleeding orifices where he could find them. This remarkable accident had probably the effect of diverting attention from the operation in question, for the natural impression—natural, on account of the prejudice against novelty,—would be, that the cause of failure was in the operator rather than in the patient. M. Malgaigne, however, was more fortunate. He had no such fatality to contend with, and his success was perfect, as the following particulars will show.

The commencement of the paper is occupied by a number of details which go to show that the case was one of true varicose-aneurism, resulting from bleeding in the bend of the right elbow, all of which we may take for granted. It will suffice for our purpose, and impart all the requisite particularity, to note that the name of the patient was

* *Révue Médico-Chirurgicale de Paris*, March.

François Crotès, his age 42, the scene in the Hôpital St. Louis, and the date the 16th of July, 1850.

Operation.—Assisted by M. Rigal (de Gaillac), M. Malgaigne proceeded in the following manner, the patient being under the influence of chloroform at the time:

Having taken a seat at the side of the bed, he divided the skin *below* the aneurismal tumour by a longitudinal incision of sufficient length ($2\frac{1}{2}$ centimetres), and parted the subcutaneous cellular tissue, every precaution being taken to avoid the median basilic vein, and to keep it out of harm's way during the rest of the operation by drawing it aside with a blunt hook. He then divided the fascia on a director, to an extent corresponding with the incision in the skin, and having laid down the knife, proceeded with the same director to expose and isolate the vessel, which was readily distinguished by its beatings. He then passed the ligature, tied it, cut off one end close to the knot, and left the other hanging out of the wound. No vessel was wounded, and a few touches of a sponge sufficed to keep the wound perfectly dry.

This being done, M. Malgaigne at once proceeded to the operation *above* the tumour. An incision of the same length as the first was made in the course of the brachial artery, and as close to the tumour as could be managed without danger. The subjacent cellular tissue and fascia were divided with the same care, and the artery isolated and tied in the same manner. The arterial throbbing and venous thrill of the tumour, and the pulsations of the radial and ulnar arteries, ceased the moment the ligature was tightened. The edges of each wound were then *pinned* together in three places, and secured in contact by Indian-rubber loops passed over each pin; and a small pledget having been applied as a dressing, the limb was flexed at right angles, half-pronated, and placed upon a raised pillow, precautions being taken to prevent the temperature from falling in an unsafe degree.

In the evening the patient was very comfortable. There was a little numbness in the little finger, but the sensibility to pain was undiminished. The temperature of the fore-arm was completely re-established, and distinct pulsations could be felt in the radial artery. The tumour was perfectly motionless. The pulse 64.

In the night the patient did not sleep. He dozed from time to time, but pricking and lancinating pains in the wound kept him awake.

In the morning everything seemed favorable. The pains in the wound had ceased, and there was scarcely any tumefaction. Pulsations were distinctly perceptible in the collateral arteries of the elbow. The temperature was natural; the pulse 60; the appetite good. The middle pin was removed from each wound.

During the day the patient suffered a little after the removal of the pins, but he was relieved towards the evening. Still, he slept very little in the night.

On the morning of the 17th, he was calm, free from fever, with a regular and slow pulse (64). The four remaining pins were removed, when it was found that union had not taken place except in a portion of the inferior wound. Both wounds were dressed "à plat."

On the 19th the tumour appeared not so large or hard as before the operation; but it seemed to have increased a little in the last few hours.

On the 25th the superior ligature came away; and on the day following the other. On the 28th the wound was so far healed, that the patient was permitted to return home.

On the 8th of August the cure was complete. Every trace of the tumour had disappeared, and the only remaining inconvenience was a little stiffness in the elbow. A few weeks later even this had disappeared, and the limb had fully recovered its former vigour.

5. *The Treatment of Sprained Ankle by Cold Water.**—The following observations are taken from a long and valuable paper on sprains of the ankle which has been recently read before the Académie des Sciences, by M. Baudens, of the Hôpital de Val de Grace. They are preceded by some reflections upon the dangers of neglected and improperly treated sprains of the ankle, in the course of which it transpires that in sixty out of seventy-eight cases amputation of the leg was traced back to this cause. The practice of leeching and poulticing is then held up to reprobation, as having had much to do with these dangers. Afterwards follow several paragraphs on the causes, progress, prognosis, and morbid anatomy of sprains, through all of which we hurry without stopping.

The grand indication in the *treatment* is the prevention, and if this cannot be effected, the cure of inflammation, and in order to carry out this, rest and absolute immobility are indispensable. The other means will vary according to the stage and condition of the accident.

First Stage.—The prevention of inflammation, or the treatment of it if already set up, is, according to M. Baudens, a very simple thing. All that is required is a foot-pan and a plentiful supply of cold water, with a little ice or some artificial refrigerant when the weather is very warm or the temperature of the limb very high. Leeches, poultices, fomentations, and opiates are summarily set aside as useless and injurious, and purging and bleeding are said to be very rarely necessary. The patient is at once to be placed in bed with the leg hanging over the side, and the thigh prevented from slipping out by a pillow or cushion. A bandage is then to be carefully applied, and the bandaged limb, with the heel resting upon a sponge, is to be immersed in the foot-pan filled with water and placed conveniently for the purpose. The chief intention of the bandage is to keep the injured part moist and cool whenever it is temporarily removed from the bath.

The time during which it may be necessary to practise this immersion varies with the severity of the injury. If this be slight, *forty-eight* hours (rarely less), may suffice; if severe, a week, or a still longer period may be required. Of 39 severe cases treated at the Military Hospital of Val de Grace in the early part of 1851, the times of continuous or nearly continuous immersion were as follows:

* Gaz. Médicale de Paris, June 26 and July 24.

In 6 cases 5 days			
4	"	7	"
7	"	8	"
5	"	9	"
8	"	10	"

In 3 cases 11 days			
4	"	12	"
1	"	14	"
1	"	15	"

When the immersion has been practised sufficiently, a fact of which the patient will be certified by the cessation of pain and unnatural heat, the limb is to be taken out and laid upon oil-skin; but still the water is to be kept by the side of the bed, so as to be at hand if the inflammatory symptoms manifest any disposition to return. In fact, the immersion has to be left off gradually, or in other words to be recurred to occasionally and for a short time, after it has ceased to be necessary continuously.

The effect of this treatment, M. Baudens informs us, is to banish completely the symptoms of inflammation—pain, heat, redness, swelling, inflammatory fever, and so on, if these symptoms have already made their appearance, and to keep them away if they have not. The foot, towards the fourth day, becomes white, like the hand of a washerwoman, except where it is ecchymosed, and the only inconvenience which the patient suffers is from the restrained position, an inconvenience which is inevitable under such circumstances.

Properly employed, also, M. Baudens assures us that this mode of treatment is unattended with any risk. There would be great danger from repelled discharges, from gangrene of the foot, and from other causes, if the immersion were persevered in, until the body began to be robbed of its natural heat; but there is none so long as the unnatural heat remains—none even to the most delicate female at the most critical period. In a word, so long as it is agreeable it is perfectly harmless, and thus the feelings of the patient become our guide. The natural instincts point out the remedy and tell us when it may be dispensed with.

Second Stage.—When the inflammatory tendencies have subsided, the parts, for some time, are to be kept immovable by means of gummed bandages. M. Baudens prefers gum to dextrine. He also enters into some particulars as to the best mode of applying the bandage, of which it must suffice to say that he does not advocate the application in a single piece. He would first cut off a few short slips, and strap them over the parts which are not easily covered, before applying the bulk of the bandage.

The time required for the completion of the cure varies with the severity of the injury, but some approximative idea may be formed from the following particulars of 500 cases. Of these, the cure required from 12 to 20 days in 104; from 20 to 30 in 150; from 30 to 40 in 110; from 40 to 50 in 80; from 50 to 60 in 30; while in 26 additional cases in which the sprain was complicated with fracture of the malleolus, four or five months, or a still longer time, was required. All these cases occurred in the Hôpital de Val de Grace, and were, therefore, to a certain extent severe, for minor injuries are treated in the regimental infirmaries. In connection with these cases it must also be mentioned that in no single instance did the injury degenerate into caries, white swelling, or even permanent ankylosis.

M. Bauden's paper, also; is amply supplied with cases illustrating this particular mode of practice.

6. *The exaggerated danger of Wounds* of the Intestines, and the possible abuse of Sutures in their Treatment.*—The following cases are well calculated to afford some evidence that wounds of the intestines are less dangerous than they are usually supposed to be, and also to cast some doubt upon the practice of invariably using sutures in their treatment. The one shows that the natural support of the intestines and the abdominal parietes will of itself prevent or greatly limit the escape of fecal matters from the wounds; the other, clearly points out the dangerous irritation excited by sutures. The first case, with its valuable comments and references to past and existing authorities, is by Dr. Wolfred Nelson, of Quebec; the second (which is chiefly useful as showing that a wounded intestine may heal *in spite* of great artificial disadvantages), is by M. Stecchini, of Milan.

1. In the month of March, 1811, (writes Dr. Nelson,) I was requested to see a man, 60 years of age, who was reported to be at the point of death. "He was just brought in from the 'sugar bush,' where, for the last two days, he had suffered violent pains in the belly, could not go to stool, and was incessantly vomiting, and withal had a large swelling at the bottom of the body." From this brief detail, I at once inferred the existence of strangulated scrotal hernia. I found the man cold, bathed in a profuse clammy perspiration, with constant hiccup, very weak, and almost pulseless. He had for many years been affected with a scrotal hernia, and now it was the size of a quart decanter. After administering a large dose of laudanum and ammonia, and waiting some time for its anodyne effect, I proceeded with the utmost caution to reduce it by the taxis; but my efforts, though at first gentle, then more forcible and persevering, proved ineffectual. He was then told, that the only chance for his life was in an operation. This was at once submitted to. An incision was made a short distance from above the protrusion, and carried down to near the bottom of the scrotum, at least seven inches long; after a little careful dissection, the sac was punctured, and about an ounce of dark coloured serum spirted out; it was then opened from end to end, and immediately the bowel bulged out; it was of a deep chocolate hue, indeed it was so dark and livid, that I should almost have taken it to be mortified, if Traver's work on 'Injuries of the Intestines' had not been present to my mind. It was with the utmost difficulty I could insinuate the tip of my finger under the tight, hard edge of the ring; a slight touch with the bistoury caused the tense tendon to expand considerably, quite sufficient for any common case of rupture; it was dilated again and again, but the bowel would not recede, notwithstanding that I urged it forward with my expanded hands, gently, but persistently, it being so extremely tender and distended, that further effort, I apprehended, would cause it to burst, and thus make matters worse. Under this emergency, I at once plunged my lancet, transversely, in the bowel, when out gushed at least a pint of liquid feces and serum, and a good portion of gas; the bowel, perforated as it was, was returned into the abdomen; the wound closed, and a large soft compress was put over the inguinal region, and confined there by means of a broad flannel band, with which the abdomen was swathed. The utmost quietude was enjoined; nothing but a spoonful of tea or weak broth, at distant intervals, was allowed.

* 1. Canada Medical Journal, April; and 2, Nouv. Encyclop. des Sci. Med., July.

In the evening an enema was administered, which brought away some fecal matter and wind. Not a single unfavorable symptom occurred, and in a few weeks he was quite well.

Since that time I have punctured the intestine on a few occasions, and twice, perhaps, without absolute necessity, yet did not the smallest appreciable injury arise from the procedure.

When I performed the above operation, I had not seen John Bell's work on wounds—a work which will ever be looked upon as a standard and correct authority on the nature and cure of these injuries—else it might be suspected that I had, in a great measure, been guided by his remarks on wounds of the intestines. I was, however, influenced by the very same reasoning that induced him to come to the conclusion that injuries of the bowels were not so dangerous or necessarily fatal as it was thought they were in his day, and as they are deemed to be at this very period. This is the logic I used on the occasion. If wounds of the abdomen were so fatal, how comes it that a bullet has passed through and through the body without causing death; that the bayonet has a thousand times been pushed through the belly, and made its appearance opposite, and still the soldier lived; that the sword of the duellist has often pierced the antagonist, and pinned him to the ground, without killing him. Seeing, thought I, it was impossible that in all such occasions, the intestines and other viscera could escape injury, how was it that their contents did not flow out into the abdominal cavity? Because, I replied in my soliloquy (for I had no one to consult with), there is, in reality, no cavity or empty space there; all is filled up and kept in juxta-position by the abdominal muscles and atmospheric pressure, to overcome which it would require considerable distension in the bowels, or an increased or inordinate activity of the peristaltic motion. In this case, both stomach and bowels had been pretty freely emptied by vomiting of stercoraceous matter; and the collapse that would naturally ensue, and indeed existed, would, for a time at least, keep all in a state of quiescence, than which no event could be better adapted to prevent excitement and inflammation. On these grounds I felt pretty sure that there could be no effusion into the peritoneum, and little risk of inflammation. The result fully justified my expectations, if it did not completely confirm my reasoning on the subject.

Not long after the above occasion I obtained John Bell on 'Wounds,' and was highly gratified to find that he corroborated the views I entertained with regard to wounds of the abdomen. At page 324, 3d Ed., are the following remarks: "The whole mass of the bowels is alternately pressed, to use a coarse illustration, as if betwixt two broad hands, which keep each turn of the intestine in its right place while the whole mass is regularly moved;" and again, "we find a person, after a wound of the intestine, having free stools for many days; and what is it that prevents the fæces from escaping, but the regular and universal pressure?" On this, as on most other subjects, this eminent surgeon expresses his sentiments with peculiar clearness, a good sense that is at once convincing, and in a style that leaves a lasting impression. He thus explains the cause of the prompt healing of certain injuries of the bowels: "The tendency of the peritoneum to inflame is the chief cause of danger, as *also the only means of safety.*" "It is thus that in a few hours the adhesion is begun that is to save the patient's life."

On entering upon my career, Pott was the great authority of the day on surgical matters; one which on most important points in surgery is referred to, or cited at this very time as a sure and safe guide, and one that is not cast into the shade, even by that of Astley Cooper, Scarpa, or Lawrence; but still, it appears to me, that his ideas with regard to injuries of the intestines are

not characterised by his usual good sense, judgment, sound views, and discernment, and that they evince a pusillanimity that is little in harmony with his usual decision and boldness. Such was the dread he entertained of the smallest injury to the bowel, that a mere scratch would almost induce him to pinch the part up, and stitch it with a waxed ligature, lest, through the merest possibility, a single drop of intestinal fluid should escape. This sentiment led him to deprecate in the strongest terms any operation on the part. In Earle's edition of his celebrated works, vol. ii, p. 62, he alludes to puncturing the bowels in this wise: "There is another method of endeavouring to obtain relief in this case, which has been proposed by few, and I hope practised by fewer (though I have seen two patients upon whom it has been tried and were both destroyed by it); it is the making of several punctures with a round needle through the hernial tumour into the gut, in order, it is said, to let out the air which is supposed to distend the latter and prevent its return;" and then he adds, "it is really too absurd to waste either my own or the reader's time about it." Now, the causes of death in these two patients originated from the non-performance of the usual operation far more probably than from puncture by the round needles.

Although it may militate against the position I am disposed to assume, I fear not to cite Mr. Lawrence. He is quite as dogmatic on this subject as the illustrious Pott himself. He lays down this rule: "When a small opening is found in the intestine, we should pinch up the aperture, tie it tightly, cut off the ends close to the knot, and then return the bowel." A little further on he says: "Should the intestine receive a large wound, it might be necessary to employ ten or more points of suture, or to unite the parts by the uninterrupted suture."!!!

But if I have such high authority against me, I have, on the other hand, several great names to sustain the position I have assumed, besides a vast amount of experience that might be adduced. The distinguished German surgeon, Richter, says: "I have sometimes seen that such small wounds of the intestines in operation for hernia were little thought of, and were unattended with danger." The equally able Jobert asserts that "the intestine may be returned without suture, if the wound does not exceed three lines."

In Boerhaave's Aphorisms (314), we are told: "If the intestines are injured with small wounds, they may be left to themselves." His commentator, also, Van Swieten, states, "that even pretty large wounds of the intestines have been cured spontaneously, though they were sufficient to let out the contents." In another place, also, this indefatigable writer makes the following statement—one which is in direct opposition to the *dictum* of Lawrence: "If the bowel should continue distended with flatus, the distended part may be punctured with a needle in several places to discharge the flatus."

As a pendant to the above most respectable authority, and in support of the position I have dared to take, I shall transcribe from John Bell the following interesting case, to which Van Swieten refers also, namely, that "delivered by Mr. Lithe, in 1705. It is the case of a madman who stabbed himself with eighteen wounds in the belly, and of these eighteen wounds made with a long and sharp-pointed knife, eight penetrated into the cavity of the abdomen. Under the judicious treatment adopted, he recovered. But here lies the important point: eighteen months after, he threw himself from a high window, and died upon the spot. Upon opening the body, it was found, *first*, that the liver had been wounded, and had adhered in its middle lobe to the inner surface of the peritoneum; *secondly*, the jejunum had been wounded just

below the stomach, with a cut *half an inch* in length, across the gut, and this intestine, lying deep, was not pressed against the internal surface of the belly, but was kept in close contact with a contiguous turn of the same gut. The two turns of the intestine adhered to each other; on the one intestine was the scar of the wound, while the other turn of intestine, to which it adhered, was sound; *thirdly*, the right side of the colon had been wounded with a cut of *an inch in length*; the adhesion here was to the inner surface of the peritoneum by eighteen or twenty long thread-like tags of cellular membrane, arising from one of the greatest scars in the belly."

5. The main particulars of the second case are the following:—An Italian cabman, Prieri Bartholomeo by name, 38 years of age, healthy, and of good constitution, was stabbed in a drunken broil. The knife pierced the centre of the right iliac region, and penetrated without transfixing a knuckle of small intestine. The opening was large enough to allow a plentiful escape of worms and feces. The wound in the intestines was closed by an interrupted-suture, and the wound in the abdominal parietes by a twisted suture, the uncut extremity of the former suture being left hanging out of the wound. Bleeding with cold applications externally and ice internally were prescribed. During the first few days, there were continual vomitings and shiverings, with a hard irregular pulse. In eight days there had been sixteen bleedings from the arm. On the twelfth day, thirst and fever still continuing, twenty leeches were applied to the neighbourhood of the wound. Eight days subsequently the same number of leeches were applied to the anus, after which the symptoms amended. The external wound cicatrised about the fortieth day, when the pins were withdrawn. The ligature connected with the intestine came away about the eightieth day. Recovery was complete in six months.

III.

REPORT ON THE PROGRESS OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

BY DR. RANKING.

(A.) DISEASES OF WOMEN UNCONNECTED WITH PREGNANCY.

1. *Final Cause of Menstruation.**—Dr. F. Ramsbotham has published a short paper enunciating views which have given rise to considerable discussion. He admits to the fullest extent the ovular theory of Bischoff and Pouchet; but, in addition, he propounds the hypothesis, that the menstrual secretion and the decidua are convertible phenomena, the one or the other occurring according as impregnation does or does not take place. This identity of the two products, he thinks is established by the following considerations:—

An ovule, he observes, ripe for impregnation, parts from the ovarium and is grasped by the Fallopian fimbriæ. At the same time, nature establishes an action in the uterus for the purpose of preserving it, provided it becomes impregnated. In this case the fluid formed is retained in the uterus, and becomes gradually converted into deciduous membrane. If, on the contrary, for want of impregnation the ovule perishes, then this fluid, being no longer required, is allowed to pass away and becomes the menstrual fluid.

This view, the author thinks, is strengthened by the fact, that the menstrual fluid and the decidua seem both to be the product of the same tubular glands; that the decidua, when first formed, is a viscid fluid; and that, in dysmenorrhœa, a membrane is not unfrequently formed in the virgin uterus, which has very much the external characters of decidua; that those females who menstruate irregularly or painfully, are not so obnoxious to pregnancy as those in whom the function is normally performed; and that in lower animals, in which there is no menstruation, there is no deciduous membrane.

2. *Non-Menstruation.*†—Two cases of the entire absence of the menstrual flux, throughout the life of the females, have been placed on record by Dr. Oldham. The first was 48 years of age, and married

* Medical Times and Gazette, Jan. 17, 1852.

† *ib.*, March 27.

since the age of 15. Her external organs were normal, and she appears to have had fully developed sexual feelings. The second female was of the same age, and twice married. In commenting upon these cases, the author makes some pertinent observations on the moral questions connected with marriage, and on the rational indications for treatment. The latter, he considers, should be mainly constitutional, and if not successful, he considers it better to abandon treatment altogether, than to have recourse to some of the local measures recommended upon high authority.

3. *Chlorosis*.*—Dr. Kuchenmeister has recently stated his belief, that the essential cause of the chlorotic condition is retention of carbonic acid in the blood. In this opinion he coincides with Gorup Bezanek, who, contrary to the researches of Hannover and Valentin, has determined that the excretion of carbon is below the normal figure in this disease. Some support is afforded to this theory by a consideration of the circumstances under which chlorosis shows itself, and which may, in general terms, be referred to a privation of air and exercise, with consequent diminution of pulmonary exhalation. The result of these anti-hygienic conditions, is the surcharging of the blood with carbonic acid, and the gradual diminution of the proportion of red corpuscles.

The treatment usually found successful in chlorosis, though not founded on this theory, is in strict accordance with it.

4. *The Relations of Uterine and Constitutional Disorder*.—Under this title a very important essay has been contributed by Dr. W. Mackenzie, containing views which, although we do not entirely coincide in them, we nevertheless regard as worthy of attentive consideration. The bias of medical investigation has of late years led so decidedly to the adoption of the local origin, or at least intimate local causation of many female disorders, that it is more than probable that too little importance has been attached to the inverse opinion, that the local affections of the uterine organs may, in some cases, be of constitutional origin, and it is with the view of correcting this error, that Dr. Mackenzie has undertaken the series of papers which we proceed to analyse.

He observes, that the relations which subsist between uterine and constitutional disorder, have not received an attention proportionate to the importance of the question. "Recent doctrines have," he remarks, "concluded that local disease is the initiative in all the morbid conditions, local as well as constitutional, which are met with in the progress of uterine maladies; and consequently, local treatment has been too implicitly relied upon, to the exclusion of constitutional measures." Such views he regards as unconfirmed. He does not deny that uterine disease, when fully established, may react injuriously on the constitution; but he believes that if more minute inquiry were made into the earlier symptoms, they would be found to be constitutional rather than local. The question, as he states, is all-important, in reference to treatment.

* Quoted in the 'London Journal of Medicine,' Sept. 1852.

With the intention of throwing some light upon this, of late, warmly debated question, the author has compiled a laborious table of uterine cases, in which all the antecedents and concomitants, in their order and sequence, are rigidly tabulated. On analysing this table of more than 100 cases, he finds that it includes 37 cases in which the uterus was morbidly irritable; 52 of disordered menstruation; 65 of leucorrhœa; and 7 of organic disease. These were variously blended; but whatever their association, he finds that in nearly all, there were antecedents pointing to constitutional disturbance of one kind or other. In the majority, this disturbance was in the digestive functions; but in others, the nervous system was primarily deranged. So also in the concomitant disorders, he finds the chylopoietic organs almost invariably suffering, and that in nine tenths of the cases there was general anæmia. Altogether the general inferences made by him were to the effect that uterine disorder is, for the most part, preceded by constitutional derangement, referable especially to the nervous system, the digestive organs, and the blood, and that each of those systems exhibited associated lesions.

In further illustrating these views, the author enters upon a special consideration of the disturbances of these systems as initiative of uterine disorder, taking first disturbance of the nervous system. The author refers here to the valuable researches of Dr. Robert Lee, on the uterine ganglionic nerves, as affording a ready explanation of the mode on which mental and other nervous phenomena may react upon the uterine tissues; and he adduces several examples which clearly exhibit this mode of origin of uterine disease. The most usual mode in which nervous disturbance deranges the female organs is, in the author's opinion, by the intermediate induction of what has been termed *spinal irritation*. This condition is, he believes, a frequent sequence of mental depression, &c., and as frequently the starting point of the local disease.

The existence of spinal irritation as a distinct and idiopathic affection having been frequently denied, Dr. Mackenzie, before proceeding further, takes the opportunity of stating the grounds upon which he maintains its existence as a distinct disorder, and as intermedial in the case in point between the mental emotion and the ultimate uterine malady. For the latter purpose, he again has recourse to his tables, in which we find thirty-six cases preceded by mental causes, in seventeen of which spinal irritation existed to an unmistakable degree. In other twenty-six cases of spinal irritation, he moreover discovers that in twenty the disease was preceded by mental disturbance, as fright, grief, &c.

With regard to the particular forms of uterine derangement which are met with in connection with spinal irritation, Dr. Mackenzie states the following:—

Hysteralgia occurred in	.. 18	Amenorrhœa occurred in	.. 2
Dysmenorrhœa	.. 9	Leucorrhœa	.. 13
Menorrhagia	.. 4	Menstruation, irregular	.. 2

While, however, the author gives this prominence to spinal irrita-

tion as a cause of uterine disease, he does not regard it as the sole medium by which nervous derangement is conducive to these affections. Mental emotion, on the one hand, may act by inducing an impoverished state of the blood; and uterine disorder may, he admits, arise independently of mental or other nervous influences.

The next series of associated morbid actions passed in review by Dr. Mackenzie are those attaching to the *Chylopoietic system*, which in some form or other he maintains to be always present in uterine disorder, either as cause or consequence; so far, at least, he is borne out in this assertion, that such derangements are found to co-exist in almost every case in the table, while in the majority they appear to have been antecedent to the uterine symptoms. The chylopoietic derangements may, he informs us, either be very manifest, as those for instance succeeding to the ingestion of undigestible food, or they may consist of phenomena of less intensity, but still sufficiently obvious if carefully looked for. The more common forms are characterised chiefly by the aspect of the tongue, uneasiness in the epigastrium, irregularity of bowels and appetite, with restlessness at night, &c.

In speaking of the treatment of the gastro-hepatic derangements, the author passes in review the various classes of medicines ordinarily relied upon, such as alteratives, tonics, and sedatives, on the indications for the exhibition of which he furnishes many judicious remarks.

Having thus spoken of the intimate association of uterine diseases with disorders of the nervous and digestive systems, the author proceeds to illustrate his opinions by the detail of cases, which he divides into groups. In the first of these he places uterine diseases, attended by leucorrhœal discharges, in commenting upon which he takes the opportunity of criticising the views held by Bennett and others, which identify such uterine symptoms in most cases with certain inflammatory lesions of the os and cervix uteri. The author distinctly negatives these propositions, believing them rather to be indicative of what has been termed irritable uterus, and to be amenable to the constitutional treatment directed towards the rectification of the gastric disorder and spinal tenderness.

The second group of cases consists of those marked by derangement of the menstrual functions, as amenorrhœa, dysmenorrhœa, and menorrhagia. A third includes the organic lesions of the womb.*

The object of Dr. Mackenzie's paper then appears to be to point out first, that the uterine disorders so frequently met with in practice are commonly associated with, and are in a majority of cases the consequences of, disorder in other organs; and, by implication, that the treatment directed to them as local lesions, is uncalled for and wrong in practice. With every disposition to allow the correctness of many of the author's observations, we cannot consider that he has made out his case so far as to exclude the use of the speculum, an instrument so much and so unjustly derided by a party in the profession. Struck by the candour of Dr. Mackenzie's writing, and the ascertained truth of many of his observations, we have for some time past instituted experiments of comparative treatment of cases of uterine ulceration,

* London Journal of Medicine, Nov. and Dec. 1851; Feb. March, April, &c., 1852.

(for so we shall call it till a better name is substituted,) by constitutional measures alone, and by local treatment alone or combined. The result has been, we may say almost invariably, that where we have ascertained the existence of local lesions, the constitutional treatment, &c., has been futile, and that the cases which under such treatment purposely persisted in for weeks had been stationary, speedily improved as soon as recourse was had to local measures. But as it is our intention to make these investigations public, we shall not further allude to them.

The association of uterine with gastro-intestinal disorder, has also been illustrated in a short paper by Dr. Tunstall.*

5. Statistics of Uterine Disease.—A paper, which at the time excited considerable discussion at the Medical and Chirurgical Society, was not long since read by Mr. Pollock, in which he professes to give a statistical résumé of the lesions of the uterine organs observed by him in five hundred and eighty-three autopsies, of which number two hundred and sixty-five exhibited pathological conditions of the uterine organs. The varieties of disease are thus specified:—

Fibrous Tumours.—Out of 265 cases, thirty-nine were affected by the deposit or growth of fibrous tumours in the uterus. In thirty-eight of these cases the tumours were connected with the walls of the body of the uterus, either imbedded within them, or pendulous therefrom. In the thirty-ninth case the tumour was attached to the cervix. In twenty-one cases the tumours were single; but in one of these instances, in which the tumour was small, and in the upper part of the body, the os was much enlarged, and in structure resembled that of the tumour. In six of the twenty-one cases the tumours projected into the cavity of the uterus, one very large, without a pedicle, and three were pendulous; one of which latter had so distended the uterus and vagina, that death followed sloughing of the vagina, urethra, and neck of the bladder. In eighteen cases the tumours were double or more numerous, and in five of these some of the tumours projected into the cavity. In two of these cases the tumours had escaped into the vagina, and were much ulcerated on their surfaces. In one case a calcareous covering surrounded the tumour, and a similar kind of deposit was observed in its interior. In one case two tumours projected into the cavity of the peritoneum, and, connected with the uterus by thin, long pedicles, they readily moved in the abdominal cavity. In a second case, a large tumour attached to the anterior wall projected into and filled the pelvis. In two cases ligatures had been applied to the pedicles of tumours. In one case the patient died *before* the separation of the tumour; in this case there was a second tumour; in the other case there was no second tumour; the patient died of peritonitis *after* the separation of the tumour. The age of the youngest person in whom the fibrous tumour was found was twenty-six; and this was the only case under thirty. Several were between thirty and forty; the oldest was sixty-eight. Taking the 583 cases as the guide, the average of women affected by this disease is nearly seven per cent.

Cancer.—Cancer of the uterus existed in thirty-eight cases, not, however, confined to the uterus alone, but implicating, in many instances, the adjoining parts. In twelve of these cases, "cancer" of some other viscera

* Provincial Medical and Surgical Journal, Dec. 1851.

(not including the organs of generation) was present; and in four of these cases the breast was affected. In twenty-three of these cases, more or less ulceration existed; and in nine of them some communication had been formed, either between the uterus, bladder, vagina, and rectum. In one case, ulceration had occurred into the cavity of the peritoneum; and in a second case, the peritoneum between the bladder and rectum was nearly perforated. When cancer exists in the uterine organs, with ulceration, sudden collapse coming on, followed rapidly by death, may thus be accounted for and anticipated, especially when the disease is confined to the upper portion of the uterus. A lady was suddenly seized with pain of severe character in the region of the left groin; this continued unabated, and independent of all remedies. About the end of two months, it suddenly subsided, after the discharge of pus from the vagina, but shortly recurred, and continued unrelieved. Within four months of the first symptoms, she died; and only within two days of her death did alarming symptoms appear; these were chiefly of great depression. After death, a small encephaloid tumour was found in the upper part of the uterus, softened in its interior, discharging very slightly into the uterus; but the peritoneal covering was just perforated, and allowed the suppuration from the tumour to escape into the abdomen. In fifteen cases, the cancerous matter existed as tumour, without ulceration. Six of these presented all the characteristics of scirrhus; in each case there was generally more than one deposit or tumour. In one case the scirrhus deposit was infiltrated among and in the pelvic viscera. In one case, they were simply small scirrhus tubercles of the vagina in the submucous tissue; but there also existed, in this case, encephaloid disease of the liver. In six out of the fifteen cases, the form of deposit was encephaloid. Four cases were affected with encephaloid tubercles in the walls of the uterus; and in one the encephaloid matter was infiltrated in the substance of the uterus. In one case, the deposit was of the colloid variety. The youngest person in whom cancer of the uterus was found, was twenty-three years of age; she was also affected with cancer of the breast. A second case was twenty-seven. The oldest sixty-two years old.

Results of Pregnancy and Abortion were observed in nineteen cases. In most of the cases of abortion the uterus was larger than usual, in some being the size of the head of a full-grown fœtus. The muscular structure, in several cases, was found much softened, flaccid, and readily lacerated; the mucous membrane often dull-coloured, congested, and even in one case gangrenous. In most cases there were traces of the adherent part of the placenta to be observed, and a shreddy appearance of the inner surface of the part corresponding to this position. In two cases abortion followed operations for strangulated hernia: in two cases erysipelas appeared the immediate exciting cause; in one case the complication of epilepsy existed; the abortion was most probably owing to diseased placenta, the latter being in the condition commonly known as hydatid placenta. In one case an encephaloid tumour appeared to be the urgent cause of abortion. In one case of cancer the fœtus had apparently been dead for some time, but was retained. In one case syphilis was the apparent cause of abortion; five cases were attacked by peritonitis, subsequently to abortion, and death ensued; four were fatal from phlebitis. In one, retroversion following delivery, the uterus became so wedged in between the rectum and bladder that retention of urine, most extensive dilatation and inflammation of the bladder, and subsequently sloughing of the whole urethra and surrounding cellular tissue, took place and produced death.

Alterations in Structure of the uterus were observed in twelve cases—

alterations which were of a doubtful character; that is to say with some suspicions of cancer, or dependent on external mischief. Three cases gave evidence of induration of the substance of the uterus, one being extremely hard, not enlarged, in a person sixty-four years old. One in the body and neck was so hard, that it was cut with great difficulty; this was in a person aged twenty-five. One in which the posterior lip only was remarkably hard. In one case the body was much enlarged, the neck elongated, and structure indurated; the neck and lips were extensively ulcerated and flocculent in a person twenty-six years of age. In one case the cervix was remarkably hard, and of a dense white fibrous structure; this patient also had encephaloid disease of the breast. In these cases, the structure of the uterus was found softened—one in a case of dropsy; another after peritonitis following removal of an ovarian cyst. In one case, obliteration of the greater part of the cavity had occurred in a person thirty-seven years of age. The uterus was partly destroyed in one case by an abscess in the pelvis, and in another much congestion of the interior of the uterus attended an abscess in the neighbourhood.

Alterations of Form, Size, or Position of the Uterus occurred in twenty-nine cases. In three, position was altered: one was elongated, and drawn towards a hernial sac; one was anteverted, and one displaced by an ovarian tumour. In sixteen some enlargement occurred: one in the case of a girl, seventeen years old, affected by chorea; one in a case of menorrhagia. In a case of phthisis, the cervix was thickened and neck elongated. The uterus was found enlarged in one case of diseased heart; in a case of scarlet fever; in one case of dropsy; one in a case of pneumonia; two in phthisis; two in fever; three were of twice their natural size; in one case the uterus was drawn upwards by a tumour, and its cavity thereby dilated. In eight cases the uterus was smaller than usual, most of them being under twenty years; one case occurred in a woman aged sixty-four, a condition of atrophy not very rare in advanced life; in two cases extensive prolapsus had occurred.

An unusual condition of the Cavity of the Uterus, without actual Disease, occurred in six cases. Bloody fluid existed in the cavity in four cases, apparently menstrual. It has often occurred to the author to examine the bodies of women who died during menstruation, but he failed to discover any evidence of the local secretion. [This is surely at variance with general experience.—Ed.]

Congestion of the Uterus was found in twenty-one cases. They apparently depended on, or coexisted with, general disturbance. There was no alteration of structure.

The Mucous Membrane of the Vagina and Os and Cervix Uteri was observed to be diseased or altered in its condition in twenty-three cases. In fourteen there was some resemblance to ulceration. Two of these were cases of diseased heart. Two cases accompanied disease of the kidneys: in one, the membrane of the vagina and os was congested, and on the side of vagina and os were several aphthous ulcers; in the second, the membrane of the vagina and os was greyish and thickened, and covered with purulent secretion; on the posterior lip were two small ulcers. In a case of chronic peritonitis, the os was congested and superficially ulcerated; in the interior of the upper part of the body of the uterus, a small spot of ulceration existed in the mucous membrane. In a case of *rheumatic fever*, in the cavity of the uterus, there was a small ulcerated spot. One small superficial ulcer of the os occurred in a case of pneumonia. Two instances of superficial abrasion and minute ulcers of the os, occurred in fatal cases of "fever." In two cases of diseased liver, there was abrasion of the mucous membrane round the os, in

one; in the other, the os was congested, and superficially ulcerated. In a case of phthisis, the follicles of the os were inflamed and ulcerated. In one case, superficial abrasion of the posterior lip, with two cicatrices of the posterior wall of the vagina, was accompanied by abscess of the pelvis. In one case, extensive ulceration of the side of the vagina, communicating with diseased bone. In nine cases, the alteration was not attended with ulceration. In one case the mucous membrane was pulpy, after erysipelas. In three cases, it was vascular about the os, one being in a case of diseased heart, one in phthisis, and one in inflammation of the brain. In a case of diseased heart, the mucous membrane of the uterus was congested, and blood effused underneath it at the os; in another case, the membrane was covered with pus, and the sub-mucous glands enlarged—gonorrhœa was the supposed cause of the inflammation of the parts. In a case of diseased heart, the mucous membrane was covered with a white reticulated secretion. In one case, it was thickened, congested, and formed a flat, vascular prominence, in a woman 80 years old. In one case, several little pendulous mucous tumours hung from the inner surface of the neck.

Scrofula of the Uterus existed in five cases. In a girl at 16, the cavity was filled with scrofulous matter, and the lining membrane entirely destroyed; the Fallopian tubes were also distended with the same secretion; the deposit did not extend beyond the os. There were also scrofulous tubercles in the brain and lungs. The second case was associated with phthisis. The inner surface of the uterus and Fallopian tubes was ulcerated, and their cavities filled with scrofulous deposit. The third case of a girl, aged 18, had extensive deposit in the uterus and tubes; the ovaries also had deposits of scrofulous matter in them, and there was general scrofula. The fourth case occurred in a person aged 39, was of a similar nature as regards the uterus, and was attendant on phthisis. The fifth case had the deposit round the body of the uterus, not in its cavity or substance; it was also accompanied with phthisis.

Mucous Polypus was found in one case, connected to the posterior wall about half an inch within the os.

Imperforate Vagina occurred in one case. The occlusion depended on the obliteration of about an inch and a half of the vagina. The case was operated on, and died soon after the operation and evacuation of the contained fluid.

Extra-Uterine Fœtation had occurred in one instance; death followed rupture of the Fallopian tube, in which the fœtus and placenta had been contained. The tube burst into the peritoneal cavity, and extensive hæmorrhage followed. The fœtus was found in the cavity of the peritoneum.

Fistula between the Vagina and Rectum was seen in one case affected with phthisis.

Tumour of the Urethra occurred in one case. It was about the size of a hazel-nut, of a dark venous colour, apparently not cancerous, and sprung from the inner surface, close to the orifice.

The Fallopian Tubes and Broad Ligaments were affected in thirteen cases. In two instances they were bound down by adhesions. In one case a simple fatty tumour was found in the tissue of the broad ligament. In four cases, simple serous cysts were connected with the broad ligament. The subjects, in three of these, were under 21 years of age. In one case, the extremity of the Fallopian tube was filled with pus; in another, a cyst, with pus, was situated in the cellular tissue of the tube. The Fallopian tube was obliterated at the inner extremity in one case, and at its other extremity dilated into a cyst filled with inky fluid. In another case, the extremity was dilated, and contained dark fluid; but the tube was pervious.

Tumours of the Ovaries not Cancerous were found in four cases. One case had a cartilaginous tumour in both ovaries. In one ovary a fibrous tumour was found; the uterus being at the same time similarly affected. In two instances calcareous masses were deposited in the ovaries.

Cancer of the Ovaries existed in eighteen instances; six were of the encephaloid variety, and solid in structure; eight were encephaloid combined with cysts. In four cases the ovaries were the seat of scirrhus. Out of eighteen cases, four were affected with cancer of the breast; in four the uterus was also affected; and in one case there was a cancerous tumour of the abdomen. In nine cases the ovaries were alone the seat of cancer. The age of the youngest affected was 22; the age of the oldest, 63.

Cysts of the Ovaries occurred in fifty-one instances. In thirty of these the cysts were of the simple serous kind; in fourteen there existed but a single cyst; in sixteen there were more than one. In seven cases the cysts were complicated with abscess; out of these, in one, there was a clear cyst of the left, and pus in a cyst of the right ovary, (after ligature of a uterine polypus.) In one the abscesses were multilocular, and on one side opened into the rectum. In one, a large cyst filled with pus occurred after phlebitis; in another, pus in a cyst attended cancerous ulceration of the uterus. In one case cysts occurred on both sides, some clear, others filled with blood, and one contained pus, (after ligature of uterine polypus.) In one case a cyst of pus and putrid lymph was complicated with fibrous tumour of the uterus. In one case both ovaria contained cysts with pus, apparently scrofulous, in a case of phthisis. In three cases "congenital cysts" were found; their contents were, fatty matter, hair, and spiculae of bone. In five cases cysts of the ovaries contained blood; two of these cases occurred in young women who suffered from chorea. In a multilocular cyst of the ovary, cholesterine mixed with thick, tenacious fluid was found. In one case a large cyst had been removed during life; the patient did not recover from the effects of the operation. In five cases the cysts were complicated with solid matter. In one the ovaries converted into cysts had solid growths springing from their interior; the cysts communicated by a sinus with the rectum and bladder; this in a girl 16 years old. The left ovary was affected by a compound cyst, with a large proportion of solid matter, in one case, while the right was affected with a simple serous cyst. In another case the left ovary contained a large clear cyst; the right was converted into one with thick cartilaginous walls, containing calcareous matter. In one case the right ovary presented an enormous mass, partly solid, partly cystic. In one the ovary was converted into a large cyst with growths within, one of the latter being filled with pus.

Scrofula of the Ovaries was found in four instances. In one both ovaries were greatly enlarged and filled with scrofulous matter and pus; there was also scrofulous disease of the peritoneum. In the second case both ovaries were filled with scrofulous matter; there was also phthisis. In the third, the right ovary was a large thick cyst, containing scrofulous matter; the left, smaller, was similarly affected, and there was also tubercular deposit in the lungs. In the fourth case scrofulous matter was deposited in both ovaries, and there were other and general scrofulous deposits. The youngest person affected with scrofulous deposit in the ovaries was 18; the oldest, 23.

Congestion of the Ovaries was seen in seventeen cases. Three of these occurred in cases of "fever;" one in a case of chorea in a girl 15 years of age. In two cases, the veins were varicose, dilated, and congested. In two cases, extravasation of blood was observed. A clot of recently extravasated blood was found in the ovary of a woman aged 50; and spots of extravasation speckled the surface of the ovaries in a woman of 40.

Adhesions of the Ovaries were observed in thirteen cases; in two, apparently from proximity of cancer; in one, from numerous vesicles in each. The youngest case in which adhesions were found (exclusively of those associated with cancer) was 25; and in eighteen instances the respective ages were under 40. The influence of this condition of parts in the production of sterility, with many other conditions already mentioned, should indicate precaution in the use of instruments, advocated by some practitioners, to overcome the mechanical obstructions which interfere with impregnation.

Displacement of the Ovary was observed in one case; it was adherent to a hernial sac; it was observed in the sac during life, at the time of the operation for the hernia.

Atrophy of the Ovaries was observed in ten cases. In one case, 28 years of age, very little trace of the ovaries was found, in connection with a pelvic abscess. In one case, they were absorbed by the presence of a tumour. In one case of 49 years old, and in another of 80, they were observed atrophied.

In the discussion to which this paper gave rise, Dr. Murphy, who was one of the earliest speakers, observed, that the proposition attempted to be established was, that ulceration, inflammation, and hypertrophy of the os and cervix uteri, those lesions, in fact, which require the speculum for their diagnosis and treatment, are very rare diseases, and that they are constitutional diseases requiring only constitutional treatment. To this conclusion, as arising out of the evidence given, Dr. Murphy objected as unworthy of confidence. He subjected the records of Mr. Pollock to a searching analysis, whereby he endeavoured to demonstrate that, in reality, the results of inflammatory action of the os and cervix, were far more numerous than had been stated, amounting in fact to 62 instead of 23.

The importance of Mr. Pollock's paper was next spoken to by Dr. Lee, who commented upon the light it threw upon the history of fibrous tumour and cancerous degenerations of the womb. The speaker reiterated his well-known views respecting the non-existence of simple inflammatory ulceration of the cervix, and again spoke in strong terms against the treatment by speculum and caustic.

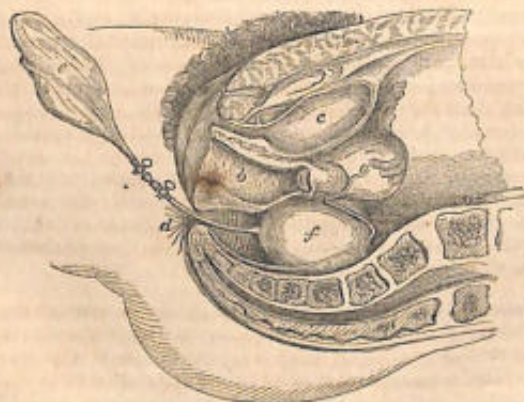
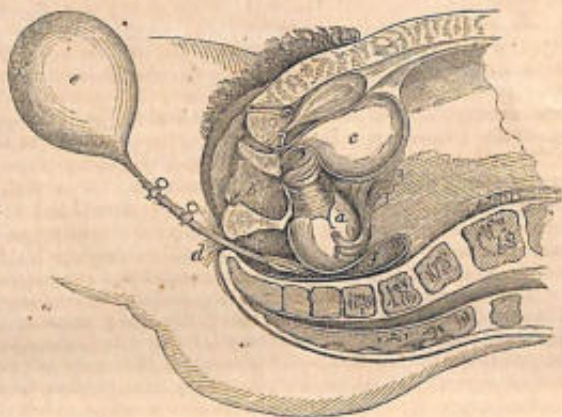
Dr. Bennett, in opposition to the deduction from the author's paper, laid before the society the results of some examinations made by Mr. Holl, which showed, that in 44 cases in which the state of the uterus was examined, 9 presented more or less extensive abrasion of the epithelium around the os uteri.*

In connection with this obstetrical battle-ground, we call attention to valuable researches of Dr. Tyler Smith on the pathology of leucorrhœa, which will be found among our abstracts in the present volume; and also to a paper, by Dr. Snow Beck, on inflammation of the vagina.

6. *Retroversion of the Uterus*.—Our former volumes contain frequent references to various projects for the reduction of this malposition of the uterus, the chief of which is the uterine pessary of Dr. Simpson. This instrument has, however, not met with general approval, suspicions being entertained that the presence of a foreign body in the cavity of the uterus is likely to cause serious general as

* Reported in the 'Lancet,' Feb. 7, 1852.

well as local disturbance. We have no experience on which to offer a personal opinion as to the merits of this instrument; but we think that Dr. Simpson's character and reputation demand other treatment than he has met with in reference to it. Be this as it may, however, these objections cannot apply to an instrument devised by M. Favrot, which instrument consists of a caoutchouc-bladder to be introduced into the rectum, and then inflated by means of an India-rubber bottle with stop-cock, &c. The form and size of this instrument are illustrated in the accompanying diagrams, which represent a vertical section of the female pelvis. In fig. 1, the flaccid bladder is introduced into the rectum



a. The uterus. b. The vagina. c. The bladder. d. The rectum. e. The India-rubber bottle connected, by means of the stop-cock, with f. the caoutchouc bladder introduced into the rectum.

beneath the retroverted fundus; in fig. 2 the bladder is represented as inflated and raising the womb into its normal position.

The actual advantages of this instrument are described by M. Favrot in a case reported in 'The Gazette Médicale,'* in which the uterus had been so long retroverted as to have contracted adhesions; nevertheless, by the persevering use of this instrument, it was gradually redressed.

7. *Sanguineous Uterine Tumours.*—In addition to the compendious account in the 'Révue Med. Chir.,' October, we may mention that the Surgical Society of Paris has recently been occupied with the same subject. M. Monod detailed a case which, in most particulars, simulated retroversion of the womb, but which proved to be a collection of blood in the utero-rectal cellular tissue. The tumour was punctured, and gave issue to semi-coagulated blood; the patient, however, sunk from peritonitis. M. Nelaton stated that he had met with six instances of the disease, and described the symptoms as being ambiguous. The effusion generally appears first in the recto-vaginal cul-de-sac, whence it may extend into the iliac fossæ. In several of his cases free incisions were necessary to evacuate the extravasated blood.

M. Robert believes that these extravasations are formed gradually, a fresh addition being made at each menstrual congestion. He also spoke of the resemblance of the tumour thus formed to the retroverted fundus. The diagnosis is made out by the aid of the uterine sound. It is still more difficult to distinguish them from pelvic abscess, especially when the broad ligaments are implicated. In attempting the evacuation of these large collections of blood, M. Robert prefers puncture with a trocar to incision with a bistoury. He speaks of one case in which the extravasation formed a tumour reaching nearly to the umbilicus, with great exhaustion and severe expulsive pains. In this case puncture was resorted to several times.

According to M. Hugier these extravasations may be situated between the uterus and rectum, or in the lower part of the peritoneum. He divides them into two principal classes:—1. Those situated beneath the peritoneum in the cellular tissue, which unites the uterus and rectum, and extends on each side to the uterine appendages. 2. Those situate in one of the uterine appendages, and involving several varieties, such as—*a.* The pseudo-hæmatoceles which result from extra-uterine conceptions arrested in the second or third month. *b.* Retention of blood in the genital cavities, or in the recto-vaginal cul-de-sac. *c.* Hæmatocele arising from rupture of the ovarian blood-vessels. The symptoms are a tumour in the posterior wall of the vagina, with obscure fluctuation.

8. *Excision of the Uterus.*—A case in which excision of the uterus for prolapsus of the organ was performed by Dr. Cazzo is translated in the 'New-York Medical and Surgical Journal' for November. The woman had a narrow escape of her life, but ultimately recovered.

9. *The Results of Operative Interference in Ovarian Diseases.*—In

* Juillet, 1852.

addition to the communications on the diagnosis of ovarian diseases found among the extracts in the present and precedent volumes, we may mention that Dr. Robert Lee has furnished an analysis of 162 cases of the disease, with the results of operative interference. His opinions are, however, so amply detailed in a discussion on the same subject, which may be found in one of our former volumes (vol. XII), that they need not here be repeated.

10. *Merits and Demerits of Ovariectomy.*—Not the least interesting addition to the literature of ovarian diseases and their treatment, is the review of the subject which appeared in the 'British and Foreign Medico-Chirurgical Review,'* written as all the articles in our contemporary are, with impartiality and ability.

The conclusions to which our author arrives are these:—

1st. That in any cases in which it is considered advisable to remove an ovarian tumour, it is justifiable to make a small preliminary incision into the abdomen, for the purpose of determining whether the tumour be adherent or not.

2d. If the tumour be adherent, the incision is to be immediately closed, or to such an extent as merely to leave an aperture the size of that made by an ordinary trocar, and we may then expect this operation not to be more fatal than tapping.

3d. That where the tumour consists of a simple cyst or cysts, with but small solid deposit, it may be extirpated with as good a chance of success as attends the performance of the more serious surgical operations.

4th. The existence of much solid deposit, or of extensive adhesions, absolutely forbids the operation.

Finally. The reporter believes that Mr. Wilson's plan of tying each vessel in the pedicle separately, instead of the ligature round the pedicle, is an important improvement.

11. *Cases of Ovariectomy.*—We find two cases of ovariectomy reported subsequently to our last notice, one of which was successful, the other fatal. We also know of a third and fatal case, at present unpublished.

*The successful case, which was under the care of Dr. Tanner, is as follows:—

Mary H—, aged 56, admitted into the Hospital for Women, January 5, 1852. The abdomen is distended by a large uniform tumour, in which fluctuation is perceptible. She was tapped, and two pailfuls of dark grumous fluid removed. Extirpation was performed on the 22d of April. Dr. Tanner made an incision three inches in length, commencing about two inches below the umbilicus. Having opened the peritoneal cavity, and the absence of adhesions being ascertained, a trocar was plunged into the cyst, and a large quantity of chocolate-coloured fluid drawn off. The collapsed walls of the sac then advanced, and gradually protruded through the wound; but as there was apparently some solid matter at the lower part of the cyst, the incisions had to be enlarged to admit of its extraction. This being done, the whole of the tumour was drawn out of the abdomen; and a ligature of strong twine having been placed around the pedicle, the latter was divided, and the mass

removed. On examining the pedicle afterwards, there appeared to be a little sanguineous oozing; another ligature was therefore tightly applied below the first. The left ovary was found to be healthy. The edges of the wound were then brought accurately together, and interrupted sutures applied at about the distance of half an inch from each other; the two ligatures around the pedicle were left hanging out at the lower part of the wound; no strapping or bandage was applied—merely a strip of wet lint. The patient vomited towards the end of the operation, and appeared much depressed by the chloroform; she soon rallied, however, and was drawn into the bed. Her pulse was 90, just before the operation, and 100 afterwards. Very little blood was lost. The temperature of the room was raised to 75° F., and this degree of heat was subsequently kept up for the ensuing two or three days. Two grains of solid opium were administered, and she was allowed a small quantity of ice to check the thirst and nausea. Two hours after the operation she complained of feeling chilly; her skin was cold, and the pulse had fallen to 54. She soon became warmer, however, after taking a teaspoonful of brandy, and being covered with a couple of blankets; and at 11 o'clock, P.M., she was in a gentle perspiration, free from pain, and inclined to sleep, with her pulse beating 100. About half a pint of urine was withdrawn by the catheter, in order to avoid the necessity of altering her position, and one grain of opium administered; the wound was dressed with water-dressing.

On the following morning, at 8 A.M., she stated that she was very comfortable, having passed a good night, and being free from pain and uneasiness. The tongue was moist, rather furred; pulse full, 120. Half a pint of healthy-looking urine was withdrawn by the catheter. To have one grain of opium again, and to take nothing but the ice. During the day, the opium pill was repeated, and she was allowed a small teacupful of gruel; and in the evening she was found very easy, having passed her urine voluntarily, and with her pulse 126. She took another pill and a little more gruel.

On the 24th of April she was reported as doing well, having again passed a good night; her pulse was 120. During the day, she took some gruel, a cup of cocoa, and about twenty drops of brandy, in a little iced water, every two hours. At night she had a pill containing one grain and a half of opium.

April 25th.—Doing very well; no pain or tenderness; pulse 120. Removed half of the sutures, and applied some strapping. To have a grain and a half of opium powder at bedtime.

26th.—Progressing favorably; bowels open this morning naturally; pulse 120, rather weak. Removed the remaining stitches; the wound appears healed. Applied some strapping and a bandage. To have some beef-tea, and a teaspoonful of brandy, every four hours.

27th.—Is not so well to-day: she has been sitting up in bed, and exerting herself more than she ought to have done; the consequence is, that the wound has gaped a little, and it is necessary to introduce some fresh sutures; her bowels have also been relaxed this morning; she is very weak; pulse 120, feeble. To omit the ice and brandy, and to have a wine-glassful of port wine every six hours; mutton broth, &c. During the day, she took three grains of opium.

28th.—Is better; bowels have not been open since yesterday morning; wound looks healthy. To have a boiled sole for her dinner. One grain and a half of opium at bedtime.

From this time the amendment continued to progress, her appetite improved, and she rapidly gained strength, so that on the 10th of May, eighteen days after the operation, she was enabled to leave her bed. On the 21st of

May, one of the ligatures came away from the pedicle; and in a few days the second was withdrawn; after which the wound firmly healed. On the 11th of June she went into the country, and returned to London on the 14th of July, well and strong.

The unsuccessful case occurred in St. Mary's Hospital, under Mr. I. B. Brown.*

The patient, Eliza D—, aged 50. The abdomen had obtained the size of a six months' pregnancy. On June 16th she was narcotised by chloroform. Mr. Brown then made an incision three inches in length just below the umbilicus. The cyst being brought into view, it was tapped, and pus and blood exuded in small quantity. It was therefore requisite to puncture the tumour again, which was done several times in different places, but the fluid was scanty, and of the same character.

Mr. Brown now passed his hand between the integuments and the cyst, isolated the latter thoroughly from the skin, and the original incision was gradually enlarged, so as to allow the greater portion of the tumour to be grasped. The remaining adhesions were freed by the hand running round the mass; and by a little tilting and nice management, the whole mass, the size of about two men's heads, slipped out of the abdomen, being then only retained by the Fallopian tube.

The abdominal cavity was, by the displacement of the tumour, brought fairly into view, the greater portion of the small intestines being laid bare, owing to the extent of the incision in the walls of the abdomen. The bowels necessarily remained for some time exposed, while the mass was further separated from the surrounding parts, and the ligature applied to its pedicle. Mr. Brown used a strong thread to secure the latter, whilst the assistants held the huge tumour which had just been dislodged. The pedicle was found very thick; the ligature was tightly drawn, and the Fallopian tube divided between the ligature and the cyst.

Mr. Brown very carefully examined the cut surface, in order that no bleeding vessel might escape attention; the bowels, which looked rather congested, were gently returned into the abdominal cavity, one omental vessel tied, and the lips of the wound carefully brought together, as in the first case. During the whole of this operation, which lasted about three quarters of an hour, the patient was kept completely narcotised.

When the woman had been removed, Mr. Brown stated that the tumour, on being put into the scale, was found to weigh eleven pounds and three quarters, independently of the fluid which had escaped or drained away. The whole mass was of a semi-solid character, and presented on a section a kind of honeycomb appearance, the cells being filled with an oleo-gelatinous substance.

For the following details connected with the progress of this patient we are indebted to Mr. Umphelby, the registrar:—

At nine, P.M., the patient complained of a good deal of pain; there had been no sleep, and the abdomen was a little increased in size. She mentioned the bandage again as being too tight (about four hours before she had had it loosened.) Pulse 100, soft; respiration 36; very little abdominal movement, and a little tenderness; knees drawn up. Calomel, five grains every fourth hour; powdered opium, two grains every second hour.

Second day.—At twenty minutes past one, A.M., the patient was sick and vomited about one pint of watery fluid tinged with green; after this she

* Lancet; Sept. 1832.

became easier, and at two A.M., she was bled to twenty-four ounces. The blood was buffed, and she became faint; pulse 120, small and feeble. The patient stated that she now felt easier, and was able to take a deep inspiration with less pain than before the bleeding. The skin became, however, cold, she had clammy perspiration, and was sick when then the blood ceased to flow.

Third day.—Occasional sickness, but the patient does not complain of much pain. She takes hydrocyanic acid and soda, and occasionally quinine. Slept at intervals quite comfortably, and improved in appearance. Pulse 130, small and feeble. Arrowroot, beef-tea, and a little brandy, which is taken without sickness.

Fifth day.—Pulse 126, small, somewhat less feeble; has had some sleep; some sutures were removed; no tenderness of abdomen; a fresh layer of plaster is now applied. Soap pill ten grains, as a suppository.

Sixth day.—Much flatus; slept for one hour; abdomen softer and smaller; pain in the left side from distension of the stomach; six sutures removed; fourteen had originally been applied; sickness occasionally; bowels open; one suture removed at the upper part of the external wound; non-union at this part; pulse 114. Two, P.M.: Several sutures removed. Ten, P.M.: During a fit of vomiting in the afternoon the plaster gave way, and the lips of the wound separated completely, exposing the intestines, which were covered with lymph. The edges of the wound were now pared and brought together by four sutures; after this the poor woman felt pretty comfortable.

Eighth day.—Better; some sleep; less sickness.

Tenth day.—The patient has had a good night; she is cheerful; pulse 120, more power; bowels open. The wound having been dressed, some sanious discharge occurred from its whole extent, the margin showing as yet very little effort at union; some feeble granulations at lower part; the abdomen is smaller.

Fourteenth day.—The wound looks more healthy, the patient feels better, and has passed some comfortable nights.

Fifteenth day.—Bowels relaxed; this symptom was relieved by an opium suppository; pulse 107, more distinct; wound gaping, but granulating at the upper part; aspect better.

Eighteenth day.—The patient continues much the same.

Twenty-first day.—Much depressed by the great heat; bowels relaxed; aspect less favorable; the ligature of the pedicle came away, and the patient continued getting lower until the thirtieth day, when the catamenia, which had appeared four days previously, increased to great excess. This circumstance weakened her very much, and she sank at half-past nine on the thirty-first day after the operation.

Post-mortem examination, twenty-nine hours after death.—Body emaciated, and eyes sunk; hardly any post-mortem congestion, and no rigor mortis. There existed a wound, about seven inches and a half in length, in the median line of the abdomen, between the ensiform cartilage and the pubis, the edges of which were about an inch apart, disclosing to view a portion of the omentum, and some convolutions of the intestines covered with lymph and granulations. Beyond this aperture the two layers of the peritoneum were adherent on the right side to the extent of two inches, and rather less on the left. The original apertures made by the sutures were not all closed. On throwing back the integuments of the left side, the colon was seen extending down by the side of the incision. The intestines contained in the right iliac and lumbar regions were covered with thick lymph, and these regions contained dark and offensive fluid. The liver had formed bands of adhesion

between itself and the parietes of the abdomen on the left side. On raising the colon, the stomach was seen in its usual situation, pale, but not discoloured; the duodenum was in the same state, and the other parts of the alimentary canal were bound together by adhesions, the convolutions adhering to the anterior wall of the abdomen, the bladder, and the uterus. There were several purulent collections among the adhesions; on tearing up the latter there was found an opening in the sigmoid flexure of the colon, about the size of a sixpence. There was also an opening in the cæcum, around the internal orifice of which there was great congestion and thickening of the mucous membrane. The alimentary mucous membrane presented here and there a few red patches. *Uterus and Ovary*: There was a small round excavated ulcer on the anterior lip of the os uteri, and a more extensive one implicating part of the mucous membrane of the vagina, and covered with a superficial slough. The structures surrounding the right ovary were matted together, and a probe could be passed out of the cut extremity of the Fallopian tube. The thoracic viscera were healthy.*

(B.) PREGNANCY—LABOUR—THE PUERPERAL STATE.

12. *Salivation during Pregnancy*.—One of the anomalous accompaniments of the state of gestation is profuse spontaneous salivation, a remarkable example of which is reported by Dr. Coale: the patient was in the habit of saturating several handkerchiefs in an hour, in spite of which loss she gained flesh. Similar cases are mentioned in most works on midwifery.†

13. *Influence of Pregnancy on Ophthalmia*.—Cases have occurred in the practice of Dr. Hirschler, in which females, in successive pregnancies, have been seized with attacks, or at least aggravations, of ophthalmia, attended with considerable infiltration of the conjunctiva, pannus, trichiasis, &c. In other cases, again, he has observed already existing chronic ophthalmia to undergo aggravation during this period: and, in one case, the affection had been increased during each of sixteen successive pregnancies, so that the functions of the eye were considerably impaired. In some instances, pregnancy is attended with merely some infiltration of the Meibomian and mucous glands, with or without suppuration. Dr. Hirschler is acquainted with a woman, who, at the commencement of each pregnancy, has one or two styes in her eye, which again disappear after delivery.

These attacks or aggravations of ophthalmia during pregnancy, Dr. Hirschler thinks, probably bear some relation to the development of cranial osteophytes, exanthemata, &c., which frequently disappear after delivery.‡

14. *Vomiting as an Indication for the Induction of Premature Labour*.—In a recent discussion on the propriety of inducing abortion, which originated in a memoir by M. Lenoir, M. Dubois stated the results of his experience with reference to obstinate vomiting in pregnancy. He

* Lancet, Oct. 23, 1852.

† American Journal of the Medical Sciences, July, 1852.

‡ Deutsche Klinik., 1851.

showed that it is frequently a much more severe occurrence than is commonly supposed, he having met with twenty fatal cases in his own practice. He considered that obstinate vomiting is but an exaggeration of the ordinary vomiting of pregnancy due to some peculiar nervous excitability on the part of the patient, and that it is not caused by any special organic lesion. This, he thinks, is shown by the fact that post-mortem examinations reveal nothing explanatory, and, moreover, that the vomiting, in such cases, ceases if the fœtus dies, even though it may not be expelled till subsequently. He referred, during his remarks, to instances in which an apparently hopeless case had been saved by this spontaneous death of the fœtus, and from this ventures upon the practice of active interference for the same purpose. In reference to this question he furnished notes of three or four cases in which he performed the operation of inducing abortion. Of these, three died and one recovered, which made the number of cases of recovery within his own knowledge as many as eight or nine. In regard to the time for inducing abortion in such cases, M. Dubois lays it down as a rule that it should never be done when signs of extreme exhaustion are present, such as loss of vision, coma, delirium, &c. On the other hand, he thinks it inadmissible when the stomach is able to retain some nutriment, the patient having sufficient strength to keep about. The condition which, in his opinion, justifies this interference is characterised as follows:—1. Almost incessant vomiting, by which all alimentary matter is rejected, as well as even plain water. 2. Emaciation and debility. 3. Marked change in the features. 4. Excessive acidity of the breath. 5. Failure of other measures.*

15. *Induction of Abortion by Kiwisch's Plan.*†—This plan, which consists in keeping up a continuous stream of warm water against the os uteri by means of a syphon tube, has been tried with some modifications by Dr. Tyler Smith. In his paper on the subject the author alludes to the means ordinarily adopted, and shows the frequent failure of some of them. The use of ergot is, he observes, very uncertain. Sponge tents are difficult of introduction. Puncturing the membranes, though certain to induce abortion when fairly accomplished, cannot, in all cases, be put in practice, as, for instance, in certain cases of deformity of the pelvis. In some cases, likewise, the operation has been followed by injurious results. Such an instance is recorded by Dr. Radford, in which, moreover, the Cæsarean operation had been successfully performed in a former pregnancy. Viewing all these circumstances, the author thought himself justified in experimenting upon Dr. Kiwisch's plan, and records a case in which it was completely successful.

In order to arrive at a just comparison of this with other modes of inducing abortion, Dr. Tyler Smith reviews the conditions which demand this kind of interference in the following manner:

Premature labour has been induced, or the operation recommended, by obstetricians of repute in the following complications of pregnancy:—

1. Deformities of the pelvis.

* Archives Générales, 1852.

† Lancet, Oct. 2, 1852.

2. Cancer of the os uteri, vagina, or external parts of generation.
3. Ovarian tumours; and fibrous tumours of the uterus.
4. After rupture of the uterus in previous labours.
5. Dropsy of the amnion; ascites; or anasarca.
6. Hæmorrhages from the uterus or other organs.
7. Excessive vomiting.
8. Convulsions; insanity; and chorea.
9. Strangulated hernia occurring during pregnancy.
10. When still-born children have been produced at the full time several times in succession.

We shall find, he observes, upon analysis, that the motive for the operation is very different in these numerous conditions, and in the same condition at different dates of pregnancy. Some of the conditions in which it becomes necessary, relate to the uterine organs, others to remote affections of the system; but one of the two things is always essentially requisite,—either that the ovum or the mother shall be in present or certain future danger from the continuance of gestation, or from the occurrence of labour at the full period.

In a certain class of cases, it becomes necessary to induce labour before the end of the seventh month; when this is the case, the operation simply has reference to the safety of the mother, the ovum being necessarily sacrificed.

In another class, the operation is not called for until after the completion of the seventh month, and in a great majority of these cases the operation is performed with a view to the safety both of the mother and the child, in consequence of the condition of the mother.

In a third class, the operation becomes necessary, in the latter months of pregnancy, to save the life of the child alone, the safety of the mother not being at all involved in the cause of danger to the fœtus, as in diseases of the placenta.

As regards cases requiring the operation before the fifth month, such as excessive and irrepressible vomiting, occurring to such an extent as to threaten death by starvation or debility, the author thinks the induction of abortion by the douche would evidently be far preferable to either the dilatation of the os uteri, the attempt to puncture the membranes, or the administration of ergot. The latter has little power in such cases, while neither dilatation nor puncture could be effected without danger, because of the undeveloped state of the cervix uteri. Cases of this kind are of unusual importance at the present time, when it is computed that half a million of emigrants are passing by sea from the British islands to other countries in a single year. Many of these emigrants are necessarily pregnant women, or women who become pregnant during the voyage, and are liable to serious danger from sea-sickness, superadded to the sickness of pregnancy. Three cases have come to the author's knowledge, in which death, without the evacuation of the uterus, was caused in this manner. In one of these, death ensued from absolute starvation.

In the class of cases where the state of the mother is such as to threaten her own life and the life of the fœtus, the employment of the douche has advantages over other operations, in all cases except a few instances to be presently mentioned. These advantages lie in its perfect freedom from danger, the simplicity of the operation, and the close resemblance of labour, when thus produced, to natural parturition. For instance, what could form a stronger contrast than the dilatation of a cancerous os uteri by the bag of membranes, and the dilatation or rupture of the same structure by the

fœtal head, after the evacuation of the waters? In other cases the advantage of the preservation of the membranes to the child is equally obvious.

After the fifth month, when in the normal condition of the pelvis the os uteri can be reached, and the membranes punctured with tolerable facility, there is a certain number of cases in which the evacuation of the uterus is called for to relieve the effect of pressure or irritation, and in which the evacuation of the liquor amnii is alone sufficient to relieve the urgent symptoms. In these cases, the operation of puncturing the membranes has the advantage of affording immediate relief. Such are dropsy of the amnion; excessive vomiting in the latter months of pregnancy; draining hæmorrhage from partial separation of the placenta; the occurrence of insanity, convulsions, and chorea; or dangerous oppression of the circulation and respiration. Here the mere diminution of the size of the uterus, which may be obtained by the evacuation of the liquor amnii, without the immediate expulsion of the fœtus, sometimes affords instantaneous relief. In all such cases, puncturing the membranes is a more direct method of obtaining relief than any other procedure, and on this account may be preferred.

In cases where the operation is performed to save the child, without reference to the condition of the mother, as when the child has died again and again at the latter part of pregnancy, from imperfect circulation in the placenta, there can be no question of the superiority of the douche to any other method. Its operation is, in fact, scarcely if at all different from natural labour, and there is no risk whatever of injury to the mother from its employment.

In fine, from the accounts of the numerical results of the induction of premature labour by the ordinary method, it appears that nearly one half of the children are born dead. This is partly owing to the necessity for its performance in some cases before the fœtus has become viable; and in part to the occurrence of difficult labours from deformity, and from the evacuation of the liquor amnii at the commencement of labour. This latter cause of increased mortality among children born through the induction of premature labour, promises to be entirely obviated by the substitution of the douche for the operation of puncturing the membranes. There are, indeed, sound reasons for preferring the douche in all cases in which the fœtus is living and viable, and in which the immediate relief to be obtained by discharging the liquor amnii is not imperatively demanded. As regards the mother, the douche relieves her from all risk of mechanical injury to the uterus. It is well known that the proportion of mal-presentations is increased in cases in which labour comes on at the full term. In cases requiring turning after the induction of premature labour, the danger to mother and fœtus is increased by the absence of the liquor amnii. But these and other difficulties, which follow upon the evacuation of the liquor amnii before the commencement of labour, when the fœtus has arrived at the latter months, are greatly diminished by the employment of the douche. This happy improvement promises to be of equal value to mother and child. Above all, it is applicable in cases where the os uteri cannot be reached, where the induction of premature labour by any other known means is impossible, and where the only alternative is the dangers of the Cæsarian section.

16. *On the Employment of Anæsthetics in Labour.*—The agitation which was excited by the introduction of anæsthesia into obstetric practice having, for the most part subsided, the literary references to the practice since the period of our last report are few. It would

seem, however, from what we have been able to gather on the subject, that its usefulness is freely admitted, even in England; while in Scotland, if we are correctly informed, the use of chloroform in labour, is the rule rather than the exception.

The most recent communication on the obstetrical employment of chloroform is from the pen of Dr. Beatty,* who had previously testified to its value and safety in a paper to which we briefly alluded in a former volume.† In his present essay he informs us that the experience of two more years has amply confirmed his earlier impressions, and that he has never seen occasion to refuse the solace that it provides to any patient who was solicitous for it.

17. *Extraction of a Fibrous Tumour of the Uterus during Delivery.*

—The following case is perhaps the only one on record in which a tumour occupying the uterus and impeding parturition was extracted after the commencement of delivery.

M. Danzan was called on to visit a female who appeared to be in a critical state. She was in the 30th week of pregnancy, and had been losing blood from the vagina for the forty-eight hours. The movements of the child had ceased since the rupture of the membranes.

On examination, a large tumour was found, filling nearly the entire vagina. It was round, and not very firm. It had never produced any troublesome symptoms, and had not been discovered by the medical man who examined the patient at the commencement of her pregnancy.

On consultation with M. Dubois, it was resolved on making an attempt to extract the tumour, which evidently rendered delivery impossible. The tumour was divided by a transverse incision, and after some difficulty the operator succeeded in getting his fingers behind the segments, so as to embrace the whole in his grasp. This done, the tumour was extirpated without any further impediment. It was now found that the child presented the head, together with the hand and foot. Turning was therefore resorted to with complete success.

18. *Turning as a Substitute for Craniotomy.*—We have from time to time recorded the views of Dr. Simpson and others upon the vital questions of turning as a substitute for craniotomy and have now to notice some additional observations by the former distinguished writer, who indeed is its chief advocate. In the communication referred to, Dr. Simpson speaks of turning as a substitute for craniotomy, when the obstruction occurs at the brim of the pelvis, from disproportion between the head and the outlet. He animadverts upon the freedom with which the child has too often been destroyed, where in subsequent labours nature has pointed out how so dreadful an alternative may be avoided, either by inducing labour at the eighth month, or by having recourse to turning; such cases having terminated successfully, in some instances by spontaneous premature

* Dublin Medical Press, April 19.

† Half-Yearly Abstract, vol. XII.

delivery, in others by the spontaneous occurrence of footling or breech presentation; thus showing, in the latter case, that there is some special facility afforded to the passage of the head when preceded by the rest of the body.

This apparent paradox Dr. Simpson explains by reference to the structure and form of the foetal head itself. He shows that at birth the bi-parietal diameter of the head is the widest part of an imaginary cone, the apex of which is represented by the feet, and that the bimastoid diameter is less than the former, although the cranium is here composed of more unyielding materials. It is easily seen, therefore, that as the parietal bones allow of compression and elongation, the head will pass more readily when the smaller diameter, like the apex of a bridge, becomes first engaged; and thus the exit is moreover materially assisted by the traction which it is permitted to make upon the body of the child.

Dr. Simpson states that since he has been guided by those principles which first recommended turning in narrow pelvis, he has frequently resorted to it with success in cases where craniotomy seemed to be imperatively called for, and also that he has been informed of other instances by professional friends.

After detailing three of these cases, Dr. Simpson recapitulates the advantages to be derived from his suggestion in the following conclusions:

1. It substitutes the delivery of the infant by the hand of the accoucheur, for its delivery by formidable steel instruments. And certainly the avoidance of instruments is, as a general principle, desirable when it is possible.

2. The transit of the cone-shaped head of the child, through a somewhat narrow brim, is facilitated by the narrow end of the cone (or bi-mastoid diameter of the head) being made to enter and engage first in the contracted brim; and the hold which we obtain of the extruded body of the child, enables us to employ so much extractive force at the engaged foetal head, as to make the elastic sides of the upper and broader portion of the cone (or biparietal diameter of the cranium) to become compressed, and, if necessary, indented, between the sides of the contracted brim.

3. When the child is brought down footling, we have far more power than when the spherical arch of the cranium presents, of manually adapting and adjusting, when necessary, the shape of the head to the shape of the contracted brim; the rounded form of the cranium not affording us any sufficient hold and purchase for this purpose in cranial presentations.

4. The *lateral* and very *temporary* compression of the foetal head, by the contracted sides of the pelvis, such as we can produce and effect on artificial turning and contraction, is less dangerous to the life of the child than its *oblique* or *longitudinal* compression with the long forceps, or by the *long* impaction of the head itself in the contracted brim.

5. In cases where the narrowness is greater, and such as to produce a depression or indentation in the elastic and flexible cranium of the child, still this transient depression, or indentation, is not necessarily destructive to life, as the perforation of the head in craniotomy is. Children often survive and recover, when born with the head much distorted and even indented. See, for example, the child in case 2; and other similar instances recorded by Smellie, Denman, Velpeau, Duges, Jacquemier, Radford, &c. &c.

6. On these accounts, the operation of turning affords a fair chance of life

to the child; while craniotomy affords none. And even when the turning and extraction require some considerable time for their performance, the resulting temporary asphyxia of the child is not necessarily so deep and fatal but that the infant may be revived by appropriate measures applied after birth. I can, for one, state that in these cases, and in instances of common footling and turning cases, I have repeatedly been astonished at the viability of the infant after traction had been applied to it, both so strong in degree and so long in duration as to leave apparently little hope of its survival; and I have heard other practitioners make the same remark as the result of their experience.

7. The operation of turning, under the circumstances we speak of, will, I believe, be found also to be more safe to the life of the mother, than the operation of craniotomy. In every instance that operation is fatal to the infant, and in a large proportion also to the mother. Statistics show that craniotomy is fatal to 1 in 5 mothers, whereas, the mortality to the woman in turning is less than 1 in 15 or 16.*

19. *On a Stethoscopic Indication of the Separation of the Placenta.*—M. Caillant informs us that while engaged assiduously in the practice of obstetrical auscultation, it occurred to him to investigate the relations between the cessation of the placental bruit, and the disruption of the placental from the uterine surface. While thus occupied, he accidentally made the discovery of a peculiar and characteristic sound, heard immediately after the expulsion of the child, and which he at once attributed to the peeling off of the placenta. In order to ascertain with certainty that this sound was so produced, he has been in the habit of auscultating the uterus during the whole process of labour, and thus made out that the sound in question was only audible immediately before the placenta was felt in the vagina. This sound consists in a repetition of cracklings, of considerable intensity, beginning and subsiding with each uterine contraction. It is said to be very different from the muscular bruit attending the contractions of the organ, as well as from the placental bruit itself, and more nearly resembles the dry crepitus of emphysema than any other known sound.†

20. *Serres-Fines in Superficial Rupture of the Perineum.*—Dr. Crisp recently drew attention to a small instrument, called in France the "Serre-fine," which he had seen used in Paris eighteen months since, for the purpose of uniting the edges of wounds. He thought that these pincers were scarcely known in this country, and he believed that they would be found most effectual in arresting the bleeding from leech-bites, although he was not aware that they had been recommended for that purpose. He had tried them in one instance with immediate success. His chief object, however, in drawing attention to them, was in relation to the treatment of superficial rupture of the perineum. Dr. Deidier, of Montpellier, in the *Revue Thérapeutique du Midi*, January 15, 1852, has published a case of rupture of the perineum during labour, treated successfully by these means, in which the rent extended through the cutaneo-mucous

* Monthly Journal of Medical Sciences, Feb. 1852. † Thèse Inaugurale, Paris, 1852.

tissue and constrictor vaginae. Three "Serres-fines" were applied immediately after the laceration; the last was removed after forty-eight hours. The thighs were kept together, and the united surfaces carefully washed. On the sixth day the patient had a hard evacuation without deranging the parts, and on the ninth day the wound was perfectly healed. Dr. Crisp thought that this plan of treatment was so simple, and so easy of application, that it was worthy the attention of the profession.

21. *Sudden Death after Delivery.*—The paper by Dr. M'Clintock, which we have placed among the "Extracts" in the present volume (Art. 101,) has been followed by another, in which the author enters further into the pathology of these occurrences. In this communication he refers especially to the theory propounded by Dr. Meigs of Philadelphia, viz., that death in such cases is the result of the formation of a clot in the heart, this formation being encouraged by the greater coagulability of the blood which is the result of previous flooding. The evidence in favour of this explanation he considers on the whole to be deficient. As allied to this explanation, he next refers to some observations by Mr. Paget on sudden death caused by fibrinous obstructions in the pulmonary artery. That this may be one cause of the unhappy catastrophes in question, he also shows, by a case of death in the puerperal state, recorded by Mr. Havers, (Med. Times, Feb. 14, 1852.)

Summing up the probable causes of sudden death after delivery, Dr. M'Clintock enumerates the following:—1. Idiopathic asphyxia. 2. Shock. 3. Syncope. 4. Mental emotion. 5. Admission of air into the uterine sinuses. 6. Heart clot. 7. Pulmonary coagula. 8. Rupture or disease of the heart.*

—A case in which sudden death was supposed to be caused by heart-clot is reported by Dr. Keith; but in the opinion of Dr. Simpson the patient died of peritonitis, such being warranted by the post-mortem appearance.†

22. *Galvanism in Obstetric Practice.*—Our readers cannot fail to be aware that very opposite opinions are entertained by the most competent authorities respecting the actual value of this agent as an excitor of uterine action. Drs. Radford, Lever, Dorrington, and others, have testified to its utility, while, on the other hand, Dr. Simpson refuses to admit its efficacy. With the intention of affording additional evidence in its favour, Mr. Houghton has published several cases, at the same time giving a résumé of previous experience, in a paper, the tendency of which is to add strong confirmation to the views entertained by Dr. Radford and others, supporters of the obstetric employment of galvanism.‡

23. *Inversio Uteri.*—A case of *inversio uteri*, fatal after eighteen months, formed the subject of a recent paper read by Mr. Forbes be-

* Medical Press, May 5th.

† Edin. Monthly Journal, Jan. 1852.

‡ Dublin Quarterly Journal, Feb. 1852.

fore the Medical and Chirurgical Society, the chief interest of which paper consists in the statistical information connected with the accident which the author has been able to accumulate. Thirty-three cases are tabulated in which the inverted organ had been extirpated by excision and ligature, alone or combined. Of these it appears that 19 were treated successfully by ligature, and 5 unsuccessfully; 1 successfully, and 2 unsuccessfully, by excision; and 5 successfully, and 1 unsuccessfully, by excision and ligature combined.

In the course of discussion, the question of the possibility of replacing chronic inversion was mooted, and decided in the negative by some speaker, with what justice, however, is seen in the reports of cases successful reduced under chloroform, which we have recorded at a former page, (vide Article, 109.)*

Mr. Soden, of Bath, has also related a very instructive case of *inversio uteri*, in which the operation of transfusion was thought to have saved the patient's life.†

24. *Uterus, enlargement of, after Delivery.*—In a communication to the Medical Society of London, Dr. Snow Beck draws attention to a condition of the uterus which results from deficient absorption of the tissues after the expulsion of the ovum, and which formed the basis of subsequent morbid changes; he also suggests a means by which these enlargements may be avoided, by insuring the firm contraction of the uterus after labour or abortion. The symptoms which indicate this condition soon after the expulsion of the ovum were described as—the patient feeling weak, languid, and low-spirited, the nights being disturbed, slight headache, or perhaps more a heaviness on the head, with a general feeling of weariness. On inquiry, the character of previous labours would be usually found to have been severe or lingering, to have been attended with a considerable loss of blood, followed by a free discharge of the lochia, which continued red-coloured longer than the usual period. After the lapse of two or three weeks a slight oozing of blood still continued, which, upon slight exertion, or frequently without any such exertion, recurred from time to time in greater quantity, a slight pain being felt in one or both of the iliac regions, with or without a pain in the lumbar region, and in a short time the expulsion of a few coagula of blood. The pain was then relieved; but the oozing of blood continued, and the same sequence of symptoms occurred again and again. The appetite was good, the pulse quick, the bowels regular; the patient did not regain her strength, was troubled with pain in the sacrum, with weight or heaviness in the hypogastrium, with a feeling of bearing down on attempting to stand, and complained that the stomach remained very large. On examining the uterus, it was enlarged, the orifice open, so as to admit the index finger into the cervical canal, the rugæ of which were strongly marked, the walls being soft and elastic; the lips were small, smooth, and formed a ring round the orifice, projecting into the vagina; the neck and body of the organ were enlarged, smooth,

* Lancet, April 3, 1852.

† *Ib.*, May 22, 1852.

and elastic, no tenderness, no increased heat nor pulsation of the arteries being perceived; the vagina was unusually large and lax, the mucous membrane feeling soft and thick. The pathology of the affection was illustrated by the minute details of the condition of a uterus taken from the body of a female who died from typhus fever. The walls measured $\frac{1}{16}$ ths of an inch; the organ contained a larger amount of blood in the vessels than was natural, and the muscular tissue was developed to a medium position between the unimpregnated and gravid uterus, which caused the organ to be much increased in size, but no other morbid product was discovered. In the subsequent course of these affections, irregular discharges of blood from the uterus occurs, and when the catamenia returns, it occurs suddenly, the flow is abundant, continues longer than was the previous habit of the individual, and is attended with the expulsion of clots. As one of the sequelæ, a clot was said to form in the uterus, which increased the discharge of blood, gave rise to uterine pains, and was expelled as a pyriform coagulum, which was frequently mistaken for an abortion, or a portion of placenta which had been retained from the previous parturition. This idea received confirmation from the custom of soaking them in water, by which the outer layer became partially blanched. A case illustrating these points in practice was given, as also another case, where the hæmorrhage, consequent upon this condition of the uterus following an abortion, proved fatal in a lady afflicted with phthisis. Further morbid changes were glanced at, as congestion of the uterine organs, which was increased after each recurrence of the catamenia, and followed by attacks of congestive inflammation of the uterus or vagina, which, by inducing secondary functional disturbance in the digestive and nervous systems, gave rise to symptoms and appearances in the uterus which had been erroneously attributed to and described as ulceration. In the treatment the question was proposed by the author whether any method could be adopted at the time of the expulsion of the ovum, by which the absorption which takes place may be completed in a healthy manner, and not arrested in any part of its progress so as to leave these enlargements? By a process of analytical reasoning, based upon previous experience, the cause of this arrest in the healthy absorption was traced to the want of firm contraction of the uterus, which allowed a larger amount of blood to circulate in the part than was consistent with the actions going on in a healthy manner after parturition. It was, consequently, considered of much importance to ensure the contraction, not only to that degree to prevent any hæmorrhage, but even further, to prevent any hurtful circulation of the element by which the necessary absorbent processes might be interfered with. How was this to be effected? Was it advisable to administer the usual opiate after delivery? The soothing influence of this plan to the nervous system, already overstrung by the toils and pains of labour, was fully recognised; but had it any tendency to prevent the after-contraction of the uterus, as well as stopping the "after-pains," which were known to be caused by this contraction? If this was found to be the case in practice, the author conceived that to administer an opiate would be but to gain a short

advantage for a lengthened and protracted evil. Again, he inquires, would the "after-pains" not be better prevented by ensuring the firm contraction of the uterus directly after delivery? If so, then, how was this to be effected? Various means suggested themselves to the mind; but the administration of the ergot of rye, combined with borax and tincture of henbane, was the method selected for trial, and had, so far as it had been tested, been followed by the most happy results. It usually much increased the severity of the pains after delivery for the first few, or even for twenty-four, hours; but this evil was more than compensated by the expulsion of all coagula, the firm contraction of the uterus, the absence of any future oozing of blood, the freedom from subsequent pain, the speedy disappearance of the lochia, and the general comfort and quick recovery of the patient.*

* Reported in 'Lancet,' &c., Dec. 6th.

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