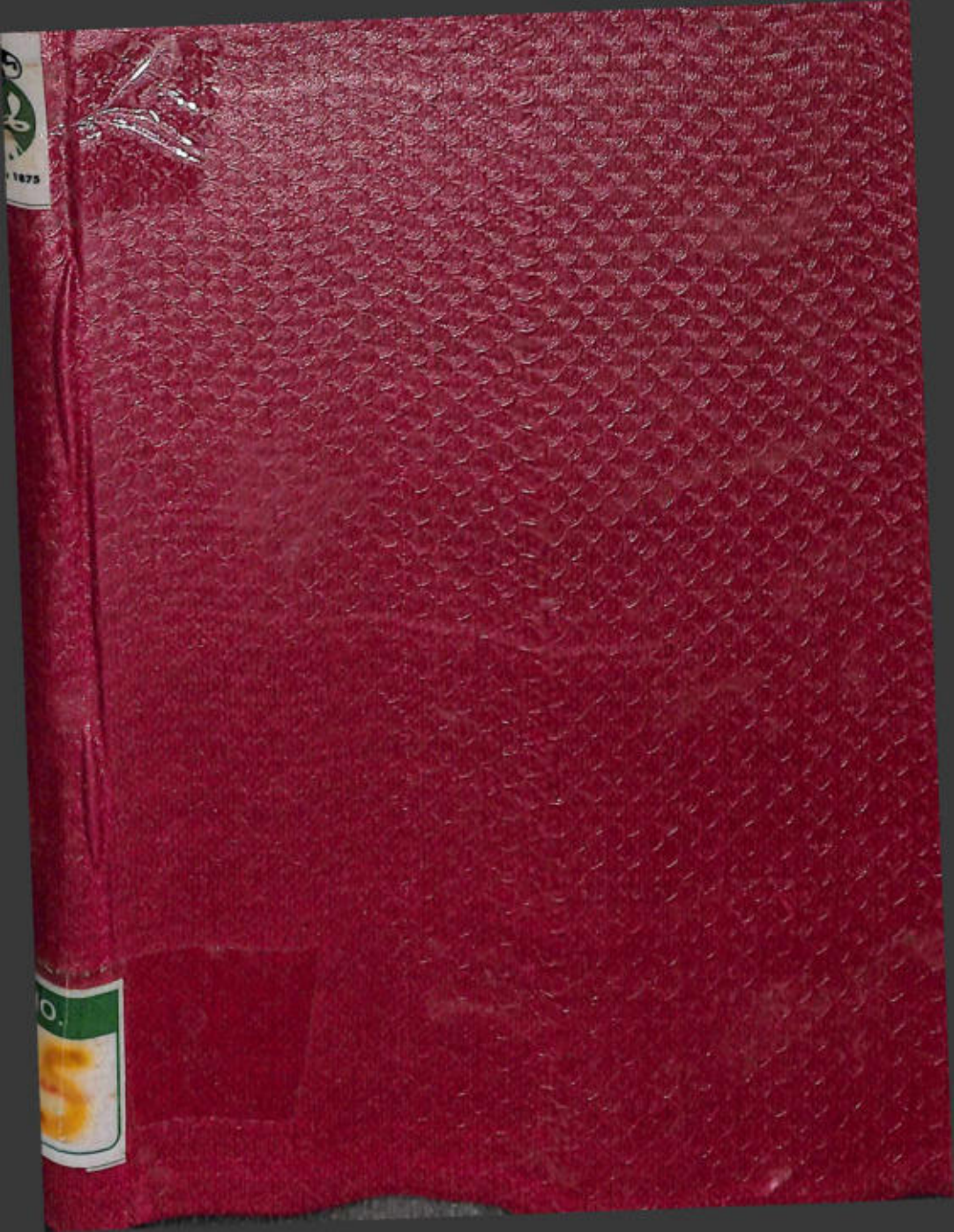

THE INTELLIGENCE AND PERFECTIBILITY OF ANIMALS.

INTELLIGENCE AND PERFECTIBILITY

OF

ANIMALS

FROM A PHILOSOPHIC POINT OF VIEW.

WITH A FEW LETTERS ON MAN.

BY

CHARLES GEORGES LEROY,

PARTLY UNDER THE PSEUDONYM OF "THE NATURALIST OF NUREMBERG."

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PREFACE.

Charles Georges Leroy, born in 1723, succeeded his father as Ranger of Versailles and Marly. In this post he enjoyed ample opportunities for the observation of animals. The result of this observation we have in the book of which this is a translation. He was the friend of Diderot, D'Alembert, Helvetius; he contributed to the "Dictionary of the Encyclopædia;" but he lived a quiet life, and died at the age of sixty-six.

A good citizen, says his French Editor; a faithful friend; gentle, kind, and firm to his subordinates, he bore himself worthily, and even loftily, towards his superiors, and those who claimed to be so by birth.

These letters were addressed to a lady, Madame d'Angiviller, with whom he was intimate.

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DEDICATORY LETTER TO MADAME * * * *.

It is some time, Madame, since you asked me for the letters of the Naturalist of Nuremberg on animals and men. I have had much difficulty in meeting with this little work, now become rare; but at last I have the pleasure of sending it you. You will have it that I, too, have made some observations and reflections on the nature of animals, and you desire me to communicate them to you. Whatever you wish must be done, though at the risk of some repetitions; so I add to the letters of the Naturalist some few of my own, and leave you to make what use you please of the whole. But I must beg you to remember that he has the advantage of being the first to treat this subject, and that it is difficult to say anything further upon it which does not exist, at least by implication, in his work. You know, Madame, that I hold that none but a sportsman can fully appreciate the intelligence of animals. To know them thoroughly, you must have associated

with them; and most philosophers fail in this point. Now I will venture to assert that this Nuremberg Naturalist is or was, like myself, a determined sportsman, and that he went through his course of philosophy in the woods. I agree with him in thinking that, in the study of animals, isolated facts must be put aside. It is their daily conduct, the whole of the acts, with their modifications according to circumstances, all working towards the object which they must necessarily have in view, each according to its nature, that constitutes the true field of observation. But when once this observation has been made on a few subjects, differing in kind, in habits, in structure, and in inclinations, the work is done. I believe, also, that we should attempt to treat only of those kinds which we have constantly under our eyes, and which we can follow in all their proceedings; and that, even among these, we should choose those with which, either by structure or habits, we have some affinity. Insects, for instance, are too far removed from the sphere of our observation for us to be able to follow their operations in detail, and to decide with any degree of precision what amount of intelligence they bring to bear upon those operations. The republic of rabbits, the association of wolves, the precautions and characteristic wiles of foxes, the sagacity shown by dogs in their various relations with us—all these

are far more instructive than the industry of bees, on which so much stress is laid.

It would be no difficult task to heap up facts in favour of the intelligence of animals, but such facts are often ill observed, and not to be depended upon; very seldom do they lead to an unanswerable conclusion. But when you have studied a large number of individuals, chosen from different species; when you have ascertained the limit to which the education proper to their respective formation, natural appetites, and circumstances lead them; when you have seen them cautiously feeling their way, and only attaining to the so-called certainty of instinct after the lessons consequent on failure, it seems to me impossible not to reject entirely the idea of automatism—of their being mere machines. This study, Madame, has, to a great extent, been done by the Naturalist of Nuremberg. It merely remains for me to develop somewhat more fully some of his ideas, and to reply at greater length to certain objections. I shall, I hope, so execute my task as to remove them entirely. But you must permit me to do this in the form of letters, and to avail myself of the freedom that form allows. I will send you my thoughts just as they occur to me. Among them I may chance to repeat some of my Naturalist's; but truth is common property, and my having adopted his thoughts gives me the right

of using them as my own. Besides, I send you his work entire; I have not allowed myself to alter a single word, and I do not quarrel with him for his birthright. He is welcome, when he chooses, to all he may think his own; there shall be no dispute between us.

I have the honour to remain, &c.

LETTERS ON THE INTELLIGENCE OF ANIMALS,

By the Naturalist of Nuremberg.

LETTER I.

Character of these observations—Philosophical recognition of analogous qualities to those of man wherever we find actions analogous to his—Intimate knowledge necessary for such observations.

I HEARD lately from our friend M—— at Paris that he has mentioned to you some essays on the natural history of animals, which have been the amusement of my spare moments. He maintains that I am bound to communicate them to you, in order to redeem his promise. I cannot but fear that he has been imprudent. No singular or rare animals have fallen under my notice; indeed, the object I have always set before me excludes these to concentrate my whole attention upon those which are most common and always at hand. I cannot, therefore, set before you anything so appetising as the history of the sea-bear, lately published by M. Steller. I offer no extraordinary facts: nothing but the ordinary life of several animals, observed from a point of view perhaps not quite so ordinary.

Anatomical descriptions, the external characteristics of the various species, the natural inclinations

which distinguish them from one another, are doubtless very important in the history of animals; but when all these are ascertained, it seems to me that much is still left for the philosopher to do. All these organised beings, which the Creator has gathered together to adorn the world, have a common principle of action which it is not possible to overlook, modified in each species by variety of organisation. But a careful examination of the effects of this principle will discover it in every modification; and animals, looked at in this light, appear to me to become far more interesting. Instinct, properly so called, consists in the inclinations common to the kind; but all kinds are affected in a manner common to all. If these affections do not always produce the same phenomena, the difference must be accounted for by the difference of the means which they derive from their organisation. We shall never understand the nature of the soul of animals, and we must allow that the point is unimportant. We are convinced that our own is immaterial and immortal, and the conviction is the basis of our fondest hopes. Whether the souls of animals be immaterial or not, it is certain they can never attain to the glory reserved for ours; thus religion cannot be affected by the result of any examination of the faculties of animals. But as the observation of their bodily structure throws

light upon the structure and use of the corresponding organs in us, so the observation in them of the effects of that sensibility which they have in common with us, will aid us in endeavouring to ascertain in detail how we are affected by corresponding sensations.

What I say, sir, is, that the animal creation feels as we do; and I believe that before we can form any other opinion we must take pains to close both our eyes and hearts. He who could hear unmoved the plaintive cries of an animal would hardly be much affected by those of a man. It is perfectly true that absolute certainty is only attainable with respect to our own sensations; but the accents of pain, the evident signs of joy, which assure us of the sensibility of our fellow-men, bear witness no less forcibly to that of the animals. The acquisition of knowledge would be a hopeless task if we were never, even in such simple facts as these, to put faith in our own consciousness.

We must, then, it seems to me, acknowledge the existence of feeling in animals. Those who most obstinately cling to the notion that they are mere machines, yet cannot but allow them to possess the faculty of memory; for, wishing to have good dogs, they correct them. These facts being admitted, the naturalist, having thoroughly examined the structure, and formed an opinion of the use of all the parts,

must throw aside the dissecting knife, leave his study, and plunge into the woods, there to follow every wile and turn of these sentient beings, to appreciate the development and effects of this faculty of feeling, and to see how by repeated sensations, combined by memory, they rise from mere instinct to intelligence.

There are certain necessary effects, both of the sensations and of memory, which the observer must not allow to escape him. In very many instances the actions of animals only pre-suppose the existence of these two faculties; but there are others which can never be accounted for by these alone, without the aid of their natural concomitants. The naturalist, then, must have a clearly-defined idea of the different effects of simple sensation, of recollection, of the comparison of a present object with one which memory places by its side, of the judgment resulting from that comparison, of the choice which succeeds that judgment, of the idea of the thing so compared and judged, which gradually and unconsciously, by the repeated exercise of these acts, becomes fixed in the memory. These, sir, are distinctions which should never be absent from the mind of the observer. Natural formation, internal no less than external, the average length of life, and of the period of growth, the way in which they feed, their ruling inclinations, the manner and season of

pairing, that of gestation, &c.; these are the simplest facts for the observer, and which only require him not actually to close his eyes; but to follow the animal in all his operations, to penetrate the secret springs of his actions, to see how the sensations, the wants, the obstacles, the impressions of all kinds to which a sentient being is exposed, multiply his movements, modify his actions, and enlarge his knowledge, is, in my judgment, the special domain of the philosopher.

M. Steller, in the account he has given us of the sea-bear, has discharged the duty of the philosopher with greater care than many naturalists, and M. de Buffon has discharged it still more fully, in what he has published upon the history of animals; but he who seeks to familiarise himself with animals, and is willing to take the trouble of a long study of their actions, in order to satisfy himself of their intentions, would find in such a pursuit matter for still wider speculation, and for speculation of a different order.

For instance, I should like to have the complete biography of every animal. I should wish that after its individual character, natural appetites, and way of life had been treated of, the observer should endeavour to see it in all the circumstances which may arise to oppose the immediate satisfaction of its wants—circumstances whose varying nature breaks

the regularity of its ordinary proceedings, and forces it to have recourse to fresh devices.

If the history of a carnivorous animal be chosen, it is not enough to state generally what animals he preys upon, and how he seizes them; we should trace the steps by which experience teaches him to facilitate his chase, and ensure its success, the new inventions to which scarcity leads him, and consider the number of known facts, supplied by memory, and combined by reflection, which are involved in the devices to which he has recourse. We should observe, also, the modifications of his actions due to the active influence of the passions, such as fear, love, &c., to which he is subject; how far the keenness of want sets aside the dictates of prudence, and the distrust induced by experience neutralises the activity aroused by hunger. It is only by this observation of the animal in all ages and situations of life that a right judgment of the development of his instincts, and the degree of his intelligence, can be formed. If he belongs to a species living in society, either constantly or only for a certain season each year, the additional projects and enterprises superinduced by this association must also be noted. The thorough knowledge of all these different orders of life would add new charms to the spectacle of the universe for the philosopher, and could not but give a fresh impulse to his admiration for the Supreme

Being who has so infinitely varied the affections as well as the outward forms of his creatures, and made all subservient to the eternal plan known only to himself.

The effects of sensation in those animals which by their structure are less open to external influences may furnish similar phenomena, the observation of which, by its greater facility and certainty, will help in that of the more complex. In some species, sensation will be seen to be obtuse and almost entirely inactive, giving rise to a very limited number of spontaneous actions; while in others, its greater intensity will multiply those actions, and will produce that desire and restlessness which, in sentient beings, are the parents of attention, and thereby become the true sources of their knowledge. As geometry rises from the consideration of the properties of a simple line to the sublimest speculations, so will observation pass from the contemplation of the most simple sensation to its most complicated results, and the gradations which are so obvious in the world of sight will be equally recognisable in that of sensation.

I think that were this kind of view taken of the natural history of animals, it would render it more interesting in itself, and more worthy the attention of the thoughtful. I have long lived among animals; I have studied some species with great care, and

have discovered that human morality may learn some lessons from that of wolves. If you will promise to be indulgent to my foreign style, and to overlook my *Germanisms*, I will gladly lay before you some essays I have written after the plan above sketched out. It will be a real pleasure to me to fulfil my friend's promise, and, at the same time, to give you some proof of the high esteem with which I have the honour to remain, &c.

LETTER II.

Effect of circumstances on animals—The carnivora—The wolf the strongest, yet, from his very strength, the least intelligent—His life, individual, and in his relations to man—Superiority of the fox—Effect of experience in both animals.

In the first letter which I had the pleasure of writing to you, I asserted that it was impossible to refuse to animals the faculties of sensation and of memory, unless we disallow our own consciousness—I mean that instinct of sympathy which alone assures us that our fellow-men are gifted with the same faculties which we recognise in ourselves. In examining the actions of animals in detail, we find, further, that they present the natural results of these faculties; or, if we deny this, we must admit the existence of judgments and resolves without motives—in other words, of a number of effects without a cause. From these facts we may predict that those animals which, by virtue of their organisation and appetites, are most dependent upon the objects that surround them, will have the largest amount of knowledge; and further, that if the acquisition of knowledge is limited by the special organisation and nature of the appetites of each species, the greater the difficulties to be encountered in the satisfaction

of their wants, the greater will be the sphere embraced by their ideas. That each species should have some ideas which are peculiar to it, and beyond which it cannot go, is quite natural. The sheep in its pasture sees with indifference the wiles of the fox in pursuit of the prey which seeks to escape him. But all species equally must have sensations and ideas, the exercise of which is regulated by their respective wants and dangers. It is this which must settle the question whether animals really do present the natural results of sensation and memory. If they do not—a supposition I can hardly for a moment entertain—however difficult it is to conceive the existence of these two faculties wholly distinct from any action, we must yet resign ourselves to admit this strange phenomenon. But it is to facts we must turn for instruction on this subject; without their aid we have no right to settle the question.

Among animals, those whose nature leads them to prey upon other animals have most points of contact with the objects by which they are surrounded; accordingly, we find that they exhibit the most intelligence in all the details of their daily life. Nature has endowed them with exquisitely delicate senses, with great strength and agility, and without these endowments life would, even if possible, be very difficult; for, at war with other species for their daily existence, they would soon perish of hunger

had they inferior, or even only equal resources: But their degree of intelligence is not solely due to the delicacy of their senses. Intense excitement, the difficulties to be overcome, and the dangers to be avoided, keep the sensations in constant activity, and impress upon the memory of the animal numerous facts, which, taken together, constitute his science of life. Thus, in places remote from any habitation, and where game abounds, the life of carnivorous animals consists of a few simple and unvaried acts. They pass successively from an easy prey to sleep. But, wherever the co-existence of man renders the gratification of their appetites more difficult; wherever, in consequence of this rivalry, their steps are threatened with pit-falls, their path planted with snares of all kinds, and they are kept in a state of constant alarm, then an absorbing interest forces them to watchfulness, their memory stores itself with all the facts which concern them, and does not fail to bring forth its stores whenever similar circumstances arise.

These various obstacles produce in the animal two states of existence, which it is well to consider separately. The first is purely natural, very simple, limited to a small number of sensations, and may, in some respects, be compared with that of man in the savage state. The other is artificial, far more active and full of interests, of alarms, and of movement; it

represents, in some sort, that of man in a state of civilisation. The first exists with little variation in all the carnivorous species; the second admits of many degrees, in proportion to their more or less perfect organisation. This will be seen in comparing them.

Of all the carnivorous animals found in the temperate climates of Europe the wolf is the strongest. His voracity and his wants are in proportion to his strength; nature has endowed him with the most delicate senses, a piercing sight, and an acute ear, and a nose which, with yet greater certainty, warns him of all objects to be found on his path. This sense, when well trained, informs him of some of the relations which things may have with him: I say when well trained, for there is a very perceptible difference between the proceedings of a young and ignorant wolf, and those of a wolf of ripe age and experience.

The young wolves spend two months in the den, during which time their father and mother feed them. They then follow their mother in search of prey, for she can no longer alone satisfy their daily increasing voracity. With her they tear to pieces live animals, try their powers in the chase, and gradually become able to provide for the common wants. The habitual practice of rapine, under the eye and with the example of an experienced mother,

gives them each day new ideas on this subject. They learn to know the places to which their game retires; their senses become alive to every kind of impression; they begin to distinguish these impressions, and to correct by their smell the judgments which their other senses would lead them to form. At the end of eight or nine months the she-wolf leaves her last year's litter, to find another mate; this urgent want deadens her maternal feelings; she either leaves or drives away her young, to whom she is no longer indispensable, and the young wolves find themselves left to their own resources. For some time they remain together—a necessary precaution—but before long their natural voracity, which makes any division of their prey intolerable, causes a separation. The strongest remain in possession of the den; the weaker go elsewhere, to drag on a life frequently endangered by hunger, even if in their inexperience they do not fall a prey to the traps set for them by man. This is more especially the time when they wander about the fields seeking for dead animals, having as yet neither strength nor the skill which is its best substitute. If they survive this time of trial, their increased strength and the knowledge they have acquired make life much more easy to them. They are now strong enough to attack the larger animals, one of which suffices them for many days. When they have pulled one down, they devour a

part, and carefully conceal the remainder. But this provision does not diminish their ardour in hunting, and it is only when they have been unsuccessful that they have recourse to it. Thus the wolf passes his nights in the chase, and the day in a light and uneasy slumber. So much for his purely natural life. But in those places where his wants clash with those of man, the constant necessity he is under to guard against the snares laid for him, and to provide for his safety, oblige him to extend the sphere of his thoughts and actions to a far larger number of objects. Then his step, naturally bold and free, becomes watchful and timid; fear keeps his appetites in check; he distinguishes between the sensations which memory brings before him, and those which he receives from the immediate use of his senses. Thus, when he scents a flock within its fold, memory recalls to him the impression of the shepherd and his dog, and balances that of the immediate neighbourhood of the sheep; he measures the height of the fence, compares it with his own strength, takes into account the additional difficulty of jumping it when burdened with his prey, and thence concludes the uselessness or the danger of the attempt. Yet he will seize one of a flock scattered over a field, under the very eyes of the shepherd, especially if there be a wood near enough to offer him a hope of shelter. A full-grown wolf, in

the neighbourhood of human dwellings, has little need of experience to teach him that man is his enemy. He is pursued from the moment he appears; the crowd and noise show him how much he is feared, and how much he has himself to fear; and each time that the scent of man meets his nose, it awakens in him the sensation of danger. He will resist the most tempting morsel accompanied by this alarming accessory; and even when it is divested of it, he is long in overcoming his suspicions. In this case the wolf can only have an abstract idea of danger, the precise nature of the trap laid for him being unknown; yet this vague idea is only overcome by a most gradual approach to the object of his desire and fear—several nights are hardly sufficient to give him confidence. The cause of his suspicion no longer exists, but it is reproduced by memory, and the suspicion is unremoved. The idea of man is connected with that of an unknown danger, and makes him distrustful of the fairest appearances.

Timeo Danaos et dona ferentes. This is a piece of wisdom forced on the wolf by the instinct of self-preservation, never wanting in the full-grown wolf of some experience, and capable of extension as circumstances force him to return upon his past and to reflect. He could not argue syllogistically, as man does; but he must compare his sensations, and ascertain the mutual relations of objects, as well as

their relations to himself, else he could never attach any idea, either of fear or hope, to those objects. And yet the wolf is the least wary of all our carnivorous animals, owing to his superior strength; naturally rather bold than suspicious, it is experience which makes him cautious, and want which makes him ingenious; but these qualities are acquired, not natural gifts. When hunted with hounds, he owes his escape to his superior swiftness and power of endurance, without having recourse to the doublings and other artifices of the weaker animals. The only precaution he takes, and indeed the only one he need take, is always to run against the wind, that so his scent may be his safeguard against all dangers in his road. By experience he has learnt to infer, from the strength or faintness of the scent, the greater or less distance of the dangerous object, and to compare this again with the danger with which it threatens him; he leaves the direction he has chosen just sufficiently to avoid the danger, but without losing his compass—the wind. As he is strong, and in good condition, and has generally hunted over a wide extent of country, he makes for some distant spots he knows of; and only by the most numerous and well-planned ambuscades can he be thrown out of his course.

Wherever an animal passes successively from hunting to sleep, and so is not exposed to *ennui*,

there can be but three motives which can interest him and become the sources of his knowledge, judgments, resolutions, and actions: these three are the search of prey, the necessary means of ensuring safety, and the care of procuring himself a female when he feels that want. In seeking his food we have seen that the wolf exercises as much ingenuity as his great strength leaves room for. He takes measures to ascertain where he will find his prey; and if in his search he chooses one place rather than another, his choice is determined by previously-known facts. He then makes a careful and delibefate study of the dangers he incurs; he estimates them; and this calculation of probabilities keeps him in suspense till hunger throws its weight into the scale, and terminates his deliberations. In taking precautions for his safety much foresight is required—that is, a large number of facts engraven on his memory. Then he must compare these facts with his present sensations, and discover the relation existing between these facts and sensations; and finally, by the aid of these appreciations, he must determine upon his course of action. These operations are indispensable. For instance, we should be wrong in ascribing the alarm excited in most carnivorous animals by a sudden noise to a mere mechanical impression. The shaking of a leaf rouses in a young wolf only a simple movement of curiosity; but an experienced wolf, who has

known this fluttering precede the appearance of a man, takes fright at it with reason, because he has perceived the connection of the two phenomena. When these judgments have been repeatedly formed, and by this repetition the actions to which they lead have become habitual, the rapidity with which the action follows the judgment gives it a mechanical character; but a little reflection enables us to recognise the steps which led to it, and refer it to its true cause. It may happen that this idea of the relation between the movement of a leaf and the presence of man, or any other danger, becomes from different circumstances extremely vivid; in this case it becomes fixed in the memory as a general idea, and the wolf becomes subject to illusions, and to false judgments, which are the fruit of the imagination; and if these false judgments extend to a certain number of objects, he becomes the sport of an illusory system, which will lead him into infinite mistakes, although perfectly consistent with the principles which have taken root in his mind. He will see snares where there are none; his imagination, distorted by fear, will invert the order of his various sensations, and thus produce deceptive shapes, to which he will attach an abstract notion of danger. This may easily be verified in those carnivorous animals which are constantly being hunted and beset with

snares. Their actions lose the confidence and freedom of nature. The sportsman, in his pursuit of the animal, has no object but the discovery of its hiding-place; but the philosopher reads in its steps the history of its thoughts, detects its perplexities, its fears, its hopes; sees the grounds upon which it has moved cautiously, has quickened or suspended its course; and there is no doubt as to these grounds, unless, as I said before, we choose the alternative of supposing effects without a cause.

It is difficult to find out whether love furnishes the wolf with many ideas; all that is known is, that the males predominate, that sanguinary combats take place between them for the females, and that a union follows; but whether the she-wolf becomes the prize of the conqueror, or whether she voluntarily gives herself to the one she prefers, this we do not know. There is, however, in the conduct of the she-wolf a kind of coquetry common to the females of all species. She is the first to feel desire, but she conceals it, and even resists for a considerable time; and it is most probable that choice has a part in the association, for she departs with her mate, and hides herself from all other suitors. Then, and while she is with young, she stays with the one she has adopted, or who has taken possession of her, and afterwards they share the task of providing for their family. Thus, whatever be the

principle of this association, it involves mutual rights, and gives birth to new ideas. The pair hunt together, and their mutual aid facilitates and secures their success. If they meditate depredations upon a flock of sheep, the she-wolf draws off the dog by a feigned flight, while the male breaks through the fold, and carries off one of the sheep in the absence of its protector. If it is a wild beast they would attack, they take their parts according to their strength; the wolf puts himself on its track, attacks it, and when it begins to flag, the she-wolf, who has stationed herself at some narrow pass, takes up the chase with fresh strength, and soon settles the matter.

It is easy to perceive how much knowledge, judgment, and inference are implied in such proceedings; it is even difficult to conceive the execution of agreements of this nature without an articulate language—a point which we will leave for future examination. Nevertheless, as we have already said, the wolf is, owing to his strength, one of those carnivorous animals which are most independent of artificial ideas—that is to say, of those which are formed by the exercise of reflection upon past sensations. The continual necessity of rapine, the habit of bloodshed, and the daily feeding on the torn and bleeding carcasses of animals, seem unlikely to give the wolf a very interesting moral character; and

yet, except in cases of rivalry in love, wolves do not appear to be actually cruel to one another. During the time of their association they defend one another, and the maternal tenderness of the she-wolf is so intense as to render her wholly insensible to danger. It is said that a wolf that has been hurt is tracked by his blood, and finally killed and eaten by his fellows; but this is not well proved, and certainly it is not a common occurrence, and may have been sometimes merely the effect of that necessity which knows no law. Moral relations cannot be very strong between those animals who are in no way dependent upon association; a being, who lives a life of hardship and isolation, alternating between solitary labours and sleep, can be but very slightly susceptible of the tender feelings of compassion.

The fox has the same wants, and the same inclination for plunder, as the wolf; his senses are equally acute; he has even superior agility and suppleness; but in strength he is inferior, and he is obliged to make up for this deficiency by skill, stratagem, and patience. One of the first ways in which he displays his superiority of invention to the wolf is in digging himself a hole to preserve himself from the inclemency of the weather, and at the same time to serve as a place of refuge. To save himself trouble, he generally takes possession of rabbit-holes; turns

out the rabbits, and settles himself in their place. When obliged to move, his first care is to visit all the burrows likely to suit him, especially old fox-holes. One after another he cleans them, and it is only after a careful examination of all that his final decision is made; but if disturbed, however slightly, in his new choice, he soon leaves it, not choosing to make his home where he will be subject to any alarm. Once settled, he soon makes himself acquainted with the neighbourhood for a long way round; he takes note of all the villages, hamlets, and lone houses; he scents the poultry; he ascertains which are the poultry-yards in which there are many dogs and a good deal of movement, and which are more quiet; he reconnoitres the hedges and the covers which may, in case of pursuit, favour his escape. This train of precautions, this calculation of probabilities, clearly show large knowledge of previous facts. Guided by distrust founded on inference, he rarely suffers himself to be carried away by the ardour of pursuit; he drags himself along the ground till he is close to his prey, and then springs upon it. When he is certain that all is still in a yard where he has scented poultry, he tries to get in, and his natural agility makes it no difficult task. Then, if undisturbed he avails himself of the quiet to make great slaughter, and carries away the dead till the near

approach of day makes him anxious as to his retreat. He has thus provisions for several days, and he carefully conceals what he does not eat for future occasions. If the fox is settled in a country where game abounds, his exertions to satisfy his voracity have to take a different shape; he scours the fields against the wind, marks the hare on her form, or the partridges nestling in the furrow. Silently he draws near; his footprints, scarcely to be traced on the soft earth, show the lightness of his tread and his intention to surprise. He is frequently successful. Sometimes, relying upon his patience, he creeps along the skirts of a wood, marks a rabbit leaving it, hides himself, and awaits and seizes him when he is returning, unsuspicious of danger, to his burrow. But food is not always the immediate object of the fox's journeys; even when his appetite is satisfied, his active foresight leads him to travel on, less in search of new victims than of more certain and minute information about the country which furnishes his subsistence. He often revisits the different burrows which he cleaned out at first; walks round them with the greatest caution, enters in, and carefully examines the various outlets; he is slow in his approach to any object which is new to him; any fresh thing is an object of suspicion, and his every action exhibits distrust and scrutiny. Yet, with the baits which suit the taste of the fox,

it is not difficult to entrap him if the snare is unknown; but no trap is ever successful twice. No bait will induce the fox to expose himself a second time to a danger he either recognises or suspects. He smells the iron of the trap, and this sensation has become so terrible to him that it prevails over every other. If he perceives that the snares become more numerous, he departs to seek a safer neighbourhood. But sometimes, grown bolder by a nearer and oft-repeated examination, and guided by his unerring scent, he manages, without hurt to himself, to draw the bait adroitly out of the trap.

This action, with its accompaniments, evidently pre-supposes in the fox the existence of delicate perceptions and a power of making combinations of no simple order. It would be an endless task to enumerate the various motives which determine him to change his den, neutralising the force of habit so powerful in animals, and the various modifications in his conduct effected by a change of circumstances. These are necessary to any weak animal which comes into contact with man, interfering either with his needs or pleasures. If it is a natural advantage to him to have a place of retreat and residence, it also facilitates the attacks of his enemy, who easily discovers his habitation, and seeks to surprise him in it; but man, with all his artificial aids, has need himself of much experience in order to prevail over the

prudence and stratagems of the fox. If all the outlets of his den are guarded by traps, the animal scents them, recognises them, and will suffer the most acute hunger rather than attempt to pass them. I have known foxes keep their dens for a whole fortnight, and only then make up their minds to come out because hunger left them no choice but as to the mode of death. But the terror which in such cases keeps the fox in his hole does not paralyse either his senses or his activity. There is nothing he will not attempt in order to save himself. He will dig till he has worn away his claws to effect his exit by a fresh opening, and thus, not unfrequently, escapes the snares of the sportsman. If a rabbit, imprisoned with him, gets caught in one of these snares, or if by any other means one should go off, he infers that the machine has done its duty, and walks boldly and securely over it. The only passion which induces the fox to lay aside some of his caution is his tenderness for his young; their need, when confined to the burrow, makes the father and mother, but especially the latter, far bolder than they are for themselves, and this pressing necessity often causes them to hazard their lives. Sportsmen do not fail to avail themselves of this affection of the fox for his young. This community of cares and interests implies a kind of morality in their love, and affections which extend beyond the merely physical

wants. These animals, constantly accustomed to scenes of blood, cannot hear without pain the cries of their little ones in suffering. Doubtless, poultry have small reason to consider foxes as compassionate; but their females, their little ones, and even all the members of their species, have no cause to complain of them. This tender anxiety, which causes the she-fox to disregard her own safety, makes her keenly alive to all the dangers which threaten her young. If any one approach her den, she removes them the following night, and she is constantly exposed to this necessity, as at these seasons the foxes make their vicinity known by greater havoc than usual, and it becomes even more important to destroy them.

Besides the interest man has in the destruction of the fox, he has made the hunting it a sport. The fox is hunted with terriers or small hounds. At first the animal keeps near his hole, and doubles continually; but as it is usually guarded, and he is often fired at near it, he at length decides on flight, and to retard the dogs, he takes his way through the closest thickets he knows of. If any of the sportsmen seek to intercept him, and to fire at him as he passes, he avoids them, and will do the most desperate things rather than pass near a man. I have known a fox jump a wall nine feet high three times together, to avoid the ambuscades prepared for him. But at

last, his swiftness being his only defence, and his power of endurance inferior to that of his pursuers, after having exhausted all the various resources of skill in his flight, he is forced by fatigue to retire to some hole, where he frequently perishes.

It has been seen that the ordinary mode of life of the fox, and the detail of his daily actions, involve a more regular plan, a more complicated set of reflections, and more extensive and subtle views than those of the wolf. Prudence is the resource of weakness, and often proves a better friend than the boldness which accompanies strength. For the rest, we find in both animals an equal aptitude for improvement, notwithstanding the differences in the results due to their structure and wants. Ignorant, stupid, and almost imbecile when undisturbed, they become skilful, clear-sighted, and full of resources when the fear of pain or death, in a thousand forms, has multiplied their sensations, imprinted them on their memory, and exercised their judgment; and when, finally, these sensations, recalled by existing events, have been combined by thought, and fresh inductions drawn from them. The conclusions which they draw from these inductions are not always just, but experience rectifies them, and it is easy to trace, in the different ages of these animals, their progress in the art of forming judgments. In youth, imprudence and giddiness lead them into many dangers,

and then the mere remembrance of these excites in them a degree of fear which often leads their judgment astray, makes them regard all unknown forms with terror, attaches to every new object the abstract idea of danger, and makes them liable to delusion. Old wolves and foxes, who have been frequently obliged to act upon, and to ascertain the value of, their judgments, are less apt to be misled by false appearances, and more on their guard against real dangers. As misplaced fear may make them lose their night's work, and reduce them to a scanty diet, they have a deep interest in observing. Interest produces attention, attention discovers the qualities which distinguish one object from another, and constant repetition makes these distinctions as rapid and easy as they are sure. It is thus that animals are perfectible; and if this perfectibility is limited by their natural organisation, it is not the less, in varying degrees, common to all those beings who are possessed of sensibility and memory: the Wise Author of nature has in every case proportioned their resources to their wants. In the next letter I shall have the pleasure of sending you, this truth will become still more evident as we treat of some other species. From whatever side we look at the works of the Eternal Artisan, we cannot but be struck with his profound designs, and render homage to his glory.

I have the honour, &c.

LETTER III.

Contrast between the carnivorous and herbivorous animals—Ideas of attack and defence possessed by the former, of defence only by the latter—The stag—His naturally peaceful life, disturbed only by the time of rut and the persecutions of man—Effect on him of these disturbances, and of the society of his fellows—The hare—The rabbit—Rabbit-warrens—Craft in inverse proportion to strength—Distinction between actions proceeding from instinct and those which result from sensibility—Influence of organisation.

THE specimens of the history of carnivorous animals which I gave you in my last letter offer varieties of scene which we miss in that of the species which live on herbs and fruits. A fugitive prey, which repeated attacks render very subtle; the necessity of entering the lists with a rival whose superior resources cause him to be regarded as the lord of nature; all the interests which arise from this state of alternate attack and defence keep the senses in the carnivorous species on the alert, and constrain them to give attention—to form a habit of reflection which daily enlarges the bounds of their intelligence. The herbivorous species use neither reflection nor judgment in the satisfaction of their wants; they have fewer ideas and greater innocence; their ways are gentle, and their line of conduct uniform,

presenting few vicissitudes, but offering the constant spectacle of calm and peace. It has been said that the history of a people without passions would be devoid of interest. That of the herbivorous animals is in a similar case; it is as simple as their wants; their whole knowledge is confined to the memory of a few facts; and if some destructive animals did not sometimes disturb their peaceful abodes, it would be still more limited, but their life would be as free and happy as it is naturally uniform. It is man especially, in his greed and cruelty, who refuses to allow the peaceful enjoyment of the fruits of the earth to those animals which can minister, either to his food or his pleasures. If he makes war on the more powerful inhabitants of the forests, it is not as a benefactor, but as a rival, that he steps in, to secure to himself the exclusive enjoyment of the common prey. The stag, the fallow-deer, the roebuck, the hare, the rabbit, are to him equally the objects of his care and of his ravages; death is the ultimate end of his protection. True, some of them derive a considerable number of ideas from the necessity of avoiding his snares; they are driven to invent a system of defence foreign to their nature, and if knowledge were in itself a blessing, they would owe this blessing to their enemy, through his contributions to their sensitive and intellectual faculties; but when

is knowledge ever an equivalent for peace? It may be a means of happiness to idle and restless man, for his only refuge from *ennui* is occupation. It is the remedy of the curiosity which is his peculiar malady; but among sentient beings, those who have no habitual want of occupation have no need of the remedy. Even in man it may be that this restless sense of discomfort, which ever leads him to seek refuge from himself in outward things, and thus becomes the source of most of his knowledge, is but an acquired vice, a product of education. Savage nations, who have few wants, do not appear to be less happy than civilised ones, who have many that they cannot gratify. If we consider the conditions and apparatus which man in the enjoyment of leisure and civilisation finds necessary to his happiness, and compare the small number of those who enjoy them with the immense numbers of those who suffer because they have them not, we are led to suspect that the race might be better off had it less knowledge. Perhaps, however, a more general and improved method of instruction would teach men in what true happiness consists, would show them the precise way of life which would make it attainable by the majority, and would calm their restlessness, and moderate their desires, on grounds of feeling and conviction. However this may be, it is certain that those animals whose almost unvaried life requires

a very limited number of ideas, appear nearer to happiness than those whose incessant movements show a wider field of interests and activity. These last have a more stirring existence and more violent sensations; but this intensity of life is often owing to uneasiness, to fear, and feelings of a painful kind. Even when they are pursuing pleasure with all the ardour of hope, they cannot be called happy. It is the desire of enjoyment which is active; enjoyment itself is still.

The stag is one of those animals which, by constitution and the natural inclinations resulting therefrom, by their food, and their relations with others, are not thrown in the way of acquiring many ideas. The stag has no difficulties to surmount in procuring his food. If he suffers from hunger, his only resource is in a change of place, and no skill can avail him; therefore, his memory only burdens itself with a few necessary facts. He soon learns where to look for the tender buds and shoots in the early spring, the fresh juicy grass in summer, berries in the later season of the year, and briers and shoots of furze when winter has hardened the wood and withered the grass. The repetition of these very simple acts neither implies nor gives much knowledge. He leaves his lair in the evening to graze, he returns at dawn of day to lay himself down to rest, gets up again towards noon, either to eat, or,

if it be very hot, to drink at some pool. This is the history of a stag's day; and it would be the history of his whole life, if the time of rut and the snares of man did not vary it to some extent. And yet these acts; simple as they are, suppose in the stag experience, reflection, and choice, since he must change his pasture and his lair according to the season. In spring and early summer, the necessity of shedding his horns, and of sparing his new and tender ones, obliges him to seek lonely thickets where he may hope for uninterrupted tranquillity. In winter, the rigorous temperature drives him to the depths of the woods and forests, near to pasturages suitable to the time of year. But even in this choice of his retreat only a single consequence, drawn from a single observation is required. When he has been often disturbed in his lair, he employs in concealing it an art which can only spring from sharpened perceptions and more complicated reflections. Frequently he will change his covert with the wind, that he may be able to scent and to hear any danger that may threaten him from without. Often, instead of returning in confidence and straightway lying down to rest, he will wander around the spot; he enters the wood, leaves it, goes and returns on his steps many times. Without having any immediate cause for uneasiness, he employs the same artifices to which he would have

recourse to throw out the dogs if he were pursued by them. This foresight is an evidence of remembered facts, and of a series of ideas and suppositions resulting from those facts; for indisputably such a proceeding must be the consequence of the following reasoning: "A dog, led by a man, has frequently put me to flight, and has followed me a long time by scent; therefore my scent must be known to him. What has already happened several times may happen again to-day; therefore I must guard to-day against what has formerly befallen me. Though I am ignorant how they know my path and track it, yet I suppose that by means of a false scent I may be able to throw them out; for this purpose I must go and return upon my steps to deceive them as to the way I take, and thus secure my tranquillity." Whoever will reflect on the absolute necessity of a motive to produce this complicated determination, and the action to which it leads, will see that it cannot proceed from what is called instinct, for the actions of instinct only suppose a single present idea or sensation. Thus, it is in consequence of a single idea that the stag browses the grass, that the carnivorous animal springs upon his prey, that the infant takes its nurse's breast; but it is not possible that a simple and immediate sensation should lead an animal to invent stratagems, in consequence of a previously-experienced annoyance, and of the form in which it has presented itself to him.

We have said that the time of rut also breaks the monotony of the ordinary life of the deer; nevertheless, neither love, nor the societies into which they form themselves during the winter, are to them very fertile sources of ideas. Love to them is but a passing desire of the most purely sexual nature, involving no mutual preference, no family cares. They cannot even be said to live in society, properly so called; during the winter they herd together for mutual warmth, and this need over, they separate, or, if they remain together, appear in no wise to feel any attachment, except the fawns and hinds, whom weakness and timidity keep together. They can give one another no reciprocal aid in the common events of life, and they live almost entirely alone. We might be led to infer from this that mutual aid forms the only bond of society among animals, but we find in some species instances which show that society has charms for them wholly distinct from any selfish interest. As the stag has no social affections, so also his hatreds are very transitory; the only combats which take place are all at the time of amorous effervescence common to them all. Then those in whose herd the hinds are few, or who are oppressed by the stronger, remove, and will sometimes make long journeys in search of better fortune. When their desire is at its height, the stags are in constant motion; they do not keep to any particular pasture

or lair; they make the forests ring with a terrible cry, which has the tone of the greatest suffering; they rush about as if wild, without seeing where they go, and soon lose all the flesh they have gained during the summer. Among the females, the pretended refusals which, in those kinds which choose their mates, attract the male and inflame his desires, are not found; and the combats between the males seem to have for their object solely the possession of the female, without any admixture of preference. When the battle is unequal the weaker soon yields the field of love to the stronger. In this species the old stags have the singular advantage of being the most ardent; it is to them the hinds first yield themselves, whether from choice or fear; yet, when nearly equal strength makes the battle long and dubious, the hinds, which should be the prize of the conqueror, fall to some third rival, who profits by the fury of the first-comers, and escapes unharmed.

We see that the stag, despite his delicate senses, his quick eye, admirable scent and hearing, acquires little knowledge, because he has few motives to attention. With animals of his own kind he is in merely temporary relations, involving perfectly simple sensations and requiring no reflection. With other animals, and with man, his only relation is that of defence, and his only resource is in flight. We must examine, then, the mode of flight he adopts, in

order to see the development of his faculties. Mere instinct will account for the alarm roused in a timid animal by the barking of dogs, and for its seeking to distance its pursuers; but that its flight should be regulated, modified, complicated, by ascertained facts, can only be ascribed to an intelligent principle; and these modifications unquestionably belong to the stag. Before he has had any experience his flight is simple, and without any plan. As he is only acquainted with the place where he was born, he returns continually to it, and only quits it unwillingly, and at the last extremity. But when the perpetually-recurring necessity of escaping from pursuit has forced him to reflect upon the manner of his pursuit, he invents a system of defence, and he exhausts every variety and every design of which the action of flight admits. He has perceived that in thickets, where the passage of his body leaves a strong trace, the dogs follow him ardently, and without any checks; he therefore leaves the thickets, and plunges into the forests where there is no underwood, or skirts the high road. Sometimes he leaves that part of the country altogether, and depends wholly upon his speed for escape. But, even when out of hearing of the dogs, he knows that they will soon come up with him; and, instead of giving himself up to a false security, he avails himself of this respite to invent new artifices to throw

them out. He has observed that his footsteps betray him, and that his pursuers follow them; to conceal them, he takes a straight course, returns on his steps, and bounding from the earth many times consecutively, throws out the sagacity of the dog, the keen sight of the huntsman, and, at least, gains time. Sometimes he makes for a new country the instant he is roused. Sometimes he begins more cunningly; he crouches down, and lets himself be roused a second time as if hurt, then darts away at his highest speed. If he shows a disposition to slacken his pace, it is never when the dogs are distant, but when he is hard-pressed; he will then often drop down, in the hope that their ardour will carry them beyond the track, and should it do so he retraces his steps. Often he seeks the company of others of his species. This might, at first sight, be ascribed to the natural feeling which leads any timid animal to seek safety in numbers; but we have a proof that he has another aim, in the fact that this association does not even last till the danger is past. When his friend is sufficiently heated to share the peril with him, to be liable to be mistaken for him in the ardour of the chase, he leaves him to his fate, and escapes by rapid flight. Frequently the quarry is thus changed, and this artifice is the one the success of which is most certain.

Among animals whose way of life is the same,

and whose resources are equal, the weaker will always be the most cunning, for strength needs no assistance from art. The fallow-deer, whose nature nearly resembles that of the stag, and who is his inferior in strength and swiftness, has recourse to the same artifices, and in a much earlier stage of his flight. The roebuck does the same, to a still greater extent. His natural agility would be a great advantage to him if he had not the misfortune to leave a very strong scent, in following which the eagerness of the dogs never slackens. He has also, with a form very like that of the stag and fallow-deer, some peculiar inclinations, denoting a superior instinct. The male and female, who are generally brother and sister of the same year, live together, and exhibit a mutual attachment, which only ceases with the death of one of them. Yet in the ordinary events of life they can be of no use to one another, and the pairing season lasts not more than a fortnight in the whole year; so that they must feel a want of affection pure and simple. They remain with their young until the next season; thus the roe is to be seen, successively, living in fraternal, conjugal, and family union; that is to say, the father, and mother, and two or three little ones. The degree of maternal affection is nearly the same in the three kinds, and shows itself by the same characteristics: a tender and bold anxiety, which

makes the mother cross the path of the dogs to lead them away from her young; at first a feigned flight, and a prompt return when the danger has passed by; but in all cases courage is in proportion to resources and strength, and craft in proportion to weakness. Thus, then, it is among the weakest animals, in whom a similar organisation produces a similar way of life, that we must seek the highest order of intelligence. For instance, the hare, endowed by nature with very inferior organs, resorts, when hunted, to expedients which the fox might envy. The rabbit, a still feebler animal, shows even more intelligence; for he digs himself a habitation, chooses a partner, and lives in society. His interests are not confined to his family even, but embrace the entire subterranean republic, the whole of his fellows with whom he is brought into contact. When the community leaves the warren to feed, those whom experience has taught suspicion always divide their attention between their food and the dangers which may arise. If they see reason to dread a surprise, they give the alarm by striking the ground with their hind feet, and the whole warren rings with these terror-inspiring blows. All the colony usually hasten to return to their holes; but should any younger or more imprudent rabbits persist in disregarding the warning, the old ones remain behind, continuing their

summons, and risking their lives for the public safety.

It appears to me that a collection of the simple facts of the life of the various animals I have mentioned to you fairly leads us to the conclusion that they have one faculty in common—sensibility. We may further add that this faculty, more or less excited by their respective needs and circumstances, is the source of the different degrees of intelligence we find, whether in the species or in individuals. Frequently that which we regard as the natural acuteness of instinct is nothing but the development of that self-love which is everywhere the necessary consequence of sensibility. Every sentient being is, by the necessity of the case, susceptible of pleasure and pain; he seeks the one, and is disturbed by the other; his sensations tell him what is his present state; his memory recalls his past state; and the nature of the affection which he either feels or remembers produces his present enjoyment or suffering, and, giving birth to his desires or fears, determines his acts. Those acts which may be referred to instinct are invariably the consequence of organisation. It is by instinct that the stag grazes, that the fox lives upon flesh; but we may not refer to instinct, but to the faculty of sensation and its effects, the expedients to which these animals resort in the gratification of their natural wants. Instinct deter-

mines the object of desire, desire produces attention, attention enables the animal to observe, and fixes the results of his observation upon the memory; the recollection of these facts gives experience, experience points out the means to be employed. If these means are successful, they constitute his knowledge; if unsuccessful, they bring reflection, which makes new combinations of facts, and gives birth to new expedients. The actions which are common to a species, and which appear to distinguish it from others, are not always the effect of instinct—that is, of a secret inclination wholly distinct from experience and reflection. For instance, the disposition which leads the rabbit to burrow is by no means purely mechanical, as it is absolutely wanting in those which have been domesticated for some generations. It only manifests itself when the need of sheltering themselves against cold and danger has led them to reflect on the means of defence. It is not, then, always in consequence of an instinct in itself superior that we discern in the actions of some species a far greater sagacity than in those of others. It appears certain that if cold or other discomforts did not affect the rabbit more than the hare, he would never take the trouble to dig himself a burrow; and we are perhaps in error when we ascribe to his industry the simple result of his weakness. But when necessity has led any one species to a

discovery of this kind, from it may spring a succession of ideas which places this species far above others. The mere fact of their labouring together at their habitation, and living in society, is a new order of things, very suggestive to sensitive beings hitherto wanderers without any fixed abode. It is impossible but that the trouble of their work, added to the sense of its utility, should lead to a feeling of proprietorship, and that some kind of neighbourly relations should be the result of cohabitation. The notion of property incontestably exists among rabbits. The same families occupy the same warrens without moving, and extend them as their number increases. We have seen the lively and courageous interest they take in all the members of their kind. Old age and the rights of paternity are held in high esteem by them, and it seems likely, from what we know, that were we able thoroughly to appreciate the domestic economy of this subterranean people, we should find a degree of order equal to that which is supposed to exist among bees.

Although animals are principally indebted to their wants for their inventions, it would appear as if those whose organisation is more perfect must possess a superior degree of skill relatively to those of their senses which are most acute. For instance, in all probability the eagle would have, in point of all those ideas which result from the sense of sight, a

great advantage over the hare, whose eyes are very defective. Our metaphysicians appear nearly agreed that the judgments of the eye have need of correction by the touch. Our hands, say they, teach us to distinguish forms, and our feet enable us to guess at distance by mere sight. As far as distance is concerned, quadrupeds have equally with us the power of judging by the touch, since they also travel over space. Most of them have, too, in an exquisite sense of smell, a kind of extra sense of touch, which verifies the judgments of the eye; but in my opinion they are perfectly able to judge of form without touch, and if delusive forms are presented to them, the delusion soon vanishes, without their having recourse to this sense. Birds calculate distances with perfect accuracy without any need of touch. A falcon who from a great height darts down upon a partridge on the wing, must calculate exactly the distance between him and his victim, the time it will take him to accomplish that distance, and the progress the partridge will make in that time; for if he neglected any one of these conditions, he would miss his aim and lose his prey. It is probable that those animals which are deficient in one sense are in some measure compensated by the greater quickness of the others, as we see the ear and the touch much finer in blind people than in those whose sight is unimpaired, whether because nature has proportioned the respec-

tive senses to the peculiar interests of the animal, or that these interests in themselves develop the corresponding sense by frequent exercise.

However this may be, when we do not allow first appearances to weigh too much with us, but observe attentively, we are inclined to believe that there is among the different species but a very slight fundamental disparity of intelligence. The faculty of sensation is more habitually called out in some species, but there are others in which this faculty seems only to await the call of circumstances and want, to reach an equal degree of perfection. The respective organisation of animals doubtless sets limits in some directions to the exercise of their natural intelligence, and determines the effects of their faculty of sensation. It is in consequence of the wants and resources peculiar to their organisation that one has a genius for flight, another a genius for rapine. If an herbivorous animal is without pasture, the conformation of his teeth and his repugnance to flesh leave him helpless, and no degree of intelligence will avail to prevent his dying of hunger. His efforts are limited by impossibility. To decide this question of the fundamental inequality of intelligence in the different animal species, a question which never occurs to the superficial observer, it would be necessary to ascertain if there are different degrees of sensation; if, for instance, the oyster is

less susceptible than any other given species to the impressions of pain and pleasure. But we cannot settle this point, because sensation is absolutely incommunicable; and though the consequent action may show its character, it cannot represent its intensity. Yet we cannot but believe that there is a wide difference between the sensations of a living creature at different times, since the effect of the same object upon ourselves differs according to our varying states of mind and body. Hence we may conclude that whole species exert their faculty of sensation in different degrees. Nearly all the animals who live on grass pass a part of their life in a state bordering on habitual torpor; the life of those who live on flesh is much busier and more active; but both alike find their happiness in the exercise of their natural faculties, and there are very few kinds who appear to feel any want of excitement or movement distinct from simple appetite. This love of repose is perhaps, to a certain extent, the quality which hinders each kind from reaching the degree of perfection allowed by its organisation. At another time I will endeavour to put together some reflections I have made on this subject. They will explain what are the circumstances and conditions indispensable to the development within its natural limits of the perfectibility of animals.

I have the honour to remain, &c.

LETTER IV.

Difficulty of judging of the progress of animals even when we have discerned in them the faculties which constitute intelligence—Superior development of their senses—The absence in them of incentives to progress—Of social life, leisure, the artificial passions, *ennui*, and the power of writing.

On a survey of the daily life of some few animals, we have seen that they are endowed with the faculties of sensibility and memory, the power of grasping the relations of things, and of judging of them, of reflecting upon their actions, &c., and we cannot doubt that the use they make of these faculties is regulated by their needs and circumstances. We are compelled to confess that we cannot measure the degree of intelligence to be found in the different species, because it varies according to circumstances, always increasing when necessity keeps it in action, and only decreasing in consequence of disuse.

Arguing from these incontestable facts, we ought apparently to be able to discover among animals some general advances in intelligence. Perfectibility, the universal attribute of all beings possessed of sense and memory, ought to develop itself in favourable circumstances, and gradually to elevate some species to a higher rank. They would then

be seen, civilised in one place, more or less wild in another, exhibiting marked differences in their ways; but we see nothing of the kind. If this faculty of development were less certain, its never being turned to account would lead us to doubt its existence; but a little consideration shows us how far we are from being competent judges of beings differing from us in so many points, and how possible it would be for them to make very important steps without our being able to recognise them. It further informs us that this inherent perfectibility stands in need of so many conditions and external aids which are not found united among animals, that it is not difficult to see why its effects are so insignificant. That we cannot estimate the progress of animals seems to me to admit of no question. In observing some of their actions, we may trace the path by which their intelligence has guided them to the determining conclusion. We may distinguish between the effects of simple perception, of judgment, of reflection, &c. We may penetrate some of their designs, and find the clue to the influences which have led to some of their premeditated actions, because these influences are essential and necessary to the actions we witness. But though we may clearly perceive the object of the swallow when busy constructing her nest, we cannot discover whether time has brought any improvement

in her style of architecture, whether experience has added to its elegance or convenience. We cannot even decide what is her standard of beauty or convenience. In general, in all works which have a common aim, and which are equally removed from the sphere of our observation, we can only be sensible of a general resemblance, which leads us to conclude the existence of an absolute uniformity.

It is probable animals are equally insensible to the difference between our palaces and cottages, and that the eagle, in flying over different countries, is blind to the degrees of civilisation attained by their inhabitants. A horde of savages wandering about their wigwams, and a group of philosophers moving in a well-built town, must equally appear to him simply beings walking on the earth, and differing little in their movements. It is even beyond our powers, in observing most kinds of animals, to estimate the progress made by individuals. The chief instruments of their ideas are precisely those which are least suggestive to us, so that we cannot know the elements of their complex ideas, because we do not share in the same degree the principal sensations which compose them. From this results a radical difference between their system of knowledge and ours. For instance, the sense of smell is almost null in its influence on our habits and progress. But if we consider this sense as seen in the carnivorous

animals, that is, as one of their chief organs, as a most delicate touch, which informs them, at an immense distance, of the relations objects may have with their preservation, we see that all the knowledge which animals may acquire by this sense is to us unattainable. If we venture to pronounce upon that group of their ideas which depends directly or principally on the sense of smell, we put ourselves in the position of a blind man who should venture to judge the progress of painting.

It is certain then that animals might have made much progress without our perceiving it; but it is probable that they have not done so, and that they never will. They have not sufficient activity of mind, and are wanting besides in several of the conditions required to make perfectibility a fruitful quality. First of all, animals have no motive to improve. We have seen, in former letters, that their ordinary life consists of a repetition of a few very simple acts, which supply all their needs. Those whose plundering tendencies keep their ingenuity alive, or who are excited to an almost unceasing attention by the multiplicity of dangers which threaten them, acquire, it is true, a much wider knowledge than others, but as they do not live in society, this knowledge, almost individual, is communicated to a very limited number of the species. Besides, their life is an alternation between

sleep and movement. Those animals who do seem to live in society either are constrained to do so by fear, a feeling by no means favourable to progress, or are only bound together by a temporary link, or can give each other no aid in procuring their subsistence; or else, constantly threatened by man, they live in a precarious association, always either disturbed or on the point of being so—a state which can admit of no project but that of keeping together for the present, without any regard to the future. But we must be careful not to conclude that because we do not see them make any visible improvement, therefore they have not the faculty of perfectibility. A man born without eyes and hands would yet have in himself the power of acquiring new ideas, though wanting the external means. Even with the aid of all their senses, men continually occupied with the care of providing for their most pressing wants never pass the narrow circle of ideas relative to those wants, and the number of their ideas is yet smaller than that to be found in individuals of certain species of animals.

Many conditions are required as handmaids to perfectibility, and without them beings of the highest order of possible perfectibility would never realise its effects. Society, leisure, the artificial passions which spring from these two combined;

ennui, the offspring of the passions and of leisure; language, writing, which involves the use of the hands, are so many means in the absence of which no sensible progress can be reasonably expected from the most intelligent beings. Now, we must ascertain whether all these conditions are possessed by animals, and what is the relative importance of those they have not.

There are many species which appear to live in society; but when we come to examine the nature of their association, it is easy to see that it cannot lead to much progress. All the herbivorous kinds which live in flocks seem to be kept together by mere timidity, which leads them to seek encouragement in the company of others. But this common feeling, though it unites them, establishes no active helpful relations between them, even with regard to its immediate object. Though their fears are less when they are in company, union does not make them more formidable to their enemies. A single dog will break up this timid assembly, whose union in no way contributes to its strength. The other details of their life tend rather to weaken than to strengthen the bond which might be formed between them. Feeding all together on grass, equally necessary to all of them, this simple action may be a source of rivalry in case of dearth, but can never lead to any mutual aid. A stag has nothing to

expect from his neighbour, and it may happen that this very neighbour may deprive him of half his subsistence; thus there is no society, properly so called, among these animals. Those even which seem to be united for mutual defence, and which feel the advantage of society in the increased strength and courage it gives—the wild boar, for example—feel also its inconvenience as far as their subsistence is concerned. As soon as the males have reached the age of three years, and their tusks being fully grown enable them to depend upon themselves, they separate and live alone; it is only the females, who are less perfectly armed, and the young males, who are seen in herds. Rabbits live in society; but though these weak and timid animals acquire all the ideas relative to their safety compatible with their organisation, they are actuated by a continual fear, too absorbing to leave much time for reflection. Yet, if we penetrate into the interior of their habitations, we may observe the ingenuity they show in the arrangement of their apartments, and a complete set of precautions which ensure their safety, amidst the various accidents to which they are exposed. Their burrows are usually so situated as to be out of danger of inundations; the entrance half conceals the interior of the domicile; the numerous chambers communicating one with another, and the winding passages, fatigue and often discourage

the ferret who makes his way into the abode. The rabbit, sufficiently alive to his true interest to prefer a siege to the danger he would run in leaving his citadel, finds in this labyrinth a very secure asylum. But for all this, these animals, who feed on grass, cannot help one another in the satisfaction of the daily wants of life.

The carnivorous animals never live in society; their natural voracity and the scarcity of prey oblige them to keep away from one another. Two she-wolves, two birds of prey, never settle with their families within a certain distance of one another, and this distance is in proportion to the extent of country they require for their subsistence. Far from living in society, if they clash in their pursuit of game a combat almost always follows, which ends in the weaker being obliged to remove.

There are some species whose organisation and instinct dispose them to work together for the common weal: of such are the beavers. It is impossible to predict with certainty to what degree their intelligence would rise if they were allowed to multiply undisturbed, and to enjoy the results of their common labour. But their unfortunate property of being useful to man has been the cause of their being much more the subjects of chase than of observation. Hardly are they suffered to begin their lodges before they are pulled to pieces. They have

no leisure, constantly pre-occupied by a fear which leaves no room for the exercise of curiosity.

Mere herding together does not constitute society properly so called, leading to general improvement. Those animals even which seem to attract one another, and to feel a certain satisfaction in living near one another, want the most essential condition of society if they are not so organised as to render one another reciprocal services in the daily wants of life. It is this interchange of services which is the foundation of the relations which make up society in the true sense of the word. These relations must spring from different functions all working together for the common good, and by this division of labour making life easier to each individual, contributing to economy of time, and securing some leisure to all; thus the merit of each individual is decided by the greater or less degree of usefulness of the office he has chosen. Emulation is excited by the habit they acquire of comparing themselves with their neighbours, and emulation is itself an incitement to new efforts. Those who feel their inability to be useful, at least seek to appear so; and here we enter upon the domain of the artificial passions, the fruit of society and of leisure.

Animals, having as we have seen neither society properly speaking, nor leisure, have no artificial passions. They have none of those conventional

wants which become as urgent as natural ones, though they are more difficult to satisfy, and which, by this very property, keep the interest, the attention, and the activity of individuals always at work. The longing for excitement, for a conscious existence, which we feel in periods of watching and waiting, is the chief cause of our unhappiness, of our crimes, and of our improvement. It is an ever-active want, whose very satisfaction gives it new strength, because the remembrance of a lively emotion makes calmer ones seem insipid by comparison. From this cause springs that eager seeking after all stirring scenes, all kinds of sights which may absorb and impress the mind, and that uneasy curiosity which leads us to seek in meditation some interesting occupation within ourselves. To animals this state—the torment of the man of leisure and civilisation—is unknown. The only calls upon their attention are those of hunger, of love, and the necessity of providing for their safety. These three objects occupy the greater part of their time, and the remainder is spent in a kind of half slumber, which admits neither of *ennui* nor of that stimulant of curiosity to which man is subject. Their means of procuring their food, and of avoiding danger, are limited by their organisation. It would be impossible for them to invent others, because nature has denied them the means of making tools; they have no resources but in

their own ingenuity and their natural defences, and we have seen that when these are excited and perfected by circumstances and difficulties, the greatest human genius has nothing to teach them. Besides, animals are provided by nature with clothing; and this first want must have been, in the beginning, the source of many a discovery to man. Those nations who require little or no clothing are generally more stupid than others, from not feeling a want which is the source of numerous inventions and arts.

I will here stop, and reserve as the subject for another letter the influence which love brings to bear upon the perfectibility of animals.

LETTER V.

Influence of the sexual instinct—Of the maternal instinct—Temporary character of both—Arguments in favour of their possessing an articulate language over and above the language of action.

However lively the passion of love may be, and however strong its manifestations in the animal creation, it can by no possibility lead to any very great progress in them. In those kinds in which the males mix promiscuously with all the females, we see a reciprocal and universal jealousy in the season when all alike feel the influence of this passion. But the question can only be decided by force. The vanquished has no redress: flight alone is open to him, and the stronger remains master of the field.

In those kinds which pair, whatever may be the motives of the choice, it is certain that the choice is made, the idea of mutual possession is established, morality enters into love, and jealousy becomes deep-seated and logical. The females, who are supreme in the details of this passion, because it is upon them that depends the satisfaction of it, become extremely well versed in the art of irritating the

desires of the male by their caresses, refusals, and every species of enticement—now concealed, now open. They learn to conceal their own inclinations, or at least to dissemble the strength of them. Even when they yield most passionately to their own desires, they know how to throw over their favours an air of compliance and sacrifice. Coquetry is by no means an invention peculiar to the human kind. It is equally known to all those which choose their mates. But this art, incapable of existence apart from the passion itself, cannot lead them to any great progress, since the passion itself occupies them, at the most, but three months in the year. The want ceases, and its cessation, being total, brings with it the forgetfulness of all the various ideas it had excited. It is only in man, and above all in man unoccupied and civilised, that love can be a constant spring of activity, and, consequently, a source of improvement of all kinds. It occupies him always, because conventional ideas, added to the natural feelings, give it a degree of force which it could not attain in solitude, and even add accessories which perpetuate it. Not only do the mutual charm and choice establish the idea of possession; vanity steps in to support it, and exaggerates the value of that which we regard as peculiarly our own. A profound esteem for the object beloved increases that which

we have for ourselves. It lays over this system, made up of different ideas and feelings, a varnish of excellence and dignity which imposes even upon their subject, whence a multitude of actions, the strength and persistency of which react upon the soul, and make it capable of the greatest efforts. Animals are without this ever-active impulse. Neither their appetites, the society of which they are capable, nor their natural passions furnish them with either motives or means for perfecting themselves to any great extent. As for artificial passions, we see that they are not susceptible of any; and, in fact, we know that they have none, except avarice, which is observable in some species. But as the objects of this passion, as shown in them, must be perishable, their hoarding and saving are confined to a certain time. Avarice with them simply involves foresight, without any complication whatever. It allows of no deep reflection on the means of acquisition, because they have but one. It is a simple consequence of a past sensation of hunger. The slightest reflection upon the inconveniences of this want leads to a universal foresight in all those animals who are exposed to it. The carniverous kinds conceal and bury the remains of their victims for future need. This care might be dignified by the name of prudence, if these animals did not, when the opportunity offers, exceed the limits of

their largest possible wants. It is this useless profusion which gives their prevision the character of avarice. Among the herbivorous animals, "those who are so organised as to be able to carry away the grain on which they feed, gather stores which they carefully abstain from touching as long as they have no pressing need of them. Of such are field rats and moles, &c.; but as their scarcity only lasts a few months of the year, their foresight cannot have the continuous character peculiar to the human miser, who, always absorbed in the same object, gradually comes to see no limit in the future." If they attach any notion of property to the hoards they have made, this notion soon wears off; in a short time new treasures, which have cost them no trouble, presenting themselves, make them forget those they had accumulated.

Of all the passions of animals, that which seems to leave the deepest traces in their memory is maternal affection. This is natural, because it influences them very powerfully, and for a considerable time. The ideas which they acquire relating to the education of their young become as familiar to them as those which regard their own preservation. A white partridge of some experience does not hastily decide where to build her nest. She places it on high ground to preserve it from wet; she is careful to make it in the midst of briers and thorns,

that it may be less visible and accessible; she covers her eggs with leaves when obliged by hunger to leave them. In a word, her loving foresight shows itself in every way for a progeny as yet unknown to her. As soon as they are hatched, there is seen in the mother, and even in the father, a restless, incessant activity, a painful assiduity, and a bold defence if the family is threatened. From such lively and tender solicitude results a knowledge of the places where the family may find food in the greatest abundance, and this knowledge supposes previous observations, without which the choice of place would not be made. This passion, which exhibits itself so plainly in all the mothers, and which extends also to the fathers in those kinds which pair, has some peculiarities which deserve notice. It seems to excite a more lively solicitude than the animal is capable of feeling for itself. Birds are seen, when their young are threatened with death from cold or rain, sheltering them so assiduously under their wings, as wholly to forget to feed themselves, and they are often found dead upon the nest. Hunger alone is a feeble incitement to activity, compared with the care of providing for the wants of their little ones. The need these feeble beings have of their help seems to double the courage of the parents, and produce in them that degree of passion and enthusiasm which either ignores peril

or despises it. Yet it is true that though all birds carry this boldness far beyond the limits their means of offence or defence would seem to warrant, yet it is really seen to be in proportion to these means of defence. The she-wolf and wild sow, of great strength, and provided with very formidable arms, become terrible when they have their young ones to protect. They rush furiously to recover them from those who would easily put them to flight if they had only robbed them of their food, though in extreme hunger. Of all griefs, the most poignant and deep seems to be that of a mother doomed to listen to the cries of her offspring. The hind, by nature feeble and timid, will also face danger courageously in such a case; but soon, betrayed by her weakness, the necessity of flight overcomes her courage. Notwithstanding these differences, it is evident that in nearly all species of animals the courage of the mothers more than counterbalances their instinct of self-preservation. We may deduce from this that the passions, when they have reached their height, lead to excess, and that the rapidity of the movements they excite in sensitive beings carries them beyond what would seem the natural limit of feeling. Up to a certain point they enlighten. For instance, the mother's impetuous fury is her best means of saving her young, because it often imposes upon those who menace them; but, carried a little

farther, it leads her into danger without furthering her designs. Still there is a measure to this sensibility and a limit to its excess. In those species in which the solicitude of the parents is closely concentred upon the interests of the family, we see no affection for the species in general; rather, a decided hatred for those of their fellows who are not of the family. In places where, from the abundance of game, food is scarce, the partridge, who is most careful and active for the welfare of her own brood, pursues and kills without pity all those who do not belong to her, if they cross her path. The hen pheasant is much less careful to call her chickens together and keep them near her. She abandons, without much anxiety, those who wander and leave her; but at the same time she has a more general tenderness for all the young of her kind; it is enough to follow her to become entitled to her care; and she is the common mother of all who stand in need of her. Among ourselves, we cannot look for such warm feelings, such constant thought and attention, such pleasant, loving attentions from those cosmopolitan souls whose wide sensibility takes in the whole universe. Paternity, relationship, friendship, even love—these ties, so strong for men of more concentrated natures, lose their intensity as the affections become more diffused. Perhaps the most desirable thing would be to live in society with

the friends of the human race, and in intimacy with those to whom the human race is somewhat less dear than their friends.

Although in general animals are fully absorbed in the care of their family, and the ideas connected with this care leave deep traces on their minds, yet we may see that not much progress can be expected to result from these ideas as regards the species; because these cares cease with the need for them; the rising generation soon reaches maturity, and love dissolves this temporary society at the end of a few months, to give birth to new families. We see that animals, though perfectible, have not, even in their strongest passions, sufficiently interesting and continuous motives to raise them in any high degree. In this point they can obtain hardly any help, either from the nature of their associations, when they have any; from the motives which draw them together; from leisure, which they are without; or from *ennui*, which is but a consequence of leisure. They want, therefore, most of the conditions necessary to improvement. We have yet to inquire whether they have the means of communicating their ideas, and the articulate language necessary for this purpose.

We only notice in animals cries which appear to us inarticulate; we only hear the constant repetition of the same sounds. Besides, it is difficult for us

to image to ourselves any sustained conversation between beings with a muzzle or a snout. Consequently it is generally supposed that animals have no language, properly so called; that speech is our peculiar faculty, and the exclusive expression of human reason. We are too superior to them to have any interest in deluding ourselves and in shutting our eyes to their advantages; and we ought not to allow ourselves to be deceived by an apparent uniformity of sound. When we hear a language spoken which we do not know, the sounds appear to us very monotonous. Habit alone teaches us to appreciate the differences, and even habit is scarcely sufficient without some knowledge of the language. These differences are still more difficult to judge of in the language of animals, from the want of similarity between their organs and ours, which makes it wholly impossible for us to recognise and distinguish their accent, expression, or inflections. Do they speak or not? This question must be resolved by the solution of two others. Have they the necessary conditions of speech? Could they, without it, do what they do? The only requirements of language are connected ideas and the faculty of articulation. We have proved, and that without a shadow of doubt, in the preceding letters, that animals feel, compare, judge, reflect, conclude, &c.; they have, then, in respect of con-

nected ideas, all that is required for speech. As for the faculty of articulation, most of them have nothing in their organisation which, so far as we can judge, forbids it. Birds, in other ways so widely differing from ourselves, succeed in forming articulate sounds precisely the same as ours. Animals have, then, all the necessary conditions of language. But if we closely investigate their actions in detail, we perceive further that we cannot for an instant deny them the power of communicating some at least of their ideas to one another, and this by the aid of words. We are positive that they never fail to distinguish between the cry of terror and that which expresses love. Their different agitations have different intonations which characterise them. If the mother, alarmed for the safety of her family, had but one cry to warn it of its varying dangers, the family would always be sure to do the same thing when she utters the cry. But, on the contrary, their movements vary according to circumstances. Sometimes a hasty flight is the consequence of the cry of alarm; at others, concealment; and, at another time, they advance to the combat. Since then the actions which follow the mother's command are different, it is impossible to conceive that her language is uniform. Can we assert that the expressions of a male and female during the period of their intercourse are not very various, when we can

clearly perceive in them a thousand movements, all differing one from another — eagerness, more or less pronounced, on the part of the male; reserve, mingled with allurement, on that of the female; pretended denials, rage, jealousy, quarrels, and reconciliations? Can we suppose that the sounds accompanying these motions do not vary with the situations they express? It is true that the language of signs is in great use among animals, and that it suffices for the communication of most of their emotions. This language, familiar to all who feel more than they think, makes an immediate impression, and its communication of feeling is almost instantaneous; but it is not enough to express all those combined actions of animals which suppose concert, agreement, designation of place, &c. Two wolves, who, to facilitate their chase, have each taken a different part—that of the one being to attack the victim, while the other awaits it at some place agreed upon, to run it down with fresh strength—cannot have acted thus admirably in concert without some mutual communication, and this communication is inconceivable unless they have a spoken language.

The education of animals is mainly conducted by means of the language of action. Example shows them most of the movements necessary to the preservation of their natural life. But in cases where the objects of foresight and of fear increase with

the increase of danger, this language becomes inadequate; instruction becomes more complicated, and words are necessary to convey it. Without spoken language the education of a fox could not be completed. It is a notorious fact, that long before they have had any chance of learning by personal experience, young foxes, leaving the den for the first time, are more suspicious and watchful in places where they are much hunted than are the old ones in more peaceful neighbourhoods. This truth, which is incontestable, demonstrates, once for all, their need of language; for how, in its absence, could they acquire this science of precautions, which supposes in them the knowledge of a number of facts, and the power of comparing and of appreciating them? It seems, then, absurd to doubt that animals have a language, by means of which they transmit to one another those ideas the communication of which is necessary. But the invention of words being limited by the need felt for them, it is plain that in the language of beings who are ever in a state of action, of fear, or of sleep, there will be but few. They have a very limited number of relations to learn; and, from their way of life, are entire strangers to those many subtle relations which are the fruit of the artificial passions —of society, of leisure, and of *ennui*. It seems probable that speech is more varied among the

carnivorous, more simple among the herbivorous animals, &c.; and that in every species it would, like their intelligence, advance, were they in possession of the external conditions necessary to progress in both respects. But want, the principle of all activity in all sentient beings, will keep each species within the limits assigned to it. All these different orders of intelligent and active beings serve to beautify the universe, and in following each its peculiar bent, they are in harmony with the, to us unknown, design of Him who created them all for his own glory.

LETTER VI.

Perfectibility within certain limits of the wild animals established—Consideration of some domestic animals—Their superior acquirements—The elephant—The dog—Watch-dog—Shepherd dog—Greyhound—Setter—Some of the arguments of the partisans of the theory of the automatism of animals examined and answered.

We have seen, in enumerating the daily actions of some few wild animals, that their knowledge grows with their wants, and that their intelligence, where it is called forth by necessity, makes all the progress which their organisation admits of. We have also seen that perfectibility, with which all animals appear to us to be gifted, can scarcely be said to affect more than the individual, and we have had no difficulty in discovering what external conditions indispensable to a sensible improvement in the species are wanting in those animals. And so perfectibility, in itself unlimited, manifests itself to us confined within the limits fixed by their organisation and wants in order that no one species may pass the bounds assigned to it by the Author of Nature. If we now turn our attention to some of the domestic kinds, we shall be still more confirmed in these same views. Everywhere we shall

behold perfectibility openly showing itself, though never passing the limits above stated. M. de Buffon justly remarks that these animals acquire knowledge of which those who are left to themselves are wholly ignorant, but which naturally arises from their relations with us. I have two observations to make upon this remark:—If they acquire, they must have the means of acquiring. We do not impart to them our intelligence; all we do is to develop their own; that is, to bring it to bear upon a greater number of objects. But the progress which the domestic animals make under us is necessarily purely individual, both because we deprive them of their liberty, and by reason of the very nature of their relations with us.

You should read, in the work of M. de Buffon from which I quote, the very interesting history he has given us of the elephant. That eloquent naturalist has most minutely detailed the ways of this singular animal, which, in fact, possesses the highest claim to a particular study. It is pleasant to see intelligence, discernment, even the perception of justice, and the outward form of virtue, carried to so high a degree in him. In the elephant we have docility, side by side with high mettle, natural gentleness co-existing with strong resentment of injury, and, further, sentiments of compassion, benevolence, and gratitude. It is this

combination which has induced many authors to say that the elephant is inferior to man only in his inability to worship God, and some even to allow him that excellent prerogative. It would seem that for his superiority he is chiefly indebted to his trunk, which serves him as a most exquisitely acute organ of touch, and lends itself to a great variety of uses.

After the elephant, the dog seems, of all domestic animals, the most susceptible of relations with man. He is also the one whose intercourse with us acts most powerfully in extending the circle of his knowledge. The dog is so well known, that this single instance ought to have entirely discredited the theory of the automatism of animals. How could we refer to a blind instinct the ever-varying motions of so intelligent an animal, so easily and in so many ways rendered serviceable to man, and who, preserving, even in dependence, an undeniably free spirit, excites the loving interest and friendship of his master by his voluntary submission? According to the purposes to which his services are applied, we see in the dog improvements of two kinds. The first are due to the instructions given him; that is, the habits formed in him by the alternative of pleasure and pain. The second must be referred to his own experience; that is, to his reflections upon the facts he contemplates, and the sensations he feels.

In both kinds of improvement the progress is always in proportion to the wants and the interests which arouse his attention. The watch-dog, almost always tied up, whose sole duty is to bark at strangers, improves as little as any other animal whose intelligence has as little exercise. The shepherd's dog, constantly fulfilling an office in which his activity is excited by his master's voice, shows much more sense and discernment. Every fact relating to his object takes root in his memory. From these results an accumulation of experiences sufficient for his hourly guidance, and the effects of which are seen in the modifications of all his actions and movements. If the flock passes a corn-field, their watchful guardian will be seen drawing them together, as far as possible, from the precious grain, never losing sight of those which seem inclined to break through this restraint, checking the bolder ones by movements which excite their terror, and chastising those who neglect his warnings. Once refuse to acknowledge that reflection alone can produce this variety of intelligent action,—in other words, of action suited to circumstances,—and it becomes absolutely unaccountable. For, if the dog had not learnt from his master to distinguish between corn and the ordinary sheep-pastures; if he did not know that the corn was not to be eaten; if he were unable to see that his movements should be regulated by the in-

clinations of his charge, and to recognise those inclinations, his conduct would be inexplicable, and in the absence of all motive for action, we could not expect him to exert himself.

But, in order to follow the development of a dog's intelligence, it is especially in the chase that he must be seen. Hunting is natural to him, being, as he is, a carnivorous animal. Thus man, in employing the dog for this purpose, is only modifying and turning to his own account an aptness and a taste which nature had gifted him with for his own preservation. For this reason we see in the actions of the dog a mixture of the docility superinduced by chastisement, and of his natural inclination. One or other of these elements will predominate as circumstances have more or less called it into action. Nature is more self-reliant and free in the hound than in other kinds of dogs. The habit of subjection makes him attentive to a certain point to the words and gestures of the huntsmen; but as they cannot always keep up with him, his intelligence has room for exercise, and his personal experience often corrects the judgment of the sportsmen. The care taken always if possible to pursue the game first started, and to call off the dogs and punish them whenever they get upon a false scent, gradually accustoms them to distinguish by scent the stag they are pursuing from all others. But the stag, wearied

by the pursuit, seeks to join himself to others of his own kind, and then a more acute discernment is required by the dog. In this case there is nothing to be expected from young dogs. It is the part of consummate experience to form a correct and prompt judgment in this perplexity. It is the old dogs who are what is called *hardis dans le change;* that is, who can unhesitatingly pick out the track of their stag from among all those of the herd he has joined. In those whose experience is but slight, an attentive sportsman may behold an exhibition of hesitation, careful examination, and activity well worth his attention. They waver and give every sign of indecision. They lay their noses to the ground, or else rush to the branches upon which the animal, in passing, must have left a better scent, and they are only finally determined by the voice of the sportsman, himself acting entirely upon the judgment of the elder and more experienced dogs. If the dogs, carried away for an instant by their ardour, overshoot themselves, and lose the scent, the leaders of the pack will, of their own accord, adopt the only means which men could use. They try backwards and forwards, in hope of finding in the circle they traverse the lost track. The skill of the sportsman can go no farther, and, in this respect, the experienced dog seems to attain the limits of knowledge; in other words, to employ all the means which can ensure success.

The pointer or setter is in more constant and closer relation with man. He hunts always in his sight, and almost within his reach. His pleasure comes from his master; for to him it is a pleasure to take the game in his mouth. He brings the game to him; he is patted and praised if he does what he should do, scolded or chastised if he transgresses; he exhibits pain or pleasure, according to the treatment he receives; and there is established between them an interchange of services, of obligation, and of affection. While the pointer is yet young, though already rendered docile by fear, he attends to nothing but his master's voice, and executes his commands exactly. But, guided as he is, as far as the chase is concerned, by a far more acute and unerring sense than that of man, when age has given him sufficient experience, he will sometimes depart from this docility, though exhibiting in general a more rooted habit of obedience. If, for instance, the bird is wounded, and the old and experienced dog feels confident that he is on its track, he will not allow himself to be led astray by his master, who by voice and threats seeks in vain to recall him. The dog knows that he is doing him a service in disobeying him, and the caresses which follow his success soon convince him that he was justified in his disobedience. And it is always the custom with good sportsmen to guide the

young dogs, but to leave the old ones to their own devices. I shall not examine every species of the dog; it is useless to multiply facts, all supporting the same conclusions, where a few will suffice. Besides, every man may try experiments for himself upon this animal, whom we can train to anything we choose by the alternation of pleasure and pain; who attaches himself to man, who receives his instructions; but who, when he feels that his own experience is a better guide, will in his turn teach a lesson to his master, and boldly disregard the fear of punishment and the power of habit. Probably we owe something of the extreme docility of the dog, and of his apparent inclination towards submission, to a species of degeneration of very ancient date. At least it is an ascertained fact that many acquired qualities become hereditary. Certain habits unquestionably modify even the organisation, and thus perpetuate dispositions which eventually become innate. But there is no kind of animal that cannot be tamed more or less by the alternation of pain and pleasure. Those even which nature seems to have created most free, those to which she has given the most certain means of liberty—such as birds of prey—yet feel the yoke imposed by want upon every sentient being, and acquire in a very short time an astonishing degree of docility. We see them, when taught by repeated experience that obedience is the surest road

to success, listen to the voice of the sportsman, and obey his motions, even when soaring highest. It is impossible to refer to pure instinct,—that is, to a blind, unreflecting impulse—these actions of the brute creation in which their instinct is in a degree perverted. No cause can be found for their motions which does not involve reflection upon previous facts. Any education, supposing them without reflection, would be as incomprehensible as that of human beings deprived of liberty. All education, however simple, necessarily supposes the power of deliberation and of choice. And this is the point disputed by the advocates of the mechanical theory of animal existence. But, to speak plainly, that theory would not appear to merit serious attention were there not among its partisans many, led by the best motives, who therefore deserve that every effort should be made to undeceive them. I will therefore state simply and examine some of their chief objections or assertions; for they readily make the most groundless assertions for want of due observation.

"The facts alleged," say these gentlemen, "are inconclusive. It is perfectly true that we see in animals many series of actions from which we should argue the existence of the most acute and complex perceptions if they could reason; actions which we who reason could not perform without much com-

parison, judgment, &c.; but evidently this is but a feeble, deceptive analogy, since there are other and convincing analogies which destroy it."

No, sir, it is no *feeble analogy* which convinces me that the beasts compare, judge, &c., when I see them do things which I could not do without comparing, judging, &c. I have a direct certainty of it, a certainty which, if proved false, would involve in its fall the destruction of every natural rule for ascertaining truth. I know that, strictly speaking, we have no absolute certainty but of our own sensations and consciousness. Very fine arguments, very difficult to answer, are adduced to prove that we know nothing outside of ourselves. Yet I must regard that man as absurd who should, from these arguments, proceed consistently to extend his scepticism to all those things of which, by means of our senses and even of our feelings, we have a clear knowledge. Among these things is the conviction we have of the existence of our fellow-creatures—the conviction that, furnished with the same senses as ourselves, they receive, through their instrumentality, impressions nearly similar to our own; and that they, like us, feel pain when they cry out, joy when they give every sign of it, &c. Now I maintain that the evidence that animals feel pleasure and pain, and that their conduct is regulated by their recollection of these sensations, is absolutely the same in kind as

that we have in man: in this case our only ground for thinking that other men feel pleasure or pain is that they use the same signs which in ourselves accompany and mark the existence of these affections; and we find the corresponding signs in animals. There is no analogy capable of setting aside this conviction. Would they assert that God has given me the spectacle of an infinite variety of acute feelings—that He has shown me in animals the outward signs of most of the impressions to which I am myself subject—in order to keep me in a constant illusion, and to deceive me with an appearance of intelligence and feeling in beings who have them not? I utterly reject the supposition, and all the *analogies* in the world shall not force it upon me, unless it become an article of faith, in which case *analogy* is superfluous. But till then I have a right to believe that the animals feel, remember, &c., because I see in them the evident tokens of these affections, and because these tokens are the same as those which assure me of the affections of my fellow-men. When I see a man hesitating between two courses, deliberating and choosing, I say that he has compared, that he has formed a judgment, and that this judgment has determined his choice; and, when I see in an animal the external signs of the same hesitation and deliberation, I say again, and I have a right to say, that it has compared,

formed a judgment, and chosen. "But," say they, "if the beasts have this intelligence, and, above all, if it is capable of extension—if, that is, to two or three ideas, with which they have begun, experience may add a fourth or fifth, &c.—we ought to be able to teach them our sciences, our arts, our games; and as we can teach them nothing of all these, it is demonstrated that they have no intelligence." Truly such objections would excite ridicule if the persons who make them did not on other subjects show much good sense, and did not personally merit every consideration. What! we see clearly that experience teaches the animals, that is, that their actions are modified by the different trials they have met with, just as our own would be modified; we see that, relatively to their needs, to their circumstances, to the dangers which threaten them, they act precisely as the most intelligent creatures would act; and we would throw aside this mass of evidence, because we cannot teach them all we might wish them to learn. But why should we wish them to learn what they have no interest in knowing, what is foreign to their needs, and consequently to their nature? Besides, we do not know—perhaps we set about it badly. If we lived sociably with the beaver tribe, and, instead of destroying, had protected their constructions; if, further, we placed before them models suited to their organisation and

their wants, possibly at the end of a thousand years (for the arts are long in reaching perfection) we should have taught them how to decorate the exterior of their huts, and to make the interior more commodious. But, in the absence of any such attempt, we have no right to conclude that, because animals learn all that is necessary to them, therefore they ought to learn what is in no way necessary to them. "But," it is urged, "they certainly execute without reflection the most ingenious of their works. It is without reflection that swallows build their nests, bees their hives, &c. Now if these can be constructed without reflection, it is clear that in other actions it may be equally well dispensed with." Even if the principal proposition were true, *i.e.*, that animals did execute certain movements mechanically and without reflection, it would by no means justify a conclusion against those of their actions in which reflection is clearly manifest. But nothing is more incorrect than the fact advanced. A convincing proof that the works referred to are not carried on without reflection is that experience brings them to much greater perfection, and that riper age corrects the awkwardness of youth. It is impossible that a constant and attentive observer should fail to remark that the nests of young birds are almost invariably ill-made and badly situated; frequently the young hen birds will lay their eggs in the first place they

come to. The defects of the first constructions are remedied in time, when the builders have been instructed by their sense of the inconveniences they have endured. If animals acted without intelligence and without reflection, they would always act in the same way. The machine, once set in motion, would go on functioning in the same manner. Now we see innumerable changes, and always in strict dependence upon the degree of experience which age and circumstances have brought with them; therefore, reflection does preside over the construction of these works. It would be curious if, without memory, these creatures should retain, from one year to another, the recollection of what incommoded them, and, without reflection, should conduct themselves accordingly. "But how can a partridge, which has never seen a nest, foresee that she must soon begin to lay, and that she will want a nest of a peculiar construction to contain her eggs?" I have already said that these mechanical theorists gratuitously suppose that these constructions are carried at once to the highest point of perfection, and that this supposition is notoriously unfounded. But the most ill-constructed nest presents a number of parts, together forming a whole. Now it is a principle generally received that every work, the parts of which are wisely combined towards some end, necessarily proclaims an intelligent workman. It

is even one of the arguments most constantly appealed to in favour of the existence of God. These mechanical theorists allow the skill and wisdom evident in most of the works of animals: from these we may argue that the workmen are intelligent. When we further see that this intelligence, at first simple and clumsy, gradually learns wisdom and finish, corrects its early errors, and takes precautions against the inconveniences which it has felt, we cannot refuse to consider it the peculiar property of the feeble beings whom it animates, and to believe that God is not an immediate agent in them, as some philosophers have supposed. To know how it happens that they are, to all appearance, so early informed up to a certain point, is neither easy nor necessary; but there is no reason why we should not hazard some conjectures on this subject, and even avail ourselves of analogies, if only we do not seek to pass them off as demonstrations.

In the first place, animals in general are not absolutely wanting in experience of the work they have before them. Nothing is simpler, or more roughly put together, than the nest of those kinds of birds which soon quit their birthplace. Those whose nest requires much trouble and skill are long in leaving it, and have every opportunity of becoming acquainted with its shape and construction. Besides, it is certain that in all animals, even in the highest,

there is a kind of hereditary aptness or inclination to certain acts. Even those qualities which are in the strictest sense acquired are not exempt from this law of hereditary transmission. When for many generations the habit of retrieving has been enforced upon dogs, it becomes natural to the race, and will continue to show itself for some time without any particular cultivation. That which appears to us simply mechanical in the actions of animals is perhaps but an ancient habit, handed down from generation to generation. This at least is certain, that the disposition becomes weaker, and in some species dies out almost entirely, from want of exercise. Among domestic poultry, whose eggs are removed as fast as they lay them, some entirely leave off constructing any nests, even with all the materials within reach. Admit this organic disposition, and it seems to me not easy to reject it, and further consider the revolution which the state of gestation must produce in a female; and a little reflection on the influence these two causes may have on her imagination will probably lead us to refer to them the species of foresight and the reflection which necessarily precede the preparations we see her make for her young. If two children—cast upon a desert island, and arrived at the age of puberty—followed their natural instinct, the result would probably be, to the girl, the con-

viction that she would become a mother. Now I have no doubt, though none can call in question the intelligence of these beings, but that leaves and moss, with some exertion of art in their arrangement, would form a kind of bed for the infant entering the world. And to me it seems probable, that were the experiment repeated in several islands, offering the same facilities, there would be little difference in the construction of the different couches.

One of the things which most troubles the partisans of the mechanical aciton in the brute creation is the general uniformity of the constructions of the individuals of each species. They say that were they intelligent, their works would be as varied as ours are. In another place I have said that this uniformity is not so great as at first sight it appears; that we judge wrongly of it, from want of sufficient observation; and that possibly we have not the means of forming a correct judgment of it. Not that the works and the actions of animals do not present far greater uniformity than ours; looking at their organisation and their way of life, it is impossible it should be otherwise.

"All the individuals of a species," says, with great reason, M. l'Abbé de Condillac, "being moved by the same instinct, urged by the same wants, seeking the same ends, and employing the same means, necessarily contract the same habits, do the

same things, and do them in the same way." This eminent philosopher remarks again, with much sagacity and reason, that men are less uniform only because they mimic one another. The artificial passions, which are the fruit of society and of leisure (a form of existence belonging exclusively to the human race), produce an infinite variety in forms, and offer for imitation innumerable models and combinations. For the same reason, animals necessarily go more simply and more surely to their objects than we to ours. They are less subject to error, because their knowledge is confined within narrower limits. "Of all created beings," says the same author, "the one least likely to err is the one least gifted with intelligence."

I have said enough, I think, upon the objections urged against the intelligence of animals. I confess they seem to me extremely weak in themselves, and that when brought into closer connection with facts, I find they will not bear examination. But perhaps together they would acquire by their conjunction a force which, taken separately, they want. We will try this arrangement; for no means should be spared to render the truth more apparent.

Objection 1. That the facts alleged are inconclusive. We see, it is true, in animals a course of action which seems to imply acute and complicated perceptions, and which man could not pursue with-

out many comparisons, appreciations, reasonings; but since they are mere automata, it is evident they may easily perform without reason acts which to man would be impossible without it.

Objection 2. It is only by virtue of a very weak analogy that we are disposed to believe that animals feel, remember, compare, judge, &c., when they regulate their actions by the circumstances in which they are placed in a manner which would defy our skill to imitate if we had not the faculty of memory, the power of comparing, judging, &c. We have no right to argue from ourselves to them, because of the reason above stated. Their actions are the result of a pre-arranged harmony between their movements and the impressions their senses receive from the objects around them—a harmony easy to understand. It is a purely material spectacle, given us for reasons which all will recognise at a glance.

Objection 3. An analogy amounting to a demonstration destructive of the former one may be drawn from the fact that we cannot teach animals either mathematics or any of our games or sciences. For if they could compare, judge, and reason, why should they not be able to appropriate the greater part of our knowledge?

Objection 4. Animals do exhibit, as a fact, in their constructions, in their nests, hives, &c., all the

marks of intelligence and skill; in each case we see the means adapted to the end. But if it were a genuine intelligence which guided them, they would not acquire their knowledge so quickly, and we should know how they serve their apprenticeship. It is then the predetermined harmony which deludes us, and here again we have a demonstrative analogy.

I confess that these arguments do not convince me; and that, spite of myself, facts weigh more with me than all these fine analogies, the merits of which, however, I do not attempt to deny. I am not much better satisfied with the explanation of the operations of animals by means of material sensations, of a material memory, which doubtless make up between them a material intelligence. I do not doubt that those who use this language perfectly understand it; but for myself, I am obliged in conscience to allow that it is utterly beyond my comprehension, and that I would almost as soon accept the predetermined harmony.

I incline to attribute to ignorance of the facts these far-fetched systems to account for the actions of animals. They have been judged without having been sufficiently studied. Sportsmen, who observe because they have every opportunity, have rarely the time or the capacity to draw inferences, and philosophers, who reason without end, have rarely

the opportunity of observing. Besides, many people have thought religion interested in this question of the intelligence of animals, and have allowed themselves to be influenced by a dread of consequences. But the question is purely philosophic, and it is a mistake to mix it up with those truths which religion teaches us, and which are of a totally different order. Suppose that animals have intelligence which can be applied to all their wants; that their intelligence rises in proportion to the degree to which it is called into action by circumstances; and that it has in itself a certain principle of perfectibility relative to those same wants; all this is no argument why our intelligence should not ascend to the sublime truths which are the grounds of our duties and of our hopes. The intelligence of animals will never pass the limits of visible objects, with which alone it is concerned. Ours wings its bold flight towards Him from whom all orders of intelligence proceed, and who has assigned to each the limit it shall never pass.

It follows, then, that religion is not concerned with the various views taken of this subject. It may even be said that the assertions of those who maintain the mechanical theory are less religious than the feeling which recognises the existence of intelligence in all animals. In fact, their arguments amount to this—that God, in exhibiting to us in animals the

appearances of sensibility, of memory, &c., merely gives us a material and illusory spectacle, which keeps us in continual error; and that works, the order and conduct of which show the most visible traces of wisdom, in which everything tends successfully to one end, are yet by no means to be referred to intelligence, and may be the product of a blind material impulse. They say positively that there are material sensations, a material memory, &c. If I do not deceive myself, these ideas may be regarded as no less contrary to religion than to philosophy. But I am far from wishing to fasten a crime upon these gentlemen. With the best intentions and the highest talent, it is so easy to stray out of the right path in the search after truth, that those who err are yet entitled to our gratitude for having attempted the search. Philosophical debates must end if the right of being wrong be taken away. It is one of the privileges of our race least likely to be lost, and should never fail to obtain the indulgence of those who share it. I trust you will not refuse me yours; and without any wish to make an unfair use of the common prerogative, I merit it personally by the feelings with which I have the honour, &c.

LETTER FROM THE NATURALIST OF NUREMBERG,

IN ANSWER TO A REVIEW OF THE PRECEDING LETTERS, CONTAINING THE FOLLOWING ASSERTIONS COUNTER TO THE THEORY OF THE AUTHOR, WHICH APPEARED IN THE "JOURNAL DES SAVANS."

A reassertion of the Automatic Theory—A statement that perfectibility would be to animals a useless gift, and that therefore it has not been given them—That their intelligence is discredited by the fact that they attain at once to all their knowledge—A denial that ideas come through the medium of the senses—An assertion of the universality in man as opposed to the animals of the faculty of abstraction—Queries why animals do not help one another, or attack man, &c., &c.

I HAVE read in the number of the *Journal des Savans* for January, 1765, some remarks upon the letters I had the honour of addressing to you on the subject of animals. Whatever be the value of these observations, I should leave them unanswered were it simply a question of philosophy, which in itself is to me a matter of indifference; but it seems the design of the author to cast a suspicion of materialism upon the ideas which I laid before you, and I do not choose that such a stain should remain upon that which you have thought worthy of publication; nay, I have every reason to fear that the observer has been somewhat misled by his zeal, and that his

own ideas have, though most unconsciously, a greater leaning to materialism than mine; but it is none the less my duty to seek to bring him back to the right path. Charity is a pure source of light, and it is from her, aided by reason, that I will seek light to disperse the clouds which seem to have obscured the sight of the observer.

It is true that I recognise in animals the faculty of sensation, that of memory, and all others consequent upon these two faculties; but far from wishing to make their recognition a loophole by which to introduce materialism, I declare my utter inability to conceive that matter can be capable of sensation in the smallest degree. The faculty of sensation cannot, in my mind, be considered to belong to material substance. I adopt all the reasonable demonstrations which have been made to prove the necessity of a being, one and indivisible, for the reception and comparison of different sensations. If the observer allows the faculty of sensation to animals, and yet looks upon them as purely material beings, it is evidently he, not I, who is the materialist. But I will believe that this is far from being his meaning, and I will scrupulously refrain from imputing to him a tendency he repudiates, even though his principles would lead directly to it. But let us examine a few of his observations in detail, and try to judge them with the impartiality which

should never be wanting in sincere inquirers after truth.

Observer. M. de Buffon has defined with perfect accuracy the kind of memory peculiar to them (to animals); he has established on the most solid grounds that they never reflect upon their acts, &c.

Answer. I do not remember what are the views of M. de Buffon on this subject, nor do I doubt that he has said all he has said well; but that is not now the question. I would ask the Observer what is the species of memory peculiar to animals, and whether he is acquainted with two species? Until now, I confess I had always thought there was but one, and that it simply consisted in the recollection of previous sensations; possibly the Observer knows of another, which consists in forgetting these sensations. As to the faculty of reflecting upon their actions, I know not what other name can be given to an operation very usual with animals, by which they are enabled to resist the present sensation of keen appetite by the remembrance of the trouble which its satisfaction in similar, or nearly similar, circumstances has brought upon them. I know not if the term of reflection may be given to the operation by which they weigh the inconveniences which memory recalls with the stimulus of present desires, and, after visible hesitation, decide in favour of the more weighty of the two motives. I know

not whether to reflection may be ascribed the gradual experience which leads to a line of conduct evidently based upon experience. But it is certain that animals are capable of all this, and if the facts be granted me (and no man well informed of their ways will contest them), I am well content to allow that they do not *reflect* upon their actions, for what matters the name when the fact is certain?

Obs. Why should the Author of Nature have given to the brutes so useless a gift as perfectibility? The conclusion is evident. The faculty of perfectibility is useless to brutes. Therefore they have it not.

Ans. Why should the Author of Nature have given the Hurons or any other people, which has remained for centuries in the same savage state, so useless a gift as perfectibility? The conclusion is evident, &c. Whenever we, with our weak reason, seek to determine the proper course for the Author of Nature to take, we run a great risk of being absurd. We may observe and admire his works, but there is something worse than folly in pretending to judge of his intentions, and dive into his designs. For the rest, neither here, nor in any other part of my work, do I pretend to establish any equality between man and the brute creation. It is not for us to grasp the connection and the relations which God has established between

his various works. "I have observed the intelligence of animals without any reference to the relations it may have with ours. I have sought to read their purposes in their actions, nor have I been unsuccessful; but, in thus studying their intelligence, I have never busied myself in drawing analogies between it and ours. Would man, however, degrade himself by acknowledging faculties which exist in beings inferior to himself, and would the fact of his having something in common with them deprive him of any of the immortal blessings which distinguish him? No, it would be far more degrading to him were he to affect ignorance of the privileges enjoyed by these subordinate beings. If there is one thing more degrading than another, it is the childish fear which would close its eyes to the truth, or make us vainly wish that things were not as they are. When we have recognised every advantage which the animals possess in common with us, man will still keep that rank in God's vast creation which was first assigned him. But to return to our subject. The question of the perfectibility of animals comes to this. May not beings who feel and recollect be constantly the subjects of fresh sensations, added by memory to the knowledge already acquired? If so (and I think it can hardly be denied), here you have perfectible individuals. But if, in addition to this, they have

the power of communicating to one another the knowledge they have acquired, the race, too, is perfectible. Now, I have adduced facts to prove that it is impossible that they should perform that which we see them perform without the power of communicating their ideas, and even without a spoken language. I have also proved that whole species acquire, as a fact, more knowledge and sagacity in some countries than in others, from the force of circumstances rendering them more clear-sighted and circumspect. But if I am asked why animals do not use this their faculty of perfectibility, why they have no interest in acquiring knowledge, why their wants are physical, &c., I reply at once that I know nothing about it, that such knowledge is not within my province. It has pleased the Great Being to organise and give life to numbers of animals, some destined to feed upon the grass of the field, and to need for all their knowledge but a very limited number of facts. He has willed that others should subsist upon a prey ever flying before them, and that, themselves the object of pursuit, they should necessarily pass their lives in a state of alternate attack and defence. He has determined that this necessity should vary to an infinite degree all their proceedings; that the multiplicity of obstacles and of dangers should force them to attention; and that thus, in every species, addi-

tional wants should be the condition of increased intelligence. And you ask me to tell you why these beings do not produce fine pictures and metaphysical dissertations? Apparently, because God willed that they should do what they do; and it is not for us to know more.

Obs. That which, in my opinion, throws more discredit on the intelligence of animals than their want of perfectibility is the certainty and promptitude of this pretended talent, which teaches them in a moment all the knowledge they are ever to possess. They learn too quickly, or rather they know too immediately, without ever having learnt, &c.

Ans. That the beasts acquire in a moment all the knowledge they are ever to possess will be denied by all who will take the pains to observe them. Their early inexperience, their groping, their stumbles, and their progress, are easily appreciable. But, it is objected, they learn more quickly than we do. Is it so very astonishing that God, who, in all his works, adapts the means to the end, should have granted this facility of apprehension to beings whom nature early leaves to themselves, and whose lives are of so short a duration? Doubtless the insect of a day must learn, and does, in fact, learn all that is necessary for its existence far more quickly than those animals whose lives are told by years.

Obs. I have never clearly understood the essential difference between ideas acquired through the medium of one sense or of another. The senses do not give ideas; they only give them a hold on us, and, as it were, a clothing or ornament.

Ans. It seems, nevertheless, by no means difficult to understand that a being, whose only sense was that of smell, would have no notions but of different odours; that another, whose only sense was that of touch, would have no ideas but of the hardness and softness of bodies, of their shape, &c.; and that these ideas would be essentially different. I can perceive no affinity between the idea of a hard body and that of any odour. And, further, these ideas, though received through the medium of the senses, seem to me perfectly simple, and certainly devoid of clothing. It has been said, in earlier times, that five persons, each possessed of but one sense, differing from all the others, would agree in geometry. That may be, and I believe it. But I do not see how they could agree upon any other subject, how one could convey to another the effects of a sensation of which that other could form no idea.

Obs. The most unlettered peasant is, in his way, a sufficiently good metaphysician. The man does not exist who does not form abstractions, generalise his ideas, &c.

Ans. It would seem that Observer regards the

faculty of abstraction as an exclusive appanage of the human mind. With so much sagacity he would, had he taken the time to reflect, have seen that it is but a help granted to the feeble intelligence of imperfect creatures. Animals, like ourselves, are forced to make abstractions. A dog, which has lost his master, runs towards a group of men, by virtue of a general abstract idea, which represents to him the qualities possessed in common with these men by his master. He then experiences in succession several less general, but still abstract, sensations, until he meets the particular sensation which he seeks. The actions of animals which require abstraction are so common that it is needless to fill my paper with them. The slightest exercise of attention will suffice to recall a number of instances. Only to the highest intelligence does it belong to have no abstract ideas, because to it everything, small as well as great, is equally clear, and equally present.

Obs. Cannot monkeys aid one another in much the same way as men? All the individuals of a species can mutually help one another.

Ans. I will not speak of monkeys, because I am ignorant of their ways. I have never seen them living together in society in their natural state, and I have read nothing very instructive about them in the works of travellers. But Observer would very much oblige me if he will tell me in what way

herbivorous animals can be of much service to one another, and in what point the carnivorous animals fail to assist one another when they have any motive for doing so, and the requisite means. The question is not why the brutes do not perform certain actions, but how they perform those of daily recurrence. To explain the commonest phenomena will always drive the partisans of the mechanical theory to despair.

Obs. Why should not eagles hunt men? Could they not, as they hover in the air, drop upon our heads the immense loads which they are able to carry?

Ans. It might be a useful hint to give those birds. I suppose it has never occurred to them, unless, perhaps, to that eagle who broke the bald head of the poet Æschylus with a tortoise. That was the king of eagles! As to the rest, although, as all the world knows, they carry *immense* loads, I suspect they find it more to their interest to go on carrying off lambs and hares, as they have always done. It is in taking the shortest road to an object that the greatest skill and sagacity are shown.

Obs. Can it be seriously advanced that the intelligence of animals does not progress for want of the arts which presuppose that intelligence?

Ans. That would undoubtedly be an absurd statement; but as undoubtedly it has nowhere been

made. It is well known that intelligence presides over the invention of the arts, and that the hands are its ministers. But it is also well known that where there are no means of execution, invention is never found. Had men been without hands, all their intelligence would never have led them to the invention of the arts. But the arts once invented, and executed by the intelligence and by the hand, extend the sphere of intelligence by multiplying the objects of its knowledge. This is not arguing in a circle, a species of argument to be found only in the assertion of Observer, which is far from being mine. For the rest, it is a mistake to suppose that the possession of some of the means to an end necessarily leads to its execution, except in beings devoid of intelligence. How many whole nations often effect nothing, though in possession both of intelligence and of hands!

Obs. It is perfectly false that the arts have raised man above animals, in the sense in which our adversaries would use the proposition against us.

Ans. I appeal here to Observer's sense of justice against himself. I have nowhere said that the superiority of man over the brute creation is exclusively owing to the arts; I am very far from thinking so, and still farther from wishing to draw any argument against ourselves from the degree of intelligence which I clearly see to exist in the animals.

I said, and I think I am correct in saying, that there are men, the actual sum of whose ideas and acquirements is below that of a fox whose stratagems I have observed. But I never wished to infer from this that man had it not in his power to surpass the most sagacious fox.

Obs. A large proportion of the body of the nation is rendered more stupid and foolish by the abstract sciences.

Ans. Observer in this remark improves upon the idea of M. Rousseau, who confines himself to asserting that the abstract sciences increase our wickedness by increasing our knowledge; that they are like arms in the hands of madmen. But if they stupefy us, then they have a moral utility, which M. Rousseau probably never thought of, and which should reconcile him to them,—an instance of the continual improvement of the human race by new discoveries. It must, however, be allowed that if the first assertion was thought paradoxical, the second may, perhaps, be received with doubt; still it would be a singular demonstration, that science makes us stupid.

Obs. Do the greater number of animals exhibit any strong marks of sensibility, that invaluable attribute of intelligence, in their conduct towards their fellows?

Ans. It is to be found in a high degree in all

those species which live together, and which have the means of helping one another. Any one who doubts this has but to make a pig squeak in a wood where there are others of his kind feeding. The powerful and well-armed species defend with fury the individuals of their herd; the feebler species warn each other of danger; those who live in families confine their solicitude to the family, and it is not surprising that they have none to bestow on individuals with whom they are in no kind of relation.

Obs. Organisation, to follow the usual course of nature, should vary in almost imperceptible shades. Therefore, there ought to be animals nearly as perfectly organised as ourselves; perhaps others surpassing us, &c.

Ans. I am content to see what is, and have never troubled myself to think what ought to be. One of the most formidable obstacles to the real progress of knowledge is this insane rage for presuming; and proceeding to decide upon presumption. It is ridiculous that we, with so limited a knowledge, should pretend to determine the laws of nature. Who has told us that organisation ought to vary in almost imperceptible shades? And if it is not the case, why ought it to be? The use of analogy is to help us to form a conjecture where facts are wanting, and all the analogies in the world are not

worth one well-investigated fact. Whether God has or has not chosen to place a greater or less distance between some of his works and others, is not my affair. I confine myself to admiring all that He has done for his own glory, and being grateful to Him for all that He has done for me.

These, sir, are the observations I have thought it my duty to notice among these which my letters have called forth. If Observer thought that they might, in any manner, countenance materialism, I must be grateful to him for having taken the alarm, and thank him for having given me an opportunity of explaining myself, and of destroying any false impression which I may have unintentionally given.

I have the honour, &c.

LETTER VII.

ON THE INSTINCT OF ANIMALS.

Aristotle's definition of instinct—That of M. Descaftes—Instinct, the starting-point of the actions of animals—But intelligence, more or less developed according to their real wants, but uninfluenced by the artificial passions of man—such as society, leisure, *ennui*, avarice, and jealousy—their guiding principle.

NOTHING is more common than for men, and even for philosophers, to use words to which no precise meaning is attached, and which, nevertheless, are employed as though they had a perfectly definite signification. Endless arguments and disputes result from this habit, which might all have been avoided had the disputants begun by defining the meaning of their words. The word instinct seems to me one of those which have been most frequently misused. Every one means to express by it the principle which directs the actions of the brute creation; but every one has his own peculiar view of the nature and extent of this principle. Upon the word all are agreed; but the ideas it suggests differ essentially. Aristotle and the Peripatetics ascribed to animals a sentient soul, but limited it to sensation and memory, to the exclusion of any power of reflecting upon their acts, or comparing them one

with another, &c. Others have gone much further. Lactantius says that, religion excepted, there is no advantage which the brutes do not share with the human species.

On the other hand, every one is acquainted with the celebrated hypothesis of M. Descartes, which neither his own high reputation, nor that of some of his followers, has been sufficient to establish. Animals of the same species present, in their operations, an uniformity which has deceived these philosophers, and suggested to them the idea of automatism—of mechanical action; but this uniformity is but superficial, and constant observation will soon remove all appearance of it. To an attentive sportsman no two foxes resemble one another completely, nor does the gluttony of two wolves take the same form.

Since M. Descartes, many theologians have thought the maintenance of his theory of the mechanical action of animals indispensable to the interests of religion. They have not perceived that the brute creation, though provided with the same faculties as man, might yet remain at an immeasurable distance from him. Thus, man himself is far removed from the angels, though sharing with them a liberty and an immortality which bring him near to the throne of God.

Comparative anatomy shows us in animals organs

answering to our own, and fitted to perform the same functions in the animal economy. In the detail of their actions we are convincingly shown that they have the faculty of sensation; that is, that they experience the same sensations that we experience when our organs are acted upon by outward objects. To doubt whether animals have this faculty is to doubt whether our fellow-men are provided with it, since the evidence in both cases is the same.

The man who refuses to recognise the cry of pain, and to acknowledge the evident signs of joy, of impatience, of desire, does not deserve refutation. Not only is it certain that animals feel, it is equally certain that they remember. Without memory, all our corrections would fail to make our dogs obedient, and all education of animals must be given up. The exertion of memory enables them to compare a past with a present sensation. Any comparison of two objects necessarily produces a judgment. They have, then, the faculty of judgment. The pain of the whip, recalled by memory, balances in the greyhound the pleasure of pursuing a hare which starts from her form, and the judgment which determines his conduct is formed from the comparison he makes of these two sensations. Often he is carried away by his keen appreciation of the pleasure, but the recurrence of chastisement adding

strength to his remembrance of the pain, the pleasure loses by the comparison; then he reflects upon what has passed, and reflection establishes in his memory a connection between a hare and the whip.

This connection gradually becomes so strong, that the sight of a hare makes him put his tail between his legs and hasten to his master. The habit of forming the same judgments makes the process so rapid, and gives the judgments themselves so spontaneous an air, that the reflection which has reduced them to a principle is overlooked. It is experience, seconded by reflection, which gives the weasel its accuracy of judgment of the relative proportion between the size of its body, and of the opening through which it would pass. This idea, once established, becomes habitual, by the repetition of the acts of which it is the cause, and saves the animal all useless efforts. But the simple ideas of relation are not the only ones which animals owe to reflection; it is the source of much more complicated ideas, the indications derived from which prevent their falling into a thousand errors fatal to their safety. An old wolf is attracted by the smell of a bait; but when he draws near it his nose informs him that a man has been in the neighbourhood. The idea of a man's path suggests to him danger and snares. He hesitates therefore; he haunts the spot for two or three nights; appetite brings him back to the vicinity

of the bait from which the dread of the peril indicated would keep him. If the sportsman has not used every precaution to conceal from the wolf every trace of a snare; if the slightest smell of iron is perceived by him, nothing will ever reassure this animal, made suspicious by experience.

These ideas, the fruit of combined sensation and reflection, represented in their order by the imagination and the memory, form the animal's system of knowledge, and his series of habits; but it is attention which engraves upon his memory all the facts which concur to make him sagacious, and attention is produced by the keenness of want. It should follow, therefore, that those animals whose wants are the most pressing have the most acquired knowledge. And, in fact, the first glance shows us that the vivacity of its wants is the measure of the intelligence with which each species is gifted, and that the circumstances which render these wants more or less pressing to the individual, extend or contract the circle of his knowledge.

Nature has furnished the herbivorous species with a food which they easily procure, without the exercise of either skill or reflection; they know where to find the grass they feed on, and under what oak to look for acorns.

In this respect, their knowledge is limited to a single fact, and their conduct, so far, seems unin-

telligent, and but little removed from that of an automaton. But it is not so with the carnivorous animals: forced to pursue a prey which avoids them, their faculties, sharpened by necessity, are in constant exercise; all the means by which their prey has often escaped them are continually recalled by memory. From the reflection they are forced to make upon these facts, arise their ideas of stratagems and precautions, which, again, take deep root in the memory, become established principles of action, and by repetition habitual. The variety and ingenuity of these ideas frequently astonish those to whom such objects are most familiar. A wolf in search of prey knows by experience that the wind brings to his scent the emanations from the bodies of the animals he seeks, therefore he keeps his nose to the wind; he learns, too, to distinguish, by the same organ, whether the animal is near or distant, whether in motion or at rest. Upon this information he regulates his pace; approaching stealthily to surprise, or putting forth all his speed to overtake it. In his path he meets with field-mice, frogs, and other small animals, which have many times served him for food; but though pressed by hunger, he will pass them now without a glance, knowing that a more ample and luxurious repast awaits him on the flesh of a stag or fallow-deer. On ordinary occasions this wolf will exhaust all the resources which the

vigour and ingenuity of a single animal would lead the huntsman to expect; but when love brings a male and female into society, they have respectively, in all concerning the object of their chase, ideas resulting from the facility which their union gives them. These wolves know, by repeated trials, where the wild animals are generally to be found, and the route which they pursue when disturbed. They know, too, the full value of a relay to hasten the destruction of an animal already overpressed. From these known facts, from the ordinary course of things, they argue to the probable course of things, and take their parts accordingly. The male goes in pursuit, and the female, as the weaker, awaits at some passage the panting deer, whom it is her part to start afresh. All these proceedings are easy to ascertain, when traced upon the soft earth or the snow; and in them the history of the animal's thoughts is to be found.

The fox, far weaker than the wolf, has need of many more resources to obtain his food. He has so many expedients in his power, so many dangers to avoid, that his memory is necessarily loaded with a number of facts which extend the range of his instinct. He cannot pull down one of the larger animals, which would suffice him for food for many days, neither does his swiftness supply his want of strength; his natural resources are, then, craft,

patience, and address. To him, as to the wolf, his scent serves as a compass. The faithful report of this well-exercised sense informs him of the approach of the object of his desire, and of the presence of the object of his fear. Ill calculated for an open warfare, he softly draws near the partridge he has scented, or the place by which he knows a hare or a rabbit must pass. The soft earth hardly shows the print of his steps. Divided between the fear of a surprise and the necessity of himself surprising, his step, always cautious, and often wholly suspended, betrays his uneasiness, his wishes, and his resources. In countries where game abounds, and the woods and plains provide him with abundant subsistence, he flies from human habitations. Only when urged by hunger does he approach the abodes of man; but in that case the knowledge of the danger makes him double his usual precautions. Under cover of darkness he glides along the hedges and bushes. If he knows that fowls are good, he does not, therefore, forget that traps and dogs are dangerous, and these different recollections guide his steps, accelerate or retard them, according to the degree of vivacity with which the one or the other is recalled to him by circumstances. In the first hours of night, when the continuance of darkness is in itself a fertile source of hope to the fox, the distant yelping of a dog will check him in the midst of his career.

All the dangers which he has on various occasions passed through, rise before him; but at dawn this extreme timidity is overborne by the calls of appetite; the animal then becomes bold by necessity. He even runs to meet danger, knowing that it will be doubled on the return of light.

We see that the commonest actions of animals—their daily proceedings—suppose memory, reflection upon the past, comparison between a present object which excites their desire, and the indications of danger which repel them, a power of distinguishing between circumstances which are alike in some points, while differing in others; finally, a power of appreciating these relations, and deciding among them. What, then, is instinct? Such various effects produced upon animals from the pursuit of pleasure and the fear of pain, consequences and inductions drawn by them from facts which have gained a place in their memory, actions resulting therefrom; this system of knowledge, continually increased by experience, and day by day rendered more habitual by reflection—all these phenomena cannot be referred to instinct, unless we use the word instinct as a synonym for intelligence.

We have already said that it is the keen sense of want which engraves on the memory of animals powerful and absorbing sensations, the succession of which forms the whole of their knowledge. It is

for this reason that the carnivorous are so much more skilful than the herbivorous animals in procuring their food; but where these same herbivorous animals are much hunted, you will see them acquire, relatively to their safety, a knowledge of facts, and a habit of repeated induction, which show them on a level with the carnivorous tribe. Of all the herbivorous animals, the hare is perhaps the one which seems least intelligent. Its senses, both of sight and smell, are obtuse; and but for its excellent ear, it would seem devoid of any of the means of skill. Besides this, flight is its only means of defence; but it exhausts every form and variety of flight. I am not speaking of the hare chased by greyhounds, whose superior swiftness gives them a decided advantage, but of the hare when hunted with harriers. In the latter case, an old hare begins by regulating her pace by the pursuit. She knows, by experience, that a rapid flight would not deliver her from it, that the course may be long, and that a careful use of her strength will enable her to hold out a longer time. She has remarked that the dogs follow more eagerly and with fewer checks when her course is through thickets, where the contact of her body leaves a more vivid scent, than on the plain, where her feet but just light; and she leaves the woods, and takes in general to the roads (this same hare, if followed by sight by a greyhound, escapes

by taking to the woods); she is quite aware that she is pursued by dogs which do not follow by sight; she clearly understands that the pursuit keeps close to the track she leaves. What does she do? After a long run in a straight line, she retraces her steps exactly; after this artifice, she bounds on one side, makes several consecutive leaps, and so, for a time at least, conceals from the dogs the trace of the road she has taken. Frequently she will rouse another hare, and crouch in her form. Thus by a thousand means, which would take us too long to enumerate, she throws out the whole hunt. These means are common to her with other animals, which, excelling her in some respects, in this case boast of no superior experience. The young hares are far less fertile in resources. It is to the knowledge of facts that the old ones owe the true and prompt inductions which are their guides in these various actions.

Artifice, invention, skill, being the consequence of facts engraven upon the memory, those animals which are either powerful, or well provided with the means of defence, must be less intelligent than others. Thus we see that the wolf, the most robust of the animals inhabiting our climates, shews the least invention when pursued. His nose, which is his constant guide, only makes him watchful against ambuscades. Besides, his object is to get away and escape from peril by the sole advantages of strength

and wind. His flight is not complicated, like that of the timid creatures. He never resorts to those feints and doublings, which are the necessary resources of weakness and fatigue.

Neither has the wild boar, well defended by his tusks, any recourse to skill. If wounded in his flight, he turns at bay. He becomes furious, and makes himself feared both by sportsmen and dogs, whom he threatens and charges in his rage. To ensure a more easy defence, and a more certain revenge, he seeks bushes and thickets, and so places himself as to have his assailants in front. Then, with savage eye and erect bristles, he overawes both men and dogs, wounds them, and forces a way through the midst of them to some new fastness.

The pressure of want, as we see, enlarges or contracts the circle of knowledge open to the acquisition of animals. Their acquirements increase with the obstacles they have to surmount. This faculty, which makes them capable of improvement, is sufficient to refute any notion of a blind instinct, which can arise only from ignorance of facts. A sportsman, well provided with snares, arriving in a country where they have never been used before, will find the animals most easy to entrap, and the foxes, even, will seem simple to him; but when they are taught by experience, the want of know-

ledge will make him feel increased need of new inventions. He will be obliged to multiply his resources, and to deceive them by presenting his baits to them under a thousand different forms.

Among the various ideas which necessity adds to the experience of animals, that of number must not be overlooked. They count, that is certain; and though, up to the present time, their arithmetic appears weak, perhaps it may be possible to strengthen it. In those countries in which game is much preserved, crows are made war upon, because they take away the eggs, and destroy the hopes of the laying season. The nests of these destructive birds are carefully noticed, and to destroy the voracious family at a blow, they seek to kill the mother while sitting. Among the parent birds, some are very suspicious, and desert their nests as soon as any one approaches them. To lull suspicion, a carefully-covered watch-house is made at the foot of the tree in which there is a nest, and a man conceals himself in it to await the return of the parent bird; but he waits in vain if she has ever before been shot at in the same manner. She knows that fire will issue from the cave into which she saw a man enter. While maternal love keeps her eye fixed upon her nest, fear prevents her return till night hides her from the sportsman's sight. To deceive this suspicious bird, the plan was hit upon of sending two

men to the watch-house, one of whom passed on, while the other remained; but the crow counted, and kept her distance. The next day three went, and again she perceived that only two retired. In fine, it was found necessary to send five or six men to the watch-house to put her out in her calculation. The crow, thinking that this number of men had but passed by, lost no time in returning. This phenomenon, always repeated when the attempt is made, is to be recorded among the very commonest instances of the sagacity of animals.

Since animals retain the recollection of facts which they have found it to their interest to notice, —since reflection reduces the inferences they draw from them to principles,—they are perfectible; but to what degree we cannot know. The very nature of the perfection of which they are capable is almost unknown to us. Never, with such a sense of smell as ours, can we attain to the variety of relations and ideas which the fine and well-exercised nose of the wolf or dog furnishes them with. They owe to its delicacy the knowledge of some of the properties of many bodies, and of the ideas of relation between these properties and the actual state of the body to which they belong. These ideas and relations are hidden from our ruder organs. Why, then, do not animals perfect themselves? Why can we find no sensible progress in the different species? If

God has not given to them celestial intelligence to sound the depths of man's nature,—if they cannot at one glance comprehend that strange compound of ignorance and talent, of pride and meanness,—they, in their turn, may say: Why, then, is this human species, with so many means of perfectibility, so little advanced in the most essential parts of knowledge? Why is more than half the race enslaved by absurd superstitions? Why are the most needful sciences, those upon which hangs the happiness of the entire species, yet in their infancy? &c.

It is certain that animals may make progress: a thousand peculiar obstacles hinder that progress, and besides, there is apparently a limit which they will never pass.

The traces of sensations, and of the judgments which are the consequence of them, are only preserved by memory when the sensations have been sufficiently powerful to arouse a lively attention. Now animals, clothed by nature, are only excited to attention by the wants of appetite and of love. They are without those conventional wants which are the fruit of leisure and of *ennui*. The need of excitement presses upon us in the ordinary waking state, and produces that uneasy curiosity which is the parent of knowledge. Animals are without this want. If some species, the pole-cat for instance, whose characteristics are suppleness and activity,

are more subject to *ennui* than others, it cannot be for them a frequent sensation, since the necessity of finding food keeps their restlessness almost always in exercise. When the chase is successful, and their hunger soon satisfied, they abandon themselves, from the want of excitement, to a useless and profuse slaughter; but the ordinary state of these sentient beings is one of half-sleep, during which the spontaneous exercise of the fancy presents to them but vague pictures, which leave no deep traces in the memory.

Among ourselves, do not those men who are absorbed the whole day in providing for their simplest wants remain in a state of stupidity little differing from that of the brute creation?

Unless leisure, society, and language wait upon perfectibility, it will remain unfruitful. Now, in the first place, as I have already said, animals have not leisure. Always occupied in providing for their necessities, and in defending themselves against other animals or against man, the only acquired ideas which they retain relate to these objects. In the second place, the greater number live isolated, and enjoy a temporary society only, based upon love and the rearing of the family. Those whose society is more durable are drawn together purely by the feeling of fear. Only the timid species live in this state; and fear, which induces individuals to herd

together, appears the only sentiment which occupies them. Of this class is the kind of deer of which the hinds only leave the herd to bring forth their young, and the stags to shed their horns.

In the better-armed and more courageous species, such as the wild boar, the females, as the weaker, with the young males, alone form the herds. But as soon as the latter have reached the age of three years, and, their tusks being grown, feel themselves sufficient for their own defence, they quit the herd; security leads them to isolation; there is therefore no society, properly speaking, among animals.

The sentiment of fear and the interests of mutual defence cannot extend their knowledge very far.

Their organisation is not such as to allow of their increasing their resources, or adding any arms to those ever-ready ones with which nature has furnished them.

With regard to language, that of animals appears to be very limited. This is natural, when we consider their way of life, since there are savage nations who have bows and arrows, and whose language nevertheless does not contain three hundred words. But however limited be the language of animals, it exists; it may even be asserted, that it is much fuller than we should naturally be inclined to suppose in beings who have a snout or a beak.

Those of their habits which seem the most natural

cannot, we have already shown, have been formed but by the aid of inductions generalised by reflection, and evidencing all the workings of intelligence; but we perceive no distinct articulation in their cries. From this apparent uniformity, we conclude that they do not articulate at all. Yet it is certain that the animals of each species distinguish perfectly between these sounds, to us so confused. It never happens that they fall into error, or mistake the cry of fear for that of love, and *vice versâ*. Nor is it necessary that they should express situations so strongly marked only; they must also convey the shades of each feeling. The cry of a mother who announces to her brood that they must conceal themselves, disappear from the sight of the enemy, cannot be identical with that which tells them to hasten their flight. Circumstances make a different line of conduct necessary. This difference must be conveyed by the language which directs the action. By what mechanism could those animals which hunt in company make agreements to wait for one another, to rejoin, and to aid one another? These operations could not be accomplished without the aid of conventions, the particulars of which could not be expressed without the medium of articulate language. For want of constant observation, and of reflection, apparent monotony deceives us. When we listen to men speaking a language

we do not understand, we are not struck with any perceptibly-marked articulation; we fancy we hear only the continual repetition of the same sounds. The language of animals, however varied it may possibly be, being infinitely less familiar to us, must appear a thousand times more monotonous; but whatever it be, it cannot materially serve the perfectibility which they possess. Tradition is of very little value in the advancement of knowledge. Without writing, which is the exclusive property of man, each individual, limited to his own experience, must begin for himself the career which his predecessor had run; and the history of the knowledge of one man would be the history nearly of the whole knowledge possessed by humanity.

We may assume, then, that animals will never make any considerable progress, though, relatively to certain arts, they may have already made great advances, without our having been able to perceive them. In general, the obstacles to the progress of the species are extremely difficult to conquer, and besides these, individual animals cannot draw from the strength of a dominant passion that untiring energy by which man, by virtue of his humanity, raises himself above the level of his fellows. Still animals have passions, some natural, and others which may be termed artificial, or springing from reflection: of the first are the impressions of hunger,

the ardent desires of love, maternal tenderness; of the second are the dread of famine or avarice, and jealousy, which leads to revenge.

But we have shown in the former letters that these passions present neither continuity nor the character of those which really assist in the development of the species. They attain their object by means both extremely simple and always necessarily uniform. From the fact that animals do not push their inventions beyond their requirements, we should err in arguing that they do not invent at all, nor would the premises warrant such a conclusion. I will now bring my reflections on that which is called the instinct of animals to a close. It seems to me impossible to deny that the guiding principle of their actions is an intelligent one, the product of sensations and memory. But though this advantage is common to them with us, it is easy to see how far removed they yet are from us. This will be immediately perceived in reading the reflections upon man considered from a moral point of view, which follow this letter, and which have seemed to me indispensable to guard against the consequences which some might suppose inevitably to follow from the intelligence of animals.

I have the honour, &c.

TWO LETTERS ON MAN,

By the Naturalist of Nuremberg.

LETTER I.

On the general principles of human nature—Influences of society—Distinction between the wants of nature and those superadded by social life—Sensation the basis of our ideas—Impressions objective and subjective—Desire the result of sensation—Objects of desire various—Wants which lead men to form societies—Food—Clothing—Shelter—Love—Love of sensation itself, and its opposite, the love of ease—All these have a repelling as well as an attractive influence between man and man—Sympathy or compassion the basis of all the disinterested virtues.

HAVING examined the actions of animals; having seen how in the different species intelligence receives excitement, extension, and finally limit, from the sensations, the memory, and the peculiar wants of each; it may be useful to turn our attention to ourselves. By the consideration of one side only of the nature of man, we shall easily avenge the indignity he has suffered at the hands of those who would degrade the other animals to heighten his position by contrast. We shall see the distinguished rank the Author of Nature has assigned him. His real advantages are sufficiently brilliant to establish his superiority, without having recourse to any means rejected alike by experience and by feeling. The real detractors of human kind are those who think man's dignity requires the denial of the intelligence

of animals, as if that dignity were not independent and personal, as if the position which the other animals have received from the Creator had anything to do with the immortal gifts which He has showered upon us. I do not, sir, pretend to treat this immense subject in its full extent. Far from it; such a labour would be beyond my strength, and would, besides, demand volumes. I only wish to point out the general principles of human actions, and to trace them in some of the modifications, and, here and there, distortions with which society has overlaid them. The difficulty of this examination is, that at the first glance we can discover in the species no distinctive character applicable to all individuals. There is so great a difference in their actions, that we are tempted to fancy it extends also to their motives. Between the slave who pays his contemptible adulation to his master, and Timour, who put to death thousands of his species that none might be greater than he, we have varieties beyond number. We cannot but be struck with admiration when we contemplate the vast works of man, when we examine his acts and the development of his knowledge, when we see him pass the limits of the seas, measure the heavens, and rival the thunder both in its sounds and in its effects. But yet how can we withhold our astonishment at the ignorance and stupidity of the great mass of the

species? How refrain from shuddering at the baseness or the atrocity of the crimes by which this king of nature degrades himself? Alarmed at this heterogeneous mass of knowledge and barbarity, some moralists have resorted, for its explanation, to a mixture of good and bad principles, in its turn much needing elucidation. Pride, superstition, and fear have enveloped man's knowledge in a cloud of prejudices which observation should dissipate. Religion is commissioned to bring us into the way of that happiness which she reserves for us in eternity. The philosopher ought to study the natural motives of man's actions, in order to discover the corresponding means of rendering him better and happier during this transient life. We must confess that, contemplating man in the present state of society, we are at first tempted to regard him as unnatural. So many ideas foreign to his primitive constitution, so many artificial passions now form part of his actual composition, that to many philosophers it has appeared necessary, in order to know him, to go back to a more ancient period, in which greater simplicity and fewer complications are manifested. But this expedient is no guarantee against error. They begin by imagining the state which they would examine, and the reflections of the observer can therefore be exercised only upon the creation of his fancy, which may differ essentially from that of

nature. It is not then in an unknown past that we must study man; but looking at him as he actually presents himself to our notice, it is easy to draw a line between the wants which nature gives him and those which his state of society first aroused, and then converted into habits. We may then attain a knowledge of the component elements of man, and of their combinations.

All philosophers and most theologians also of the present day allow that our sensations furnish the raw material of our ideas; and this truth, long since known in a general vague manner, could not, with all its details, escape the sagacity of our observers. Those who have studied the human understanding have well pointed out the order of succession of the effects of this general faculty, to which we are indebted for all our knowledge. But sensation alone does not constitute understanding. In a sensation there are almost invariably two impressions to be considered: the perception of the object which causes it, and the modification which our mind receives from it; in other words, the pleasure or pain which it gives us. It is principally from the subjective part of our sensations that we derive our knowledge. From the kind of the affection which it produces in us arises pleasure or pain; that is, a sentiment which makes our existence precious or hateful to us. The first of these two

impressions enables us to compare, to judge, &c.; the second arouses our desires, our will. This last is the imperious lord who governs us; desire is the spring of all our actions; to know ourselves we must study its workings within us. The faculty of sensation, which belongs to the soul, having its only exercise through the medium of the physical organs which together constitute the body, may admit of a natural difference between men. If the tissue of fibres is not the same in all, some will have certain organs more sensitive than others, and will in consequence receive from the objects which agitate them an impression of a degree of strength unknown to others. In such a case our judgments and choice, being but the result of a comparison of the various impressions which we receive, will be as different in each individual as those impressions themselves. Thence we might infer that the knowledge of man is unattainable, that each individual has a standard which cannot be applied to the whole race, that the judgments we form of the conduct of others is always unjust, and the advice we give them yet more worthless. My reason must differ from that of a man who does not share my sensations; and if I take him for a fool, he has every right to consider me an idiot. But all our individual sensations, all the judgments which result from them, end in a disposition common and necessary to all sentient beings—

the love of ease. This desire, never in abeyance, is directed by our wants to certain objects. If it meets with obstacles, it becomes yet more ardent, it is irritated; and irritated desire is that to which we give the name of passion, or a state of suffering in which the whole soul is bent upon one object as the fixed point of its happiness. To know what man is capable of you must see him in this state. If you contemplate a wolf when gorged, you will see no signs of his voracity. The movements of passion are always sincere and unmistakable. Now, in contemplating a man moved by some passion, I behold him wholly absorbed in an object the enjoyment of which he promises himself. Whether the desire he has for it be natural or artificial, he throws aside all that lies between him and it; for him danger no longer exists, and even self is forgotten. The desire which agitates him blinds him to everything but its satisfaction. This state of mind, most striking when extreme, is constantly to be found, though less manifest in less violent situations. Man has then no peculiar mark which distinguishes him. He is the creature of his wants, and as these, more especially in the social state, are infinitely various in each individual, and in the same individual at different times, we must expect to find in him numberless anomalies, all produced by the universal desire of well-being. "Men is a being of wonderful

diversity and oscillation," said that great painter of human nature, Montaigne. In fact, he would seem less the product of his natural inclinations than of the circumstances which surround him. If not by nature cruel, passion, meeting with obstacles, will in an instant excite him to shed the blood of his fellow-creatures, and habit and prejudice may in the end make this cruelty necessary to him. "The bad man," said Hobbes, "is but a robust child; and if we regard man as being, like a child, full of strong desires, and destitute of experience, we really cannot see what should check him in the pursuit of his object." It is experience which shows us that by uniting with others we may facilitate the satisfaction of our wants.

Thus each man's interest establishes in his mind an idea of proportion between the pleasure he seeks, and the injury he would do himself if he threw away the affection of others. From this idea arise considerations which naturally are of weight only while the interests are superficial, but which gain strength from habit, and from the sense of compassion, of which we will speak hereafter. But our passions take us back to childhood, by setting before us a single object invested with such a degree of interest as eclipses everything else. This word *passion* arouses a vast number of different ideas, when we consider man socially. The social state,

and the different forms which it assumes, produce, between man and man, an infinite network of relations and of states of existence, in which his natural passions are found divested of every trace of their original characters. It is therefore needful to draw a line of demarcation between those wants which nature imposes upon the individual man, and those which may be called factitious, which arise in the social state. Though the latter are derived from the former, in their final development they differ so essentially from their origin, that a very close observation is required to detect it.

Into the constitution of man there enter a larger number of natural wants than into that of any of the other animals. Even if his intelligence were not essentially superior to theirs, he would necessarily, from his more numerous wants and resources, acquire a marked pre-eminence over all the other species. The mere want of food, which may become one of the most pressing, need not in itself lead him to any great amount of industry. Enabled by his taste, and by his constitution, to accommodate himself to different kinds of food, he is less exposed to want than any other animal. Hunting, fishing, milk, and the fruits of the earth, equally minister to his appetite. The difficulty is, not to satisfy the hungry man, but to please the discontented man; and it is probable that the earth

would easily yield to the natural man enough of the coarser aliments to maintain his vigour. But the facility which association gives in hunting or fishing soon establishes a kind of society between men who support themselves in either of these ways; and the multiplication of the tribe soon leads to the cultivation of the soil. This lays the foundation of a number of relations and institutions foreign to our subject. Nevertheless, it is certain that if man wanted food alone, society would be less indispensable to him—more difficult to establish; and that we might not have so much to admire in the improvements in his industry, to which other wants have led him.

In most climates man is compelled to clothe himself, under pain of suffering, and even of death. This want must, then, take its place as one of the first necessity, and it is, perhaps, the source of more reflection and inventions than that of food. Not that man cannot at first make a rough covering for himself of the skins of the beasts which he has killed, without giving them any preparation; but he cannot make use of it for a long time without being obliged, by its disadvantages, to reflect on some means of rendering this simple clothing more convenient. From these reflections will arise the art of preparing these skins, so as to render them more pliant and durable; then that of sewing

them together so as to form a more complete or more convenient covering. The most stupid nations, as the Samoiedes and Greenlanders, are not ignorant of these two arts, the natural consequences of the necessity of clothing. If they do not, like us, know how to make thread of the stems of hemp and flax, they use with great success the sinews of the animals they have killed, and they give their skins that pliability, without which they would not so completely answer their purpose. Here we have several arts due to a want of the first importance, and without their invention, man, whose constitution is but little calculated to resist the inclemency of the weather, would infallibly perish. But, whenever they are required, these arts are found out. Want, the common master of sentient beings, gives lessons of a high order to those who in other respects are the most stupid and obtuse. But, however well clothed man may be, a habitation is no less indispensable to him than a garment, to guard him from the rigour of the climate. If he, at first, shelters himself in the trunk of a tree, hollowed out either by nature or by his own industry, this contracted abode soon appears to him what, in fact, it is, insufficient. Want will lead him to collect the leaves and boughs of trees, to fasten them together, to fill up the crevices with earth, to cover them with dry grass or turf to keep out the rain; in

one word, to make himself a hut. And this operation is carried on almost in the same manner by the most savage nations in severe climates. It is an art of the first necessity, to which man is led by his constitution, pain and death being the alternative.

Love, too, is one of man's most urgent wants. It makes itself felt with overpowering force when his other wants are satisfied. This terrible passion, the torment and the means of propagation of all living beings, has no peculiar season for man. Nearly always in action during the period of his vigour, even where moral ideas, whether real or illusory, have added nothing to its natural intensity, enjoyment deadens desire for the moment, but without destroying it. Hope of the future mingles with the present sense of enjoyment, and gives to this passion a character of permanence which cannot fail to establish a lasting connection between the male and the female. It seems to me that the first desires of a grown-up man must attach him to some woman, and that this tie will be drawn more closely by recollection and hope. Habit, which produces inconstancy and disgust in civilised man, whose constitution is deteriorated, exercises a totally different influence upon man in a natural state. The community of wives has been, in some societies, the effect of a peculiar institution, but it has never been the institution of nature, who points, by every kind

of means, to the strengthening of the marriage-union. Besides the mutual advantages and help which spring from association, a new force is soon given to it by the birth of children, whose wants demand a degree of care from both parents which multiplies their previous relations with one another. In simply looking at these interesting objects of their natural tenderness it is impossible for the parents not to find new motives for loving one another. Even the care which they unite in bestowing upon these tender creatures, by arousing the idea of a common possession, excites in them a deep feeling which tends to unite them. It is not my intention to examine how, as the family increases, society enlarges its bounds, different interests arise, laws are established. It is enough for our purpose to have observed that everything tends to make association necessary to man; that without it the race could hardly exist; and that sociability rests upon the basis of man's constitution, and the most urgent needs which flow from it. But those that we have just pointed out are not the only ones he derives from nature. There are other tendencies which make society at least very interesting to him, and which, perhaps, more than those already specified, influence his efforts, his progress, and his crimes. Man does not only require to be fed, clothed, shielded from the severity of the air, even with the addition,

during a part of his life, of the lively emotions of love. These united objects might suffice for solitary man, because the necessity of providing for them would occupy all his time, scarcely leaving him enough for sleep. This is practically the case with those unhappy beings who are forced by poverty to support themselves by unceasing labour. But over-work, anxiety, and fear leave them but a painful sense of their existence; they do not enjoy, they suffer it, and know the painful side of life only. When man has it in his power to satisfy all the wants we have enumerated; when the benefits of nature absolve him, in this respect, from immediate care for the future; when, in fact, he seems to have nothing to do but to enjoy a happy leisure, a new want torments him, that of a strong sense of his own existence. We are only consciously existing when acted upon by immediate sensations or ideas. We must be interested in these to be happy; and, unfortunately, the sensations which most interest us are weakened by time. That which we have contemplated for a long time becomes to us like a retreating object, which ceases to present to us anything but a confused outline. This want of conscious life, joined to the constant weakening of all our sensations, gives us a mechanical uneasiness, and vague longings, excited by the importunate recollection of a former state. We are, then,

obliged, in order to ensure happiness, either to change our object incessantly, or to carry to excess sensations of the same kind. Thence springs a love of change, which never suffers our wishes to fix themselves for more than a moment on any object, and a progression of desires, which, destroyed by their fulfilment, but ever kindled afresh by remembrance, know no limit. This tendency, which makes the uneasiness of *ennui* follow rapidly upon our most absorbing emotions, is the bane of the man of leisure and civilisation, as we shall see in examining its effects upon society. But we shall also see that this torment is the source of a part of his efforts and of his improvements. The want of a lively sense of his existence is balanced in man by another disposition, common to him with all sentient creatures—indolence, or the love of ease. This force of inertia only acts very powerfully upon the unemployed class of society. In all other classes it is kept under by more stimulating wants. But it is difficult, at first sight, to believe that it is itself the greatest incitement to activity among men. That rest in perspective, which was to be the reward of Pyrrhus, still urges to exertion every ambitious man who would raise himself, every miser who heaps up wealth beyond his needs, every man who, his passion being glory, fears rivals. The love of ease, and the desire of an acute sense of our existence, are

two contradictory wants which influence and modify one another. Man dreads exertion; every kind of effort is repugnant and wearisome to him, unless when he is agitated by some passion. Thought is especially insupportable to those who are unaccustomed to it. But *ennui* soon becomes as troublesome as labour itself. The unoccupied man seems to lose a part of his existence. He moves mechanically from place to place; he is forced to seek external objects, the action of which, causing him some excitement, awakens in him the sense of life. Having no special sphere of activity, he must be passive. He requires uncommon sights, whose novelty shall give a shock to his benumbed organs. This discomfort is less frequent in man in a savage state, both because he has less leisure, and because, the satisfaction of his rudest wants excepted, he has no idea of an active existence. His usual state is therefore one of torpor. The murmuring of a stream is enough to occupy his mind when he is not in action, and his ignorance of stronger emotion allows him the peaceful enjoyment of this state, but little removed from sleep. But if the savage has once had a taste of the strong sense of existence, as aroused by the use of spirits, for instance, he becomes most anxious for it, and will sacrifice all to this new want.

Here are, as it appears to me, the principa

elements of the natural constitution of man. These form the stock which individuals bring into society, and which society utilises, by means of the various circumstances which it originates and the different relations which it establishes. We see that association is necessary for the preservation of man, or at least for his happiness. Yet it is certain that the same wants which induce him to draw near to his fellows, produce in the end conflicting interests which tend to isolate him. Hunger cannot always bear to share its portion; love excites jealousy; and in all, the interests of property tend to encourage an exclusive personality. We have, therefore, the spectacle of man seeking to facilitate his enjoyments by association, and then isolated by those very enjoyments. But there is an affinity which makes men dear to one another, and which is constantly at work, when unimpaired by a more powerful personal interest, or by habits which distort and even wholly destroy it. Man is not indifferent to man. He who suffers is sure of the compassion of those who have no interest in seeing him suffer, and whose sensibility is not yet blunted. This is proved by the general impression which the misfortunes of others make upon all disinterested spectators, and of which each man may find the trace in his own heart, if he will but examine it, however slightly. Many moralists have considered this sentiment as simply

the effect of a reflected selfishness, and have maintained that compassion is not a direct impression, but a sentiment evolved by reflection, and based upon personal interest. It is quite true that, to compassionate, we must have in ourselves the idea of pain; for how can we share a feeling that we are totally ignorant of? But none are deficient in this sad experience; and though it is a necessary preliminary to the sentiment of pity, this sentiment is not the less directly called into play by the suffering of others. The presence of a suffering human being causes us real pain, and from it proceeds a physical uneasiness very disagreeable, which makes it our first impulse to aid the unfortunate. This precious and holy impulse is strengthened in us by exercise and habit. It becomes the basis of all the virtues termed generous, because they bring no other recompense than the pure pleasure of making others happy. We will endeavour, in the following letter, to discover what is the ultimate end of all these natural dispositions of men, and how these different germs spring up in society, and reciprocally modify one another, to make man such as we see him.

I have the honour, &c.

LETTER II.

Difficulty of distinguishing between the nature of man as an individual, and man considered in society—Society develops antagonism as a consequence of resemblance between its members—Passion seldom disinterested—Apparent paradoxes—Love of ease leading to exertion—Love of power to servility—Influence of forms of government—Governments liable to change from man's inherent love of excitement and from change of circumstances—The working classes, whether with hand or brain, the happiest and most social—Possibility of inspiring children with the social sentiment—By example—Not private only, but public—Hence the force of opinion—Conclusion, love of ease common to man with the other animals—Society varies infinitely his means of procuring it—Indulgent judgments the legitimate consequence of careful study.

MAN, considered as a solitary being, has only simple wants, which would lead him to a succession of uniform acts, the history of which would be limited to a small number of facts. But solitude cannot long continue his natural state. The love of ease, the experience of the facilities which association offers, the need of doubling the sense of existence by the communication of ideas—a kind of inclination, or secret affection—all tend to draw men together. It would seem that all these natural interests which constitute the first beginning of their mutual bonds would unite to draw them closer day by day. But,

society once established, extended, and above all civilised, a new order of individual interests arises, which is far more conducive to disunion than to union. Not that man ever loses the dispositions inherent in his nature. These are not destroyed, but eclipsed by the social state; and we often seek in vain in the civilised the traces of the primitive and natural man. This is the peculiarity which renders the knowledge of man so difficult. We cannot always, without much trouble, distinguish the properties he owes to his own constitution from those which have been superinduced by the social state. His natural wants are smothered by a crowd of artificial ones, and from these last he receives the impulse and movement which especially characterise him. It is easy to perceive both how and why, in a numerous society, these artificial wants must increase. One of the earliest consequences of this increase is to isolate those whom interest and inclination had drawn together. Thus the social state becomes the destroyer of the very principles upon which it is founded, and those principles become almost inert in the ordinary course and duration of society. The variety of pleasures, upon which the desires of all are fixed, produces a general and mutual rivalry. Interests become of a more personal nature, and continually narrow their sphere; and though this tendency to isolation is but an

acquired tendency, its effects are universal. Throw the most cursory glance over the world. You will see nations estranged from one another, private societies becoming more exclusive, families still more bound up in themselves, and our wishes, always governed by our interests, end by taking ourselves for their sole object. This disposition is a consequence of the general desire of well-being, inherent in every sentient creature. It is impossible for us not to pursue those pleasures which we regard as essential to our happiness, and not to wish to banish from them every object which could embitter their possession. This is an impulse of nature, and holds good in reference to all the artificial wants of society. Reason, in other words experience, does, it is true, correct the mistakes we commit as to the objects essential to our happiness; it shows us the desires of others rising around in opposition to our own, and the danger to which we expose ourselves in the thoughtless pursuit of whatever chances to please us; but if, by a powerful interest, it keeps down the effects of this our tendency, the tendency itself does not the less exist in full force, and the blind desire of pleasure is merely checked by a more enlightened view of happiness. That *self*, which Pascal only hated in others, because the greatest philosopher is not less influenced by self-love than the peasant, is not then detestable in itself, since it is

universal and even necessary. Every man feels this personality in others, and every one in his turn makes it felt by others. So far as, and no farther than, we are useful to others, can we reasonably expect attachment from them. The attachment of the dog to the master who feeds him is the faithful image of the union of men with one another. If his caresses are continued after the satisfaction of his hunger, it is because his experience of former want leads him to foresee future want. The links which bind men together in society, not being always formed by obvious and necessary wants, sometimes wear an air of disinterestedness and free-will which deceives us. The delights of friendship we do not consider as the effects of want; we imagine we forget ourselves in our love for our friends, and do, in fact, frequently give up our dearest interests for them. But only from an imperfect estimate of our wants do we regard these sacrifices as really disinterested. The man whose lively conversation fills my mind with a crowd of ideas, of images, of sentiments, is as necessary to me as food to the hungry. He preserves me from *ennui*, he gives me a full, strong sense of my existence—that is to say, he satisfies one of the most urgent wants of my nature. "You have become so necessary to me that I cannot be happy without you," is the most flattering speech we can make to a friend.

The stronger our attachments the more easily are we deceived as to their true motive. The activity of the passions excites and accumulates a number of ideas, which by their union raise chimeras in their subject, just as the heat of fever fills the brain of the sick man with dreams. This error, as to the real object of our passions, is never more evidently specious than in love. When in the spring-time of life the moment is arrived that brings the want by which the sexes are mutually attracted one by the other, hope, joined to some not seldom illusory affinities, fixes our wandering desires upon one particular object. Soon this object, never absent from our thoughts, destroys every interest unconnected with itself. Busy imagination goes in search of all kinds of flowers to deck its idol. Then, bowing down before the work of his own hands, the ardent youth sees in his mistress the masterpiece of the graces, the model of perfection, the incarnation of the wonders of nature. His absorbed attention only takes in other objects to make them subordinate to this one. If his soul is exhausted by these rapid movements, a soft languor makes him still dwell upon the same theme. Only when all sense of existence is suspended by sleep does the dear image abandon him. Dreams bring it again before him, and more bright than the light of day, it renews his life at the moment of waking. Then, if the prudence or

modesty of the woman, without driving him to despair, irritate his desires by a well-timed reserve, the lustre of virtue is added to the illusion of her charms; fear and respect hardly allow him to raise his eyes to this majestic object. His desires are annihilated by a profound veneration; or rather, they give place to the pleasure of obeying his divinity. He would throw away his life a thousand times, if this mark of homage were required of him. At length comes the moment which he had not dared to hope for, and which makes him the peer of gods. The charm is broken when the desire is gratified; the garlands lose their freshness; and their drooping flowers display to his gaze a woman often as faded as themselves.

In this way most of our wants so change their character as to become hardly recognisable. The most violent passions lose sight of their natural object, and secondary ones, which at first were only looked upon as means, fill their place. If you except those classes who are constantly absorbed by the care of providing for their subsistence, and by the anxieties relative to this object, you will find all others carried away by the stream of factitious passions, or at least by the factitious element which has penetrated into their natural passions. The primitive wants of food, clothing, lodging, no longer occupy them when once assured to them. Thus do

they feel immediately the effects of the two dispositions we have been speaking of—the love of ease, and the longing for a conscious existence—which, though in different ways, act upon them simultaneously. At the first glance it might seem strange that indolence and *ennui* should set the world in motion, but by close examination the fact becomes evident. The combination of dislike to labour, and dread of *ennui* produces as its first and direct consequence the love of power. One of the privileges which we consider most peculiarly our own is that of obtaining happiness without exertion. Only by the action of external objects can we be strongly excited and interested without exertion, but as these objects do not come at a wish, it becomes necessary for other men to occupy themselves in bringing together everything which can excite our sensations, without exposing us to the misery of activity. Now, in this case, nothing is so easy and pleasant as to play the sovereign, and to command. This it is which makes all men, and especially those who have no employment, naturally disposed to despotism. The tale of the sultan, who insisted on having amusing tales related to him, under penalty of strangling, is a faithful picture of the secret dispositions of the unemployed classes of society. But as no wishes can outlive hope, the tendency to despotism common to all men is limited

by their sense of their own weakness, and confines itself to the acquirement of distinction in that class into which they may hope to rise. Its only result for each individual is an uneasy desire to rise, which never leaves him, torments him, and often keeps him in a state of constant agitation through his whole life, though it originally sprang from the love of ease. The idea of distinction once established, soon becomes the ruling passion, and destroys that which gave it birth. As soon as a man has compared himself with those around him, and has attached importance to their opinion of him, his true wants cease to be the object of his attention and activity. What he cannot be, he will wish, at least, to appear; and from thence, in the mass, arises the taste for outward decoration, and all the paraphernalia which may give others the idea of power. Moderation, which is but the result of a more deeply seated and consistent indolence, has become so rare as to excite admiration, and ever since it has been an object of ambition, because it is the means of procuring consideration. Moderate men have in all times been suspected of dissimulation, because we can only imagine in others the inclinations which we ourselves feel. If a man has no hope of drawing upon himself the eyes of the world or of a whole republic, he contents himself with the notice of his neighbours, with outdoing his equals, and finds his

happiness in the concentred attention of his own little circle. These pretensions, under the various forms which they receive from individual tastes and resources, give rise to the different classes which divide and circumscribe knowledge and employments. Many individuals are struggling in each little cloud of dust to obtain the first places. The weak, being unable to rise, become envious, and do their best to keep down those who are rising. Envy, in its full development, and with its different modifications, sometimes leads to great crimes, and is always the moving spring of the petty calumnies which are the curse of society. This desire, which makes each man aim at a higher place than that assigned to him, appears to be in contradiction to a servile tendency which most men exhibit, and which is, nevertheless, but another consequence of the love of power. In former times, fear and a sort of enthusiasm must have caused ordinary men to submit to those who were led by strong passions to useful and daring actions. But this is not the kind of submission to which I allude. I am speaking of that yoke so universally borne, which people, about courts especially, who might live independent under the shelter of the law, take upon themselves. It is the love of power which leads them to it. They will crouch at the foot of a throne, in order to feel themselves above a crowd of heads which

they gladly see bending before them. The result must naturally be that those who are the most abject of slaves to their superiors, show themselves the most haughty of despots towards those whom fortune places beneath them; and this is found to be universally the case. The vizier, humbled in his master's presence, is eager to practise upon the pachas the slights of the Grand Seignior. The love of riches, again, is nothing else than the love of power; that is, the desire of new and interesting sensations, without the trouble of seeking them; for natural and near enjoyments are not exclusively confined to the rich. But in all large societies, where property is safe under the shadow of law, riches confer, in fact, the most real power. He who can gratify the wants, whether natural or artificial, of a large number of men, is sure of their attention and devotion. The desire of riches is thus naturally excited by the social state; it is a direct consequence of man's inherent love of ease, joined to his desire of a strong sense of his existence. And men, in general, are extremely greedy of riches and of power. But the activity they spend in the pursuit of them, and which places them within their reach, becomes itself, by habit, a most urgent want. Man labours and disquiets himself for years to secure the repose, of which, when he has obtained the necessary means, he is no longer capable. This is the cause of

that insatiability which is the reproach of misers, and of those, whatever their object, who are ambitious. They have lost the desire of possessing; that of acquiring now torments them, and this necessity for continual excitement is, in them, the product of the love of ease. It is in this way that in the social state the tendencies most natural to man gradually change their character and objects. Sociability itself, that inclination which attracts men to one another, gradually melts away, and loses all hold over collective man. On the contrary, those who pursue the same pleasures, and whose claims are the same, are constantly acting against one another. If these hostilities are not without some cessation, it is a repose most fitly to be compared to that of the advanced guards of two hostile camps. The evident inutility of any attack preserves in them the signs of peace. From all that has gone before, we might conclude that the social state has a tendency to corrupt man; that the various interests and competitions that it excites, in provoking them to greater efforts, produce, it is true, knowledge and its improvements, but that these are dearly bought by the crimes which flow from the same source. Such a conclusion would be unjust, and would proceed from the mistake of ascribing to society what is, in fact, the peculiar effect of the form of most of the societies that we are acquainted with.

Man cut off from society would be miserable. Association is indispensable to him; he seeks it both by interest and inclination; and, in itself, the social state would contribute to the common happiness. But this common happiness, which is the natural object of society, appears to be by no means that of the particular forms of society, ordinarily established by violence, usurpation, or chance, and founded upon the interests of the few. It is the peculiar forms of the social state which must bear the reproach of not furnishing man with the advantages which might naturally arise from it. What is the best form of government possible? A problem not so easily solved. We can only be sure that if society were so constituted that no excessive inequality of circumstances left the great masses in poverty, which the opulence of the few made more galling; that each member, besides personal liberty, had a guarantee that he should be able to procure the comforts of life by a moderate industry; that there were not in towns those crowds of unemployed workmen, not knowing what to do with themselves, and occupied in refreshing their sense of existence by every kind of means; that public services were the only sure means of procuring consideration, and uselessness were branded with contempt; under such a form of government the social state would ensure its members the

highest happiness of which our feeble humanity is capable.

Not that we can expect perpetuity, or even considerable permanence, of situation for any constitution.

Even if the form of society did not change the nature of our primitive affections, they would insensibly be changed by a tendency which is always silently but surely at work within us. We have observed that our sensations are weakened by continuance, and that they end by only presenting to us a tiresome recollection of an existence, full of life, which ever flies from us, and which we ever seek to recall. As fermentation insensibly turns sweet things to sour, so does this disposition change our holiest natural feelings, and make that a necessary to us which yesterday we should have shrunk from. The games of the amphitheatre, in which the gladiators left the ring when wounded, soon became insipid to the Roman ladies, and that sex, whose peculiar attribute is pity, was heard loudly demanding the death of the combatants. "Finally, they were required to die with grace," says the Abbé Dubos, "and this refinement of cruelty became indispensable to complete the pleasant emotion." From the same cause our attention is most willingly given to all uncommon spectacles; we eagerly seek all that excites many ideas in us, and, above all, those which

give birth to new sensations. The same need of stimulant determines our physical tastes. If strong liquors are agreeable to us, it is chiefly because the movement they communicate to the blood makes our ideas both more numerous and more clear, and seems to double the consciousness of existence. From all this we may conclude that that which we call pleasure only consists in the sentiment of existence, carried to a certain degree. In fact, in following the degrees of tickling, from that vague sensation which is simply tiresome, up to the point where it becomes really painful; in ascending from the deepest sorrow to that tender and interesting sadness which is but a feeble reflection of it, we should be tempted to believe that pleasure and pain, which are so various in their effects, differ from one another merely in degree, and not in kind. However this may be, it is certain that we owe to this want of excitement a curiosity which becomes the ruling passion of those who have no other to balance it; a taste for the marvellous which in many cases leads to an absurd credulity; a restlessness which, preventing us from living in the present, leads us into a region of fancy of far greater extent than that of reality. The bounds of reason are not long able to contain the fixed point of our happiness. Difficult and extravagant enterprises, unnatural ideas, take possession of the minds of most men. Religious

watchfulness and prayer do not suffice for the melancholy temperament of a Bonze. He must have chains to load himself with, live coals to place upon his head, nails to drive into his flesh. By these different kinds of austerities which he practises upon himself, he is assured of his existence in a far more familiar and powerful way than he who fulfils simply the duties of a citizen and of charity. Observe the course of all human affections, of those even which seem most peculiar to the individual, and which therefore should naturally be least subject to change, you will find them inclined to run to an excess by which their early manifestations are quite obscured. The delicate and sensitive man is in danger of becoming a coward. Courage often degenerates into harshness. The contemplative man becomes a Quietist, and the zealous one a persecutor. Even gaiety, which is so unfailing in some individuals, is also in most subject to change. It seldom outlives youth, because swamped by passions which stir the soul more deeply, or destroyed by its very exercise. But in those in whom it preserves its place more permanently from their incapacity to feel any but superficial interests, it insensibly changes its character, and loses much of its first grace. Frivolous men, destitute of every attribute but this lightness of heart, bear a great resemblance to those young animals who, when they have gone through all their

pleasant gambols, end by scratching and biting. This tendency to change, which carries with it almost all individuals, may be no less traced on a large scale in the great events which have shaken the world. Follow the history of all nations, and you will see the best governments, those which seemed the most firmly established, undergo a gradual alteration, and finally become wholly at variance with their first principles. A democracy, in consequence of a slow fermentation, becomes an aristocracy, and often ends in a tyranny. A limited monarchy transforms itself in time into arbitrary power, and if, in any State, external causes bring no change, an internal and never-dormant cause hurries all forms of government towards the abyss of despotism, itself the occasion of the most frequent and the most terrible convulsions. The same change is to be traced also in the manners and in the genius of different nations. In the early stages of society, when the State has not yet gained a sufficiently firm footing, when the fear of neighbouring hostilities makes watchfulness necessary, we find the manners and habits of the people rude indeed, but vigorous, and accompanied by great virtues. The interest of preservation keeps all on the alert, and if the spirit of defence is superadded to that of aggrandisement and conquest, we see heroism, severity of manners, and patriotic enthusiasm reign for some time among

them. But when the State has at length assumed an extent and power which guarantee the tranquillity of its citizens, and lull to sleep all fear of disturbance, whether from without or from within, security begins to lend refinement to manners, and makes them more feeble and effeminate. Ideas of pleasure become more predominant, but virtue does not yet abandon them. A modest urbanity veils the form of voluptuousness, but, though at first it renders it more attractive, it finally becomes troublesome. Then the vices show themselves openly; reserve and decency are laughed at; unswerving probity is thought bad taste; and the man who cannot at least tolerate agreeable knaves is thought wanting in the science of life. In the arts, you will see architecture quitting its noble simplicity for a style of profuse ornament; painting deepening all its colours; and a corresponding change will be perceptible in the productions of the mind. A false refinement will take the place of elegance; obscurity that of strength; everything will be called in question; puerile metaphysics will coldly analyse every sentiment instead of animating the soul. All will be lost, if no extraordinary man of genius arise to arrest this natural course of human inclinations; but it may happen that the cultivation of experimental physics, meditation upon and thorough investigation of the science of government, or the

spectacle of nature laid before it by men of a strong temper, may extend the sphere of the human mind, and lay the foundation for a new order of things. A happily-inspired genius may effect a change in the minds of his contemporaries, just as a revolution changes the government of a nation.

We see that man, by nature indolent, but always acted upon by the desire of a lively sense of his existence, is in society the constant sport of a hope which flatters him only to betray. Wearied, in his search after happiness, by the constant need of guarding against interests which clash with his own; either discouraged by the obstacles he meets with, or disenchanted by possession; it seems that perversity must be pardonable in him, and that misery must be his natural portion. I am only speaking here of the idle class of society, which, its existence being amply provided for, is only excited to action by artificial wants, and can only constantly enjoy the sense of existence by constantly finding new objects of interest and gratification. Those whom the necessity of providing for the most urgent wants of nature chains to an unremitting labour are much nearer to happiness, and farther from crime, than those whose lot they are accustomed to envy. If they can secure by their labour the possession of all things necessary to a comfortable life, they have attained the highest degree of happi-

ness of which our nature is susceptible. Work itself is to them that interesting occupation which others seek in vain. In their moments of relaxation they have the perfect enjoyment of the most simple and innocent pleasures, which have no charm for minds exhausted by continual leisure. In this class of happy men may also be included those whom natural taste, or, even more than this, habit, has devoted to art, to science, or to letters. For in this devotion they find a constant succession of employments and pleasures. Their objects are so numerous that there is no danger of their being exhausted. Besides, the habitual exercise of reason and taste strengthens both without wearying them, and even increases more and more the pleasure of the exercise. There are no men who have more enjoyment in themselves and in all which surrounds them, more especially if they can keep themselves free from jealousy and an excessive spirit of rivalry, from a morbid sensitiveness to the ill-success which may attend their efforts, and a treacherous delight in the misfortunes of others.

It is principally upon these two classes of men that we see the sentiment of which we have spoken acting most powerfully; I mean that tender compassion which interests men in one another, and which is the foundation of the quality we call humanity. This precious seed of all the virtues

finds a less complete development in those who are a prey to more violent passions, or who have but a painful sense of their existence. The interests of others cannot touch those who are a burden to themselves. But except some splenetic monsters whose unhappy and rare organisation makes them cruel by nature, and perhaps some few others to whom habit has rendered the emotion necessary, men are, in general, affected by the sufferings of their fellow-men, when their private passions do not stifle the voice of nature. If this sweet sentiment seldom or never attains such strength as to overcome self-love, it at least tempers it in most men. With little in common with the other kinds of emotion, it gains strength by exercise, and a repetition of kind actions makes benevolence more and more delightful to him who exercises it. If the crowd of artificial passions which agitate men in society have a tendency to check the development of this disposition; if the multiplication and urgency of wants add strength to personality, and make man more indifferent to the interests of others; it may also be urged that society offers a wider sphere to natural pity, and makes its exercise far more habitual. Man in the wild and savage state can be rarely moved to pity. To be so, he requires to witness the extremes of pain or want, because lighter sufferings are hardly an evil to him, and we cannot pity others for accidents which do not seem worth

fearing for ourselves. But the happiness of civilised man requires such a combination of varied elements, there are so many things the absence of which makes him really to be pitied, that natural compassion has in him an infinite sphere for its exercise; and there are few moments, in society, in which the man of feeling is without an object for his compassion. Happy they who are uniformly and steadily influenced by this sentiment! The idols of those who surround them, every one is eager to show them the kind dispositions which they manifest, and which they would continue to manifest, even if they had no prospect of a return. It cannot too early be communicated to children, for their own good and for that of society. It should be excited in them by moving sights, and by affecting images which should penetrate them with a sense of it. Lessons of humanity would be far more to their taste, as well as far more for their real good, than the barbarous words with which they are now wearied. If these ideas are not very active in the first ebullition of youth, in later years they take possession of the ground abandoned by passion, and their sweetness compensates for the delirium of pleasure. They raise and fill the soul. The man who, after a day spent in doing good, should not experience at its close the pure and satisfying feeling of happiness, would be an inconsistent and inconceivable being.

I repeat that the germ of a virtuous compassion might be developed in children, and that it would be a favourable preparation for their future life. I must add, that it is easy to inspire them with prejudices which would contribute both to the happiness of men in general, and to that of the particular society of which they are to be members. It was by virtue of these happy prejudices that the number of heroes at Sparta was equal to that of her citizens. In situations where heroism is not so indispensable, they might be made subservient to all the other public virtues. Self-love once enlisted in favour of a particular object, one generous action ensures another, and from the efforts we have made arises self-esteem, which makes us consistent in the maintenance of the character we have assumed. We become the severest judge of ourselves. This estimable pride governs the soul, and leads it to virtues so sublime that from their rarity they are regarded as above nature. Self-esteem is the only motive of those great and generous actions which do not spring from fanaticism. They must not be looked for from the slave ground down by fear. The fruits of servitude are baseness and crime. But this education, which modifies the generality of men and gives them character, cannot be conveyed by precepts, by instruction, by moral treatises. Experience teaches us only too painfully that reasoning, discussion, and

the dry exposition of truth are wholly powerless on the great mass of mankind. Man is an imitative animal. Action and passion, these modify and govern him. Except some few privileged natures, who judge of the essence of things by what they themselves experience, and who are made to battle with the stream, all are irresistibly carried away by imitation. Imitation it is which makes the child kneel at the altar, which gives a grave manner, and sometimes too a grave character, to the son of the magistrate, and courage and a bold bearing to that of the soldier. In a large society there are infinite combinations and modifications of influences; but the prevailing opinion stamps itself upon the members of each particular society, and gives them a kind of resemblance which distinguishes them from others. The continued presence of home-examples undeniably makes a strong impression upon children, but if public life be not in harmony with these, they are effaced by the more striking impressions produced upon the children by the latter as they grow up. Thus, with the same wants and the same means, the men of one century may differ as essentially from those of another as one nation from another. Not long ago we saw the age of chivalry, the ages of the fine arts; we now perhaps see that of philosophy; and unhappily we have seen many centuries of barbarism, of fanaticism, and of superstition in many

different nations. Since example and opinion determine, in society, the objects to which the love of ease shall make each of its members aspire, it follows that man, taken collectively, is the product of example and of opinion, and that it is possible to mould him almost as we please. This is especially easy in a monarchy, the throne being the pedestal towards which imitation, for a thousand reasons, looks for its model. If the republican form of government has, in the equality which is its essence, an admirable means of preserving simplicity for a certain time, yet when once, by the natural course of things, this simplicity is destroyed, disorder is still less easy to subdue. The principle of equality deprives example of its due weight, and Cato's virtues were a useless satire on the vices of his time. But whatever be the form of government, opinions and manners are far less dependent upon it than upon the actual situation of the State, both in itself and as regards other nations. If it is at peace with others, and if in consequence good order, plenty, and happiness generally prevail, the arts of pleasure spring into life; and in their train will be seen effeminacy, weakening both body and mind, and sinking through luxury into absolute debility. If foreign dangers or internal divisions threaten the safety of each citizen, watchfulness will be born of suspicion; hope, fear, and hatred will govern part of

the nation; and these passions, carried to a high degree, will produce distinguished efforts, talents, and crimes. From all that has been said, we may conclude that man, though composed of simple elements, has no distinctive character which may serve as a means of distinguishing all individuals. The love of ease is common to him with all other sentient beings; but the means of obtaining this ease are infinitely varied by the modifications which they receive in society. The result is a crowd of dissimilar individual tastes, which cannot be accounted for without a knowledge of their sources. This it is which often makes men, taken separately, so incomprehensible and so unlike; this it is which makes so-called general rules so inadequate to meet almost any particular case. In judging of actions, we attribute to others the motives which would have influenced us in their place, and the few who have set before their self-esteem the object of being honest are invariably losers. But in considering how many uncontrollable elements enter into the determinations and judgments of almost every individual, we should be led to feel an extreme indulgence for the whole race. I must claim your indulgence also for the length of this letter, in which, nevertheless, I have but touched very lightly upon the great subject of man. I have gone into no details, either upon the formation of language,

the extent of which is to him so inestimable an advantage; the gift of writing, which fixes and perpetuates his knowledge; the invention and progress of his different arts; or his natural disposition to the worship and service of the Divinity, which made the revelation which has been so useful to him, so necessary to regulate it. But as I warned you beforehand, I have been obliged to limit my sketch to some of his most striking characteristics, and you must be satisfied with my best.

I have the honour to be, &c.

END OF THE LETTERS OF THE NATURALIST OF NUREMBERG.

LETTER II.*

TO MADAME * * * *.

Analogy the only means at our disposal for judging the sentient beings that surround us—Does it justify us in referring the supplicating posture of a dog who has offended his master—the migrations of birds—to confused images—blind forces of nature?—Disposition of animals to perform certain acts common to the species may be considered in some degree mechanical—the result of organisation—Improvement in these acts—adaptation—involve choice in them as in us.

It is hardly possible, Madame, to conceive the pains which those who are resolved to deny the intelligence of animals have taken to account for the whole of their actions. Some make it the result of an incomprehensible mechanism, which, if it could really exist, would lead to the most alarming consequences. Others—as, for example, M. Reimar, a German doctor, who has written a large book on the instinct of animals—give them confused sensations, a confused memory, &c. He allows that for comparisons, for judgments, distinct images are necessary; but that, for action, confused images are sufficient. He lays it down that the analogy between the actions of the brute creation and the operations of the human

* The first letter is placed at the beginning of the book as "Dedication."—(Ed.)

mind is merely apparent, that they cannot have any motives, and that they simply act in the way in which we should have thought. He asserts that the present is everything to them; that yesterday, and still more the day before yesterday, does not exist for them. In a word, he speaks as positively, and his affirmations are as strong, as though his soul had once animated the body of some animal, and had ever since preserved the perfect recollection of its former state. All these gentlemen agree in assuming as a fact that which is the question at issue; they tell you, for instance, that, since animals are *irrational beings*, therefore they cannot reason. At other times they make perfectly gratuitous suppositions. They declare that animals are born with a perfect knowledge of all that concerns them, and that, without having ever learnt anything, they execute with the most finished accuracy those of their works which depend most upon skill—a fact which the experience of every one who has taken the trouble to examine will pronounce incorrect. But, according to these gentlemen, facts must not be attended to. It is indeed a most novel way of proceeding, to reject facts and base our judgment upon suppositions. The Naturalist of Nuremberg has, as you, Madame, have seen, replied to most of these assertions, objections, &c., in a way which seems to me decisive. But we must be always rebuilding our edifice

of truth, and especially when we have doctors for our opponents. You will, therefore, not take it amiss if I notice some of these objections once more, even at the risk of troubling you with some repetitions.

It is only by reflecting upon our own sensations that we can form a judgment of the animate beings which surround us. When we observe a series, and especially a long and varied series, of actions which could not be performed by ourselves except under the influence of certain motives, we have a right to infer that the being which performs them has been influenced by these motives. Not only is this analogy justifiable, but there is nothing which could, with any appearance of reason, sanction our assigning to it any other principles of action. And yet M. Reimar pretends that a dog who, seeing his master raise his stick, approaches him in the most submissive manner to turn away his anger, because he has already been successful by this means, is far from reasoning; that he has only a *confused and simultaneous image* of the upraised stick, of the pain which it may cause him, and of the indulgence of his master which will be the result of his submission. If it is true, as Lord Shaftesbury proves, that ridicule is the touchstone of opinion, the mere statement of this opinion is sufficient for its refutation. I well believe that the dog will not have

a distinct idea of the set of formal syllogisms which a German doctor would pronounce in a similar case; but his action would be obviously without a motive, or, if you will, would have no sufficient reason, were it not, to say the least, the result of an enthymem of which the two terms are strongly and vividly present to his imagination.

Doctors are very liable to confuse reasoning and argument, which are two very different things. Argument requires a spoken or written language. Its ordinary use is to draw a consequence from a known and acknowledged proposition by means of a third term, which serves as the connecting link. Reasoning is far swifter in its operation; it is enough, for purposes of reasoning, to perceive the identity of two ideas. If this identity does not exist, the reasoning is worthless, for it is only the expression, either by word or by action, of this identity. If you choose to put in an argumentative form the action of the dog who humbles himself on seeing the stick raised, you will find in it two series of ideas, having each two terms, with a third which connects them. The sight of the uplifted stick, the recollection of pain, the idea of the relation between these two sensations,—first syllogism. The recollection of the acts of humiliation in similar cases, of the pardon which resulted from them, the resolve which is the consequence of the relation between

these two facts,—second syllogism. Here you have matter for two arguments. Evidently the dog's memory and imagination have instantaneously run through all the terms of them, otherwise he would not have acted in accordance with them.

Nothing bears a closer resemblance to the occult qualities of the ancients than the principles to which M. Reimar refers the actions of animals. He says, for instance, that a bird of passage has an inward perception of the time when it ought to take its flight, and that it feels a sort of attraction towards a certain region. It must be granted that the attraction of a sentient being towards a region absolutely unknown to him would be a very extraordinary phenomenon, and that the perception of a being which was not sentient would be still more so. It is, undoubtedly, difficult to guess how this migratory habit was first established. We may, nevertheless, suppose that the inconvenience of a climate no longer suited to the condition of the animal gradually led to it; perhaps it was more than a century before these migrations, little by little, acquired their perfect regularity. But, at the present time, it is certain that the knowledge of the necessity of this passage, and of its proper time, is the fruit of an instruction handed down from generation to generation. Those who have had no instruction do not migrate, and the young birds are seen to be led

by those whose age and experience give them knowledge and authority. Let us take the swallows as an example which every one can observe. In the first place, their departure is always preceded by assemblages, the frequency and duration of which can leave no doubt that their object is to effect all the necessary preparations for a voyage undertaken by creatures who have the faculty of feeling, and of understanding one another, and who are united for a common purpose. The incessant and varied twittering which reigns in these assemblies clearly indicates communications and orders indispensable for the numerous offspring of the year. They must stand in need of preliminary instruction, constantly repeated, to prepare them for the great event. Frequent trials of flight are no less indispensable, and are often followed by a repetition of previous lessons which makes our roofs and chimneys ring again. Assemblies of men who should speak a foreign language could not give more evident signs of a similar project. But there is a more convincing proof than this analogy that these migrations are not the result of a blind and mechanical inclination. When, at the time fixed upon for the flight, which cannot, owing to weather, be retarded without compromising the welfare of the whole species, some, and even a large number of individuals, are too young to follow the rest, they are left behind, and remain in the country.

But it is in vain that they reach maturity; *the attraction towards a certain region* does not affect them, or too slightly to enable them to gratify it. They perish, the victims of their ignorance, and of the tardy birth which made them unable to follow their parents. If, as asserted, the actions of animals were carried out by the *blind forces of nature*, none of these inconveniences would arise. There would be no late hatches. Every action would be performed at one and the same moment, as well-regulated clocks strike the hour together, and a considerable portion of the race would not annually fall a sacrifice to the errors of those to whom they owe their existence.

A kind of uniformity, or rather of resemblance, which is noticeable between the actions of individuals of the same species, has led to the belief that they are determined by some external cause, and, as M. Reimar expresses it, that they "exercise blindly an innate, uniform, and regular industry in the most perfect manner, and the most conducive to their own welfare and that of the whole species." But this regularity, this uniformity, does not exist but in the fancy of some inattentive or prejudiced observer. There are doubtless in all animals some dispositions which may be called mechanical, some natural tendencies towards the objects which are proper for them. They must necessarily, without any previous experience, be disposed towards some actions needful

for the preservation, whether of the individual or of the species. This is an inevitable result of conformation, and is common to all sentient beings. But it neither excludes liberty, nor a sort of choice within the limits prescribed by organisation. At the pairing season, two young birds are led by an inward impulse to call and entice one another to pair, to build a nest, which has doubtless in each species certain fundamental conditions, but to the fashioning of which experience adds much in individuals; for it is certain that those of old birds are always the best made. In the precautions they employ to defend themselves from injury, it is easy to trace a perceptible progress in acquired knowledge. The Naturalist of Nuremberg is right in saying that the same thing would happen, and nearly in the same manner, to two children whom chance should throw together on a desert island. The mechanical attraction of the sexes for each other would not fail to make itself felt, and very certainly those children, when grown up, would penetrate the design of nature. As little does it appear to me doubtful that a bed of moss would be prepared for the child which would be the result; and this foresight would spring from a kind of inspiration or instinct, very difficult to account for, but quite impossible to reject. Many general resemblances, and an infinite variety of individual

differences—such seems to be the universal law in nature. The nearer we examine, the more do we find to admire. But wisdom must often resign itself to go no farther. Let us enjoy what is within our reach, and renounce that restless curiosity which seeks to explain everything.

I have the honour, &c.

LETTER III.

Examination of the so-called instantaneous attainment by animals to all the perfection of which they are capable—The reason their mistakes are so few—their constructions so uniform—Hereditary transmission — also hereditary weakening of qualities—Danger of denying that adaptation of means to an end implies intelligence—Author's preference for the doctrine that sensibility is diffused throughout the animal kingdom.

I FEAR, Madame, that you must already repent of the promise you required of me, to reply to the manifold objections urged against the intelligence of animals. To refute them, I must at least enumerate some of them; and the principal ones are repeated again and again, till we are all weary of them. As I have said before, the opponents of intelligence persist in assuming the point in question. If they profess to cite facts they are ill examined, clipped, or quoted with the omission of essential circumstances. Thus they are no longer the solid facts from which light may be received. If it were not a suspicion unworthy of philosophy, I should be tempted to believe that they often wilfully misrepresent, because secretly piqued by the kind of resemblance between the animals and ourselves, which they are quite decided not to admit. I do not know why we should make it a grievance that the animals which share with us

the advantage of being made of flesh and blood, whom we rival in appetites, and with whom we often contend for subsistence itself, should also share with us the privilege of ideas. However this may be, I must go on with the task you have imposed upon me, and I resume my subject.

An argument which is constantly repeated, and presented under every conceivable form, is drawn from the fact that animals acquire in a short time the greater part of the knowledge requisite for their guidance, and that there their progress seems to end. Unquestionably there are some operations in which their intelligence seems precocious, or at the least very rapidly matured. It would perhaps be difficult for us to enter into the details of the gradual instruction of experience. But, in the first place, we do not know what experience does for them; and how should we know it, we who are compelled to remain in ignorance of a part of the elements which enter into the education of our children, and even into the continued progress of our own? We know, in the general, that we have no knowledge but that which comes to us through the medium of our sensations. But if we try to find the origin of our habits—if we attempt to explain those of our actions which we regard as spontaneous, we shall without fail lose ourselves in these details. Nevertheless, it is certain that we owe them to our reflections upon what

we have felt. Read all that M. l'Abbé de Condillac has said upon the self of habit and the self of reflection; you will there see how the latter necessarily presides over the formation of habits, and how habit, once formed, takes the character of instinct, and so loses sight of its origin. But why, says M. Reimar, among all the means adapted to certain ends, do the animals invariably select the wisest and best of all? Why? Why because, where their means are so few in number, it is inevitable that they should make few mistakes. If, in the course of a game at chess, I have but two or three pieces left, I shall make fewer bad moves than if a full board offers me a greater choice of combinations. This is the case with the animals. Their organisation, and in particular their wants, naturally require but few perceptions. The habit upon which their preservation depends, once formed, they have no interest in forming others; they are hardly free to err in the choice of means, unless bewildered; and then, as the Naturalist of Nuremberg has fully established by facts, they become liable to error. Among ourselves, those whom Nature has provided with a straightforward good sense, and no great activity of memory, are less liable to err than those to whom a vivid memory and an ardent imagination present at the same time, or in very rapid succession, a crowd of ideas.

The apparent uniformity of the constructions of animals depends on the same principle. It is impossible that, destined as they are by Nature for certain fixed ends, and organised accordingly, they should not be limited to the circle peculiar to their species by their wants and means. It would be absurd, to require that their natural perfectibility should pass these bounds. To deny this perfectibility because they cannot go farther than they are led by their interests, or permitted by the faculties which belong to their organisation, would be as absurd as to deny that a stick is four feet long because it is not six. It is further untrue that the uniformity in works of animals is as great as people choose to represent it. At first we are only struck with a general resemblance between productions of the same kind. It is only after some familiarity with these objects, and after having in some measure lived among them, that we begin to discover variety in that which we had thought uniform, and had thought uniform not only at the first glance, but after an apparently sufficient scrutiny. Habit alone teaches us to distinguish differences, and confers the right of pronouncing upon them. It is by habit that the shepherd distinguishes each sheep in a large flock. In a hundred swallows' nests there are not two which present a perfect likeness to one another when care-

fully examined; and there must be a difference, for how else would each mother distinguish her own nest from that of her neighbour? The works of man, which must be infinitely more various, because his means place at his disposal a greater number of combinations, would assuredly present this same appearance of uniformity to eyes unused to contemplate them. A savage, suddenly transported into the midst of one of our cities, would be shocked at the barrenness of our invention. What!—he would think to himself—always these casements ranged exactly alike in the exterior of the houses! always the same arrangements in the interior of the apartments! always columns in front of large buildings! &c. And in his heart he would conclude that diversity was only to be found in the savage huts to which his eye was accustomed.

Men are astonished that animals exercise almost from their birth a part of the actions necessary to their preservation; and conclude that the principle of these actions is therefore innate and purely mechanical. In the first place, it is not surprising that Nature, who in everything adapts means to the end, should bestow greater facility and quickness in learning upon animated beings in proportion to the length of their existence, and to the knowledge they have to gain in order to supply its requirements. Now this rule, you will perceive, is very generally

observed. Without it we should see whole species become extinct, because they had not been allowed the time to acquire the knowledge necessary to their preservation. The Naturalist of Nuremberg was right when he remarked that the education of the ephemeris must necessarily be very rapid, since in one single day it passes through all the principal stages of the longest life—growth, reproduction, decay, and death. We ought not to infer that this education does not take place because we are unable to follow it in its various steps. Nor can we form a more adequate judgment of the impression these beings receive from the duration of their lives. Time is far from being absolute in its effect upon all sentient beings. Its only true measure for us is the succession of our ideas, and it is the same with all other sentient beings. He who has experienced the greatest number of sensations and ideas is he who has lived the longest; and this succession may be so rapid that twenty-four hours may be equal to the longest life. There is also another remark to be made upon the dispositions which we regard as innate and purely mechanical; it is that they may possibly be entirely the result of habits acquired by the ancestors of the individuals now before us. It has been proved by incontestable facts that a large proportion of the inclinations resulting solely from education, when they have been converted into

habits and cultivated for two or three generations successively, become almost always hereditary.* The descendants display them from their birth, so that they are undistinguishable from the qualities which are more inherent in the constitution of the animal. From this fact it is obvious that in those species which have been able freely to develop their faculties, individuals may transmit to their offspring dispositions superior to those with which they themselves have been endowed. It is

* Numerous examples might be adduced to prove that, in animals, the perfection of the senses, acquired by habit, becomes in the end hereditary. We know what an advantage the wolf has in the excellence of his scent, and with what confidence he obeys this organ. I have seen this quality transmitted to the third generation of the progeny of a dog and a she-wolf. Two of these animals had very strong traces of the wolf in them, both in their general form and in their inclinations; domestic life had in some degree softened their savage nature, and they were tame enough with those they saw often; they would come when called, but not in a straight line, as dogs usually do. They never wholly laid aside their suspicion. They began by snuffing the air, and when they had ascertained, by the scent, who it was that called them, they approached and allowed themselves to be patted. It is the same with the other senses. Shepherd dogs have seldom a fine nose, because for generations they do not exercise it; they are quick of sight and hearing, yet spite of their intelligence, which is augmented by their constant association with their master, spite of the docility which is almost inborn in them, it is, generally speaking, impossible to make them hunt well, on account of their deficiency in the most necessary quality, that of scent. There are doubtless some exceptions, but we may safely assert that they are rare in cases where successive generations have been exclusively devoted to the keeping of the flocks; but this is seldom the case.

possible, then, that the actions which we see performed by some animals, independently of the teachings of experience, are the fruit of a science of very ancient date, and that in former times a thousand trials, attended with more or less success, have finally led to the attainment of the degree of perfection which we see manifested in some of their works in the present day.

That among habits, those which are most certainly only acquired are afterwards transmitted hereditarily, and assume an equal character of spontaneity with the *dispositions most inherent* in the animal, is a fact not to be disputed. This observation has not escaped the Naturalist of Nuremberg. He says, and with reason, that those races of dogs which have been constantly trained to seize and bring back the game, manifest from their birth these two dispositions: yet nothing can be less natural to them. The inclination of this carnivorous animal must be to spring upon its prey and devour it. These dispositions become weaker, and finally disappear, if they are neglected for several generations. But so equally do those which proceed more directly from Nature. Take, for instance, the natural disposition of the wild rabbit to burrow. Tame him, and he will lose, in time, this sort of skill. After some generations, if you try to people a warren with domestic rabbits, they will not burrow: that part of their natural instinct has been

effaced, and will only reappear when wants of continual recurrence have made them feel its necessity.

We may then conclude,* with the Naturalist of Nuremberg, that the different species have been able to make progress, and that some animals have reached a point beyond which no farther advances are to be expected from them, unless some corner of the earth could be found, undiscovered by man, where in a favourable climate they could give themselves up, without interruption, to the exercise of all their faculties.

But if perfectibility be an indefinite quality, if it be difficult to ascertain its limits, it is not, therefore, the less true that it has a limit.

Limited wants, limited means, cannot furnish matter for infinite combinations. The intelligence of man also has limits which it will never pass, though those limits are as yet unknown to us.

The rapid education of animals, far from making us suppose them automata, or something like it, should lead us to admire the wisdom of Nature, who grants a more speedily-developed intelligence

* I have been told that some bees, transported to South America, worked the first year at the construction of a hive, and stored up honey for their winter sustenance; but finding that the country furnished them with flowers all the year round, they discontinued their labours, and no honey could ever after be obtained from them. I cannot positively affirm the truth of this fact, because I was not an eye-witness of it; but it seems to me quite probable.

to creatures destined to be early left to themselves, and obliged to provide for their own wants. Besides, we always compare the slow progress of our children with the rapid progress of other animals; but we do not sufficiently consider that we often prolong this dependent state in our children by our very care. Those of savages, almost entirely left to Nature's teaching, are much sooner awake to all the operations necessary for their preservation than ours. On the other hand, those animals which need suckling would infallibly perish without the care of their mothers, and the aid of a peculiar education. The she-wolf teaches her cubs how to attack the animals on which they are to subsist; birds of prey teach their young to fly; and this instruction may be traced in the gradual and repeated trials of the young birds.

This obstinacy in persisting to attribute *to blind movements, material sensations, a material memory*, that which receives so easy an explanation from the exercise of intelligence, seems to me to lead to dangerous consequences, most decidedly unforeseen by those who have recourse to these incoherent ideas. What relation can be conceived to exist between the faculty of sensation and the known properties of matter? Wherever we observe an exact adaptation of means to an end, there, it seems to me, we must acknowledge the guidance

of intelligence; and it is upon this principle that we rest the evidence of supreme intelligence in the formation of the world. From this evident truth we are justified in pronouncing the atomic system absurd, which professes to account for the most beautiful arrangement by the action of atoms, one upon another, in virtue of certain secret dispositions.

Without resorting to a system of automatism equally obscure and dangerous, is it not more natural, and at the same time more satisfactory, to consider sensibility as generally diffused throughout the whole animal kingdom, exercising itself in different degrees, and under an infinite variety of forms, in harmony with the wants which excite each individual to action, and with the organisation which sets the limit to each species? Shall we give the preference to the arguments of a false philosophy, which teaches us to look upon these beings as acting without motives for action, and simply swayed by blind impulses? The activity of animals; the variety of species, which destined, by far the larger number, to prey upon one another, are in a continual state of effort; the numerous means of alternate attack and defence, which, by the conflicting interests of each, keep the balance in the universe; are these but illusory spectacles, whose principle I must, despite the witness of my instinctive sympathy, continually

reject? I prefer, Madame, infinitely, to abandon myself to the free play of my admiration for the Eternal Artisan, who, from a single principle, sensibility, has drawn, in such astonishing abundance, this infinite variety of dispositions, of affections, and of actions, which unite to spread life throughout all nature. I prefer to observe each individual set in motion by sensibility, obeying his own peculiar affections, and thus contributing to the perfection of the whole, and to the just proportion which should reign between the species. I am struck with the same spectacle in the order of society; and surely the persuasion of a general and diffused sensibility makes this spectacle still more grand. And I give myself up the more readily to this idea because we have seen how much trouble and how many unintelligible and gratuitous suppositions the contrary opinion will cost us.

I have the honour, &c.

LETTER IV.

M. de Buffon's arguments against the intelligence of animals—His denial that sensation is to them and even to us the raw material of reflection, of comparison, of judgment, and that it leads them to modify their actions, carried out to its logical consequences—His theory of perturbations—of a consciousness in them limited to the present, not extending to the past—confuted by various facts in the lives of wolves, rabbits, pheasants, &c., well known to all sportsmen.

We have often read together, Madame, the excellent histories that M. de Buffon has given us of many of the animals. We have admired the eloquence of this great naturalist. The sagacity with which he seizes the characters which distinguish each species shows the truth of his pictures, and his brilliant colouring. In giving an account of those animals which he had himself observed, or of which he had before him reliable accounts, the details of their inclinations and actions, of their sagacity, and of their skill, are painted with an exactness and a charm which make him far outstrip all his predecessors. As long as he keeps the thread of observation in his hand, his path is sure: he penetrates the intentions of the animals, and, by his manner of describing their actions, lays open all their movements to the reader with the skill of a master.

But could we have supposed it? The author of the histories of the deer, the dog, the fox, the beaver, the elephant, appears wholly to disregard facts when he comes to argue; he then becomes one of the great detractors from the intelligence of animals. Doubtless he has more right than his fellows to look upon his own as a species apart; but, after all, being man, he is fallible, and we must be allowed the right of testing his opinions, provided it be done with the respect due to his person, and to his eminent talents.

M. de Buffon, in his "Discourse upon Animals" (p. 23, vol. iv. of the edition in quarto), thus expresses himself:—

"The animal, on the contrary, is a purely material being, which neither thinks nor reflects, but which nevertheless acts, and appears capable of determinations. We cannot doubt that the determining principle of the animal's actions proceeds from a purely mechanical influence, absolutely dependent upon its organisation."

And at p. 24 he says:—

"The internal sense of the animal is, equally with his external senses, a result of a purely mechanical influence, a purely material sense," &c.

What! We witness a course of action in which was clearly displayed the present sensation of an object; another sensation, recalled by the memory;

the comparison of these two sensations; a balance of conflicting impulses, the evident sign of this comparison; a marked hesitation; finally, a determination, for an action follows which could not otherwise take place: and in order to explain what is so simple, so perfectly in harmony with our own personal experience, we are to have recourse to incomprehensible mechanical perturbations! Most assuredly we know not what produces sensation, either in ourselves or in the other animate beings. There are many other things of which we are doomed to be ignorant. But, given the phenomenon, we know its effects; and it seems to me impossible to confuse them with the results of mechanical influence, however numerous these last may be imagined to be.

By what successive perturbations can the gradual instruction of an animal, such as constantly falls under our observation, be accounted for? You may see that an object which he perceives for the first time gives him an abstract general sensation, often false, but that his attention finally grasps the details of it, and thus rectifies his first notion. You must further observe that this rectification is not accomplished in a moment, and that instruction does not proceed by a regular movement, as would necessarily be the case with a machine.

Often, indeed, retrograde steps may be observed,

which, though impossible in any kind of mechanism, are easily reconcilable with an interested attention, which is endeavouring to arrive at the truth, and only does so by repeated trials.

Rags so put together as to resemble the human form will frighten away birds, at least for a time; for this assemblage suggests to them an abstract idea of man.

The interest they have in drawing near it, in order to pick up the grain which it is placed there to protect, will often induce them to take some steps towards the object; but their first impression makes them timid and suspicious. If they are emboldened by the silence and repose of the scarecrow, the least wind, which gives motion to it, frightens them away. Again they approach, but by degrees. At last, the grain that they see, or suspect to exist, excites their attention, and makes them examine more closely. Then the sensation becomes clearly defined, they gradually correct their error, and, when fully convinced that the form is illusory, the scarecrow loses its virtue, because it no longer represents a man to them.

Not only have animals general abstract ideas subject to correction, they have particular abstract ideas also of the relation which certain phenomena have with one another; and often, by what they see, they judge of what will follow. A setter, who sees the

sportsman's gun directed towards the animal he points at, has his attention evidently fixed upon the effect to be expected from the shot. How can any one dare to attribute to mechanical perturbations the impression received from an effect which is yet in the future?

None of the actions, which are at all complicated, of animals, and especially of the carnivorous animals, but will furnish similar examples. It is evident, Madame, that M. de Buffon has only been induced to refer these acts to a blind mechanism by the fear that too much equality between the animals and man would lead to dangerous consequences. Such a fear is respectable, even when it leads to error. But we have proved that it is, on the contrary, the error itself which may lead to fatal consequences; that we can conceive of no relation between the sensation and the memory which all agree in attributing to animals, and our idea of the properties of matter; and finally, that to attribute the effects of these faculties to a blind mechanism is to favour ideas of automatism which are against the whole evidence of facts.

In order to detract from the intelligence of animals, M. de Buffon is obliged to take for granted some facts which are far from being verified.

"The sense of smell," he says—p. 31—"is the sense in closest relation to instinct, to appetite. Animals

have this sense in much greater perfection than man; so man naturally knows rather than desires, and animals desire rather than know."

At all events, the only difference here proved is of degree; and it is one of the many instances in which M. de Buffon, carried away by observation and evidence, weakens the argument he wishes to support. But further, it is by no means universally true that animals have a better scent than man. The carnivorous quadrupeds are the principal possessors of this privilege, and in them the sense of smell is at least as relative to knowledge as to appetite.

The wolf, the fox, and the other carnivorous animals, as the Naturalist of Nuremberg has observed, use the sense of smell as their best informant of all the knowledge which concerns them.

If pursued, they invariably fly against the wind, and are thus warned of the ambuscades prepared for them. If a man lies in wait for them, they scent him, recognise him, and take another way. If a trap has been laid for them, it is in vain that it is concealed with the greatest care, and baited with the most tempting bait; if but the smell of the iron, or of the man who has handled it, is perceptible, *knowledge* proves stronger than *appetite*, and the animal only falls into the snare when the sportsman has taken the precaution to destroy by aromatics the

odour which awakens ideas of danger, and makes the most appetising bait an object of suspicion.

"The sense of sight," says M. de Buffon again—p. 31—"can only be depended upon when aided by the sense of touch. So this sense is more imperfect, or rather reaches an inferior degree of perfection, in animals than in man."

I do not believe this assertion to be generally true. I am even sure that observation is often against it. The bird of prey has certainly a sight more piercing and quite as unerring as that of man. From a height where he is invisible to us he perceives his prey. If in his youth he makes some mistakes, he is perfectly able to form a judgment of the forms and ways of life of his victims when repeated experiments have sufficiently instructed him. A falcon which has lived a year in a wild state distinguishes perfectly a lapwing from a partridge. He attacks the one, and leaves the other undisturbed, because he knows by experience that to pursue it would be labour lost; he only attempts to seize it when some peculiar circumstance favours the attempt, or when his hunger is so pressing that he catches at every hope, however small, of appeasing it.

It strikes me that M. de Buffon has not sufficiently distinguished between touch and *handling*, which is but a sub-division of touch. This peculiar form of touch belongs exclusively to those animals who have hands. It affords them a means of judging more

quickly of the forms of bodies, and of more easily rectifying the errors of the eye; but it is absolutely useless in judging of distances; touch alone is here sufficient, and all experienced animals learn to estimate distances nicely. The falcon, as the Naturalist of Nuremberg has said, estimates with the most perfect precision the distance between himself and the partridge he would pounce upon as it flies, the time necessary to reach it, and the space it will pass through in that time. If he erred in one of those points, it would be impossible for him to pounce exactly upon it; and I defy any one to give a reasonable explanation of such an action by means of mechanical perturbations. Never will a wolf or fox who has been pursued and shot at pass within reach of a man who carries powder. The case is the same with ducks, crows, and all other birds, when they have sufficient experience; for it must be borne in mind that those who have none are almost always easy to surprise. Sometimes the oldest of them are deceived by disguises against which they have no reason to be on their guard. But these disguises, once known, lose their effect, unless excessive hunger obliges them to brave the danger. They are aware, then, these animals, that they can be reached from a distance; they know it, because they have learnt it; they have also learnt to calculate the distance which places them out of danger. The confidence

with which they pass just out of gun-shot proves their perfect knowledge of it.

Far from the sense of sight being less perfectible in animals, it appears, on the contrary, that in all those who have any interest in exercising it, it is far more acute and piercing than in man.

"But," says M. de Buffon, "this excellence of the senses, and the perfection to which they may be brought, has no very apparent effects except in animals. Man, on the contrary, is neither more reasonable nor more witty for having used his eyes and ears constantly. We see no inferiority of mind in people who have duller senses than others, who are short-sighted, deaf, or deficient more or less in sense of smell."—(P. 33.)

Without doubt the mere excellence of the senses, and their constant use, do not constitute wisdom. We see even that those who confine themselves to the continual exercise of their senses, and who by this means bring them to greater perfection, are often wanting in what is called mind. We must reflect upon our sensations, combine them, and extend their application by attention. This it is which enlarges the sphere of intelligence, and this it is which accounts for the animals being unable to give much greater extension to theirs. It is true that they have the power of reflecting upon their acts, since these are often modified by incon-

veniences formerly experienced and since foreseen. But besides that their means are infinitely fewer, they have neither various wants nor leisure. Now, as has been established, these two conditions are necessary to an habitual exercise of reflection, the sole well-spring of improvement; nevertheless it must be confessed that obtuseness of the senses would not be particularly conducive to intelligence as regards those ideas which are in direct dependence upon them. MM. Piccini, Grétry, Glück, would hardly have produced their masterpieces had their sense of hearing been dull. The same rule cannot be applied to near sight, because it may also be extremely clear, and then a nearer approach suffices to give a perfectly good view and correct impression of the object. M. Bernard Jussieu had a very near sight; but it is because, at a short distance, it was good, that he became one of the greatest botanists of Europe. The extremely near sight of M. de Buffon has not prevented him from making excellent microscopic observations; but had it been altogether deficient, his genius would not have sufficed to produce its wonderful results. We may remark, in considering this sense, that near sight confers, perhaps, an extra advantage as regards the workings of the intelligence. The mind, spite of itself, is hardly ever passive. It is not distracted by objects which it does not mean to observe.

A near-sighted person is constantly in the position of a man absorbed in meditation, and thereby abstracted from surrounding objects.

We have now wandered, Madame, to some distance from our subject; but the freedom of epistolary communication admits of these digressions, and I shall take advantage of this freedom to dispense myself from any laboured transition.

"A perfect analogy," says M. de Buffon, "requires at least to be free from all inconsistency: it would in this case require that animals should be able to, and should now and then do, everything that we do; now, the contrary is seen to be the case."

It then becomes necessary, in order to prove an analogy between the class of peasants solely absorbed by the wants of life, and that of people occupied in high speculations, that they should be able to, and on some occasions should do, all that has been done by Newton or by M. de Buffon; now, the reverse is seen to be the case, &c.

I will not quote the whole doctrine of M. de Buffon of the different kinds of perturbations which, balancing one another, effect in animals determinations and actions which appear very much to resemble our own, but which, according to him, differ essentially from them. You should read the work itself if you wish to see a model of eloquence

and of address, and the most ingenious efforts which argument can make against truth. But I own that this complicated mechanism is beyond me. In examining the facts, I am unable to admit even the possibility of it; and I am sure that, were M. de Buffon as great a sportsman as he is a philosopher, he would agree with me that the most numerous perturbations, and counter-influences of every kind, are insufficient to explain the most ordinary actions of the majority of animals.

"If I have rightly expressed myself," he says again, at page 41, "the reader will have already seen that, far from robbing the animals, I grant them everything except thought and reflection; they have feeling; they have it even more strongly than we have; they have the consciousness of their present existence; but they have not that of their past; they have sensations, but they are wanting in the faculty of comparing them—that is, in the power which produces ideas; for ideas are but compared, that is, combined or associated sensations."

This passage contains the summary of M. de Buffon's doctrine on the faculties of animals; the rest is but the development of it. Therefore, if we examine each assertion by itself, and point out the facts which disprove it, we shall have replied to all that can, with any show of reason, be advanced in support of this opinion.

"Animals have the consciousness of their present, but not of their past existence." Yet a fox who has been snared, and who, to recover his liberty, has been forced, as often happens, to leave his foot behind him, retains so vivid a recollection of his *past existence*, that, for years after, he avoids the snares laid for him. When these lame foxes, whose defect is the sign of their experience, are recognised, all intelligent sportsmen abandon the usual means of surprising them, knowing too well that reflection upon *their past existence* has become a habit to them, and that it renders them ever watchful against every kind of snare. It is then necessary to have recourse to other means, which shall lull their sagacity to sleep, or at least make it useless. It would be superfluous to accumulate examples; but I ask, would it be possible, without *reflection*, without *consciousness of a past existence*, that past inconveniences should produce a system of precautions, often modified in some particulars, though adhered to in general principle? Now this is what is clearly to be seen in the daily conduct of animals, and especially of those with whom we are at war, because they are our rivals for subsistence.

They have sensations, but want the faculty of comparing them.

We shall not have to go far for examples which

prove that animals have the faculty of comparing. A mouse wishes to pass through a hole; she tries it, and unsuccessfully; she then judges that she must enlarge it in order to establish the requisite proportion between the opening and the size of her body. I well believe that she has no abstract idea of proportion; but assuredly she has a concrete notion — precise or approximative — both of her body and of the size the hole should be to admit of her passing. And from the comparison she makes between these two notions proceeds the measure she adopts of enlarging the opening. She gnaws at it constantly, and with much effort, until she has brought it to the size she desires, and then she passes. It is true that, once successful, her reflections will probably go no farther, and that she will only think of enjoying the good she has procured for herself. If she finds abundant provisions, she will get fat upon them; and, like the weasel in Horace, destroy that proportion which admitted of her entrance; but this is a kind of imprudence not so unusual in the human species but that it may be overlooked in a mouse.

"Animals," says M. de Buffon, "can have no notion of time, no knowledge of the past, no idea of the future."

That which constitutes for us the measure of time is the succession of ideas or sensations which have

affected us, and which leave some trace in our memory. It is certain that the animals having fewer ideas than we have, there must be fewer degrees marked upon the scale with which they measure time. But they must have some idea of it, since they foresee it, and give signs of its periodical returns.

All the animals, and they are numerous, which get up at certain hours to feed, are punctual to that hour; not with the exactitude of the clock which strikes the hours, but with the modifications which the circumstances of the season, or even of the day, may bring in the will of a sentient being. We must not include the carnivorous animals, whom we compel to seek their food only in the night, and prevent from exercising their activity except under cover of darkness. Let us rather seek an instance in some harmless species, which, from the tranquillity afforded it, enjoys the regular exercise of its liberty.

When the bareness of the ground after harvest has forced the pheasants to retire to their preserves —that is to say, about the 1st of September—they live together in flocks, and then leave the wood twice a day to seek their food; in French, *aller au gagnage*. They nearly all set off together at sunrise. When the sun begins to rise above the horizon, their meal being soon done because the food is plentiful, the heat drives them back again

to the wood. They leave it again between five and six, and their supper lasts till nightfall; then they return to roost. I ask how these birds would carry on these regular proceedings if they did not measure the intervals of time? Let no one take advantage of this regularity to say that these are mechanical movements; for, while preserving a certain order, they are modified by circumstances. If the heat is less intense than usual, their evening meal begins rather earlier. The same takes place if the food is less plentiful. When it becomes scarce, and the days are shorter, towards the middle of October, the pheasants only go out once a day, between nine and ten in the morning, and their repast lasts till sundown. Can any one honestly believe that this change of operations, according to wants and circumstances, is reconcilable with the idea suggested to us by mechanism?

The different meals, the intervals between them, form the natural marks of time among a simple people. Homer distinguishes the periods of the day by reference to the dinner-hour. Their meals are the most interesting of the daily acts of animals; these times must be engraven on their memory; but the sense of want, the knowledge of the greater or less facility with which it will be satisfied, vary the manner in which they thus measure their time quite sufficiently to give scope

for the evident exercise of their liberty. This variation is not confined to pheasants; it is manifested in most species which are not disturbed in the gratification of their natural inclinations. The red-legged partridge, though less accustomed to live in society, exhibits as much variation as the pheasant; and observant sportsmen know by the hour whether to look for them in the plains or woods. Rabbits are remarkable in that experience of the past gives them, in certain respects, considerable knowledge of the future. During the summer they usually leave their burrows some time before sunset, remain out a part of the night, and generally come out again between eight and nine in the morning, when it is not too hot. But if you see most of them out about two or three in the afternoon, if they eat very greedily, if the attention they give to their food makes them bolder and less suspicious than is their wont, you may be sure it will rain in the evening or during the night. They are nearly the most infallible of barometers. It is not possible to refer this presentiment of rain to a feeling of hunger which forces the rabbits to eat more greedily and earlier. On the contrary, it is well known that damp almost always relaxes the muscles, and makes all the mechanical movements of animals less vigorous. This marked avidity for food on the part of rabbits is then an act of foresight; that is, that

in consequence of something they have felt before, and which they now feel, they judge of the future by the past—the only rational method of prevision. The domestic animals should have doubtless, and have, equally with the wild ones, the power of measuring time. The knowledge of the past makes them also conjecture of the future. The hours when horses receive their feed of corn or hay are well marked by their impatient neighing. Those who are weak or vicious will make great resistance rather than pass places where they have been accustomed to rest. *They have then the consciousness of their past existence.* Dogs, those especially who have been accustomed to go out with the sportsman at a fixed hour, announce its return by impatient barks whenever he is late. The moment of departure is the signal for the most lively signs of joy. The sportsman is frequently even annoyed by them, and it is with great difficulty he succeeds in repressing them, especially when the accompaniment of his gun recalls to their recollection past enjoyment. This interesting recollection *of their past existence* is then more powerful than the blows which are inflicted to check the noisy ebullitions of their delight. I believe it is not necessary, Madame, to bring forward a greater number of facts in order to prove that animals present, though in an inferior degree to ourselves, all the marks of intelligence. I do

not deny that theirs is not to be compared to ours in extent, and still less in facility in making unlimited progress. But he who can walk twenty leagues, and he who is exhausted at the end of twenty steps, are both endowed with the faculty of walking. I might adduce facts without end in support of my opinion, and I need go no farther for them than the charming stories which M. de Buffon has given us, and in which the truth of the observation is almost equal to the charm and magic of the expression. But I love him too well to carry my war into his own country, and use against him arms which he has himself furnished me with. It would be an ill requital of the pleasure his works have given me, and the happy hours which I have passed in reading them. I have only opposed his opinion in the interests, as I sincerely believe, of truth. If I have been successful the question is solved. If not, I will enter the lists with no one after him.

It seems to me that, from all that has been said, we are justified in concluding with the Naturalist of Nuremberg, that animals feel, since they present the outward signs of pain and pleasure; that they remember, since they avoid whatever has injured, and seek whatever has pleased them; that they compare and judge, since they hesitate and choose; and that they reflect upon their acts, since they are taught by experience, and since repeated trials rectify their first judgments.

From these data, which to me appear unquestionable, it follows that you may, Madame, without fear give yourself up to the charms of affection for the animals which you delight in feeding and caressing. Be persuaded that your charming Zémire is no automaton, which, moved by the springs of a blind mechanism, gives you the mere shadow of sensibility. She has both feeling and knowledge; there is meaning in the way she frolics round you to please you. In noticing her, in endeavouring to increase her relations with you, you extend the sphere of her intelligence; you create and develop in her a desire to love and to be loved, which habit makes independent of other wants. If she thinks you in danger, and prepares to defend you, it is because your kindness has given her a feeling that you belong to her. She defends you with as much courage and anxiety as she would her own food.

You will perceive that this interesting creature, gay, full of life and thoughtlessness, in her youth, will abandon herself to a thousand movements, apparently objectless, because youth has need of exercise and of experience; when age shall have instructed her, and given her gravity, she will become more sedate. If less prodigal of movements, and therefore somewhat less rich in grace, her feelings also will become less fickle; they will assume a character of constancy and depth; and her

actions will tend more directly to one end. You will easily perceive that education is not everything to animals, that it only forms in many of them some good habits, and corrects some bad ones; but that there are perverse dispositions which nothing can alter, and upon which education is thrown away.

Your canaries, and the other birds that you keep, will show you intelligence under other forms and modifications. You will admire, with me, the unbounded fertility of the plan of the Great Workman, who, from a single principle, can bring forth so great a variety of forms. Although we can never fathom more than an infinitely small part relatively to the whole of this immense plan, we cannot but exclaim, in the raptures of our admiration—

"Oh the wisdom and depth," etc.

I have the honour, &c.

LETTER V.

ON MAN.

Compassion or Sympathy man's distinguishing characteristic—The language of action sufficient for its communication—Sociability a consequence of this instinct—The sense of reciprocity sympathy establishes gives us that of justice—United with our natural indolence it leads us to indulgence—In its perfect development self is lost in the loving service of others.

We have remarked, Madame, that most of the objections which have been raised against the intelligence of animals rest upon assertions which will not bear examination, and in particular upon the supposition of a continual uniformity in their operations, whence the conclusion of automatism is drawn. I have proved, and the Naturalist of Nuremberg had partly proved before me, that this uniformity does not exist. Numerous and certain facts have taught us that individuals, among animals, bring as much variety to bear upon their conduct and their works as is possible for beings who, with limited wants and means, are seeking the same end. The Naturalist of Nuremberg has well pointed out the infinite advantages which the human race enjoys in this respect over all others. He has touched upon all the different degrees of influence which the peculiar wants of man, the various means which society,

leisure, *ennui*, the faculty of recording his ideas, and all the artificial passions procure him.

I would to-day draw your attention to a disposition which seems to me to belong exclusively to the human species, which our Naturalist has mentioned but cursorily, and which well deserves a more minute examination, since it is the foundation of sociability, of kindness, of all natural virtue, and since by it man is raised far more above the level of the other animals than by the superiority of his intellect. This disposition is that by virtue of which every man who sees another suffer is himself affected with a feeling of suffering, when not diverted by any other interest. This faculty of sharing the suffering of another involves also that of sharing all his other sentiments. To sympathise is to feel with; and if sensations, properly so called, are by their essence incommunicable, we may safely assert that our feelings and affections spread with inconceivable facility. An articulate language is not as necessary for this communication as for that of our ideas. Outward signs, the language of action, are sufficient, and they are so connected with the feeling itself, as, except in cases of profound dissimulation, to be simultaneous. We feel that sociability must be the necessary result of this impression which men mutually make upon one another. When habit has strengthened it, and made its expression easy and

prompt, it must give them a certain identity of feeling whenever they are not isolated by private interests at war with the common interest.

We see nothing of the kind in the other animals. It is true that some species, as the stag, the fallow-deer, live in herds, but we can discover in them neither mutual need of one another, nor any sign of habitual communication.

The young wild boars live also in herds; but they appear to be united for no other object than mutual defence, because alone they feel themselves insufficient, and all community ceases when the time of danger is past. Wolves also, while young, live together, but it is an association for war and plunder, with no other bond than the common need of rapine, which finally breaks it up. The Naturalist of Nuremberg has remarked that the roebuck seems to feel a sort of longing for society, independently of other wants; but it is a society of such narrow limits that we cannot argue from it that its members feel any sentiment which extends to the whole race, and even if such a sentiment did exist, it could not have much room for its exercise, because the life and organisation of these animals do not admit of any reciprocal assistance. It is not easy to account for the active and courageous fondness which we find in most mothers; but their bold enterprises have the appearance of being impulses of personal

interest. They appear to be defending their own property. I have not a sufficient knowledge of those species which live and work together, such as the beaver, &c., to pronounce whether the habit and closeness of their association produce among individuals any degree of compassion. But, besides that their society ends with the labours which are its object, I believe myself justified in reasoning by analogy, that the faculty of compassion is far from becoming in them, as in man, a disposition which habit renders active and permanent; which has more or less influence upon all others; and which has the greatest, though often a secret, influence upon the whole of human action.

Some moralists have denied the existence of this principle, or at least have referred it to a kind of reflex of pity for ourselves, which would make it solely the result of personal feeling. It is doubtless true that personal feeling is sometimes mixed up with it; for we suffer when we see another suffer; the cry of pain, the signs of agony, throw us into a state of discomfort, which we are anxious to escape from. But I maintain that this sentiment of compassion is directly excited by the signs of another's suffering; that the shock of a blow which should reach ourselves would not occasion a more immediate emotion; and that if, occasionally, some thought of the dangers which may threaten ourselves mixes

with it, it is but secondary, and only deepens the impression already received.

I look upon sensibility—that is, the disposition to be moved by whatever affects our fellow-creatures—as a faculty as natural to us as that of sensation, the functions of which may, it is true, be suspended by our private interests; which it is even possible to blunt; but which may, also, by exercise and habit, be considerably strengthened. It is impossible that sociability should not flow from this happy and truly heavenly disposition. Personal interest may draw the link closer by providing for those who compose the society mutual help, which makes life both easier and more agreeable. But if personal interest be the most active principle in society, sensibility moderates some of those excesses of personality which tend to destroy in a short time all sociability; more abiding than the fear of law, it checks, one by one, many of the designs our self-love secretly forms against others; and, when cultivated, it establishes in us an idea of proportion between that which is due to ourselves personally and that which may equally be the due of all.

What Lord Shaftesbury calls the *moral sense* comes, therefore, from this principle: since it gives the sentiment of reciprocity, it gives us by implication that of justice, and the power of habit renders this result so familiar to us that its impres-

sion becomes as prompt as those depending upon our natural faculties.

It is well for the continuance of society that it is so. The Naturalist of Nuremberg has rightly said, that though in the social state every one benefits by the association, yet the tendency of private interest is to isolate each individual. Each man, absorbed in his own interests, would have no check but in the fear of drawing upon himself the hatred of all the others; and, once set free, or even with a hope of being set free from this, would give himself up to the carrying out of his own wishes. But the communication of feelings having once established the ideas of reciprocity and of justice, they produce a secret repugnance to violate the rights of others: this is to be found in no other species.

Every other animal, guided by his own interest, follows, without deviation, the road which his wants, and the resources he has to satisfy these wants, have traced for him. The circumstances in which he is placed, the obstacles he meets with, awaken, as we have seen, his industry, turn it upon himself, and extend the sphere of his intelligence; but this intelligence never exercises itself beyond the sphere of his wants. Man's faculty of being moved by the troubles of others, and the natural pain which they give him, introduce morality into his actions. It in a manner identifies the impressions of others with

our own, and thus produces all the motions of the soul which draw us towards one another. It is, to say the truth, often drowned by the louder voice of interest; but it makes itself heard whenever interest is silent, and sometimes, by habitual exercise, becomes the predominant impulse.

Man may, then, be considered as a benevolent being; or at least as endowed with a disposition which develops itself side by side with his other faculties, and which strongly inclines him to kindness when not impelled in the contrary direction. It is true that all the violent passions which take possession of man's soul change this happy disposition, often indeed so destroy it, that not a trace of it remains; but it is certain that in such a case the man is a degraded being, no longer in harmony with his nature. No one will deny that reason also is natural to man. But the same passions will disorder and pervert reason, and the habit of refusing to listen to its voice seems even to destroy it entirely. Thus it is true that a quality may be wholly lost in a large number of individuals, though belonging especially to the human race, and inherent in human nature. Man is not the less a being gifted with sensibility because crime is frequent on the earth, as he is not the less a reasonable being because thousands want common sense.

Compassion, the sharing the feelings by which we see others moved, must be natural to the human race.

We see it constantly at work in individuals who have not acquired it, who have never been roused to reflect, who are not educated, and who, by their station and circumstances, must be persuaded that they would never be reached by the sufferings they might inflict on others. It is most true that history in general bears too great a resemblance to the annals of a troop of wild beasts, and that the heart is wrung by all the horrors which have been brought upon the world by ambition, revenge, fanaticism, &c. I am not surprised that so revolting a spectacle should have persuaded many tender souls that man is a bad animal, perhaps the worst of all. But, again, the history of the passions is but a part of the history of man. To be thoroughly understood, he must also be contemplated when, restored to his right mind, he is at liberty calmly to follow the temperate dictates of nature. Then we shall see pity, sensibility, benevolence, either actively at work, or sufficiently manifesting their existence by habits opposed to cruelty. Men are seldom bloodthirsty when unexcited. For one sultan who amuses himself with cutting off heads every Friday after the services of the mosque, there are a hundred who vegetate in tranquillity in their seraglios without thinking of injuring any one, provided that they are not irritated by contradiction, and that they are furnished with money for their pleasures. With such an unlimited power and such

an education as theirs, they would commit many other excesses, if natural pity did not prevent their giving the rein to any wild inclination which might arise in them from mere want of excitement.

Many moralists have already cited, as a proof of the inherent benevolence of man's nature, the emotion universally excited by the representation of tragedies, when by well-arranged scenes an air of probability is thrown over the events represented. Nor can it escape us how much in this case the common impression is heightened by the communication of feeling; and the rapidity with which the emotion spreads, proves that it can proceed from no interested reflection. When, in novels, the situations are brought about naturally, when an unbroken chain of probable events has so engaged our interest that we forget that it is but a tale, then the characters in it acquire the right of interesting us, and we sympathise with all the sentiments with which the author has chosen to animate them. From these instances it follows, that if you can once make men forget the personal interests which isolate them, you restore them to the dominion of Nature, and, by so doing, to that of pity.

The eagerness with which people rush to executions is, I know, often urged as an argument against the existence of this feeling. It is true that they seek with avidity the spectacle of these bloody

sacrifices which justice thinks itself obliged to make to the public safety. But in this case they are less open to the charge of barbarity than to that of coarseness. If the need of excitement draws them thither in crowds, I have been told that the general compassion is testified, even on these occasions, by the tears of many. The horror which the criminal inspires is overpowered by the pity excited by his sufferings. Children, too, are often accused of cruelty, because they appear to delight in tormenting the living creatures which are abandoned to them. I have constantly observed them, and have always received the impression that these forments proceeded simply from their not having an idea of the pain they were inflicting. How should tlfey observe the signs of pain in a bird or a cockchafer? The signs of suffering must be very obvious to excite their compassion. But if, in playing with a dog, they chance to make him howl, natural pity is aroused in them, and you rarely see them repress the feeling. The class of men, called more especially the people, furnishes numerous instances of natural pity. It is particularly manifested among people of simple habits. We see that the mere absence of depravity ensures the existence of its soft emotions. Peasants above the very poor, skilled workmen, and in general all who are certain of obtaining by their

labour satisfaction for the urgent wants of life, are disposed to do good to their fellows. You seldom find an orphan among this class who has not met with all the help he has required; and their custom is to treat him like their own children, and not unfrequently with even more consideration. If now and then there mixes with this generosity some thought of a return, it is not the first thought. The immediate impulse is that of benevolence and compassion for one who is unhappy. We cannot look for the same kind disposition in those whose wants are multiplied by their vanity. These people have nothing to give, because the importance they attach to themselves makes them imagine themselves barely provided with what is necessary to them. Vanity is, perhaps, the quality of all others most fatal to natural pity. Some others, such as ambition and avarice, do not agree very well with it, but it is vanity especially which, concentrating a man's whole attention upon himself, destroys its very root; for it is its essence to diffuse itself around. Love, on the contrary, but only successful, happy love, is perfectly consistent with the exercise of innate benevolence. Perhaps even its impulses may add new life to this happy disposition. It belongs principally to the transports of happy love to say—

"Que tout le monde ici soit heureux de ma joie."

Rousseau, then, is absolved from the charge of

exaggeration when, in his "Héloïse," he represents two lovers absorbed in one another, yet putting off the satisfaction of their strongest desires for the pleasure of making two people happy. The pleasure which every one feels in reading this charming trait attests the benevolence of man. But for it, he could not sympathise with the beneficent disposition of two simple hearts, untouched by any influence but that of Nature; and he is to be pitied to whom this delicious picture seems improbable.

In maintaining, Madame, that man comes into the world with a disposition to benevolence, I do not pretend it is the main-spring of action with most men. It is not this kind of interest which gives the chief impulse to the moral world. Except a few privileged beings, in whom thought and continual exercise have fortified this sentiment, the world in general obeys the impulse of more urgent and more active interests; men seek their own welfare, and if they do not actually neglect any opportunity of doing good to others, they do not, at all events, go out of their way to seek it. But whenever they are not deeply occupied with themselves, men readily yield to the pity which the sight of misfortune excites in them. Often this pity is not strong enough to produce any great, and still less any continuous efforts. Indolence is one of the most powerful forces which act upon sentient beings. To rouse the sensibility of the

many sufficiently to obtain any exertion from them, it must be loudly appealed to. Light afflictions do not break their lethargy; rather, the impression they make being very weak, sometimes gives them a kind of pleasant, though sad, emotion, which is far from inclining them to any action. This combination of indolence and natural sensibility is the source of dispositions the elements of which must be carefully separated before they can be properly observed. Such, for instance, is the quality we call indulgence, the charm of which is to grant readily to others without nicely calculating their dues. It ensures its possessor an especial success in society, and in daily life is equally advantageous to him and to those who are its objects. But, in many cases, this happy quality degenerates into weakness, often into injustice, less by that which it derives from sensibility than by that which it derives from indolence.

It requires, then, that reason and experience should regulate its exercise. Often we think ourselves indulgent when we are, in fact, only too indolent to examine. We then yield to the impressions which we receive from those who surround us. This yielding is far less troublesome than would be the examination whether compassion to those who are present is not injustice to the absent.

True sensibility, when unalloyed, gives the desire to be just. Reason and instruction furnish the

means of being so always. Natural pity has a much wider and more continual influence on the educated than on the uneducated, because the former are able to recognise its more extended application. The vulgar will only be moved by cries of pain, by signal reverses of fortune; and their commiseration, coarse like themselves, is reserved for misfortunes of the most obvious kind, and these occur the least frequently. The educated man will find a thousand ways of obliging his fellow-creatures in things which interest them strongly, though lying farther from the surface. The attention required to avoid wounding the vanity of others, furnishes daily occasions of the kind. Unfortunately, there are, among educated men, very many in whom vanity is stronger than sensibility, who trade in applause, and are ever seeking, no matter by what means, to make their profits as large as possible. In these natural kindness will be found much disguised. They belong rather to the class of men swayed by passion, and this ruling passion is the more fatal, as its object is to hurt, not to soothe, the vanity of others. Always interested in the depreciation of whatever does not belong to them, they are the more perverse, because really fallen from their true nature; the knowledge they have acquired, far from strengthening in them the kindness natural to men, seems to have made them lose sight of it. They have turned

to poison the wholesome seeds which Nature and education had sown in their hearts. Among educated men there are also some hypocrites who claim the noble name of cosmopolites, but who make this general kindness a pretext for refusing their compassion to all particular instances of suffering. These men have perhaps wandered farthest from nature, inasmuch as hypocrisy is the disposition most remote from virtue; and besides, they generally add to it a vanity so complete as to leave no room for kindness. Those who are really gifted with a general benevolence, and there are some few, speak far less of it; but they are never found wanting when particular calls for it arise, and will often go out of their way to seek them.

If I were to dwell in detail upon the principal effects and modifications of the benevolence natural to man, I should fill a volume, and it is but a letter that I am writing to you. It must suffice for our purpose that it is nearly proved to be a quality which cannot escape observation, and which gives man infinite advantages over the other animals —greater ones, perhaps, than the superiority of his intellect. I know that some splenetic moralists will always maintain that at bottom our interest is the point at which we aim, and that we are incapable of acting but for our own benefit.

This is true; but it is true also that whenever our

natural faculties are not disordered by passion, our interest is excited by that of another; that we share the feelings of our fellow-men; that we are glad to comfort them when they suffer; and, finally, that the communication of feelings is as certain and more rapid than that of ideas, and that upon this continual exchange rests the foundation of society. It is further true that habit intensifies natural benevolence so much, that the happiness of those we love, and particularly the happiness of those whom we have long loved, becomes more necessary to us than our own pleasures. Two people, accustomed to the exercise of this kind of mutual affection, and by becoming, from their perfect sympathy, so united that they are only seen to be separated by the sacrifices which each loves to make for the other.

And here, Madame, is, as it seems to me, the highest degree of perfection, and perhaps of happiness, which the natural man can aspire to—commiseration to all his fellows, a closer, tenderer feeling towards some few; and this feeling becomes the source of the greatest happiness if it succeeds in blending all interests in one, and thereby extending the sphere of his activity. This is especially to be looked for in a well-assorted marriage union, in that of families, which is an almost inevitable consequence. But it can only be hoped for while manners remain simple and pure, and the soul

is free from the turbulent passions which disturb its serenity. When these sweet ties are wanting, a close friendship may yet fill their place. The world has often seen two friends each preferring the other's interest to his own, and the artistic representation of these generous feelings bears witness still that the heart admits their probability.

I hasten to conclude. I have only dwelt upon the advantages which man owes to his natural dispositions, and to the means of happiness these procure him.

Man, brought into actual contact with God by the medium of religion, is a creature of a different order, and may be the subject of sublime speculations, which do not belong to my subject, and which are too high for me.

I have fulfilled, as best I might, the task you required of me. I must have convinced you by so doing of the deference and respect with which I am, &c.

POSTHUMOUS LETTERS ON MAN.

LETTER I.

TO MADAME * * * *.

The groundwork of uniformity in man's actions—Progress the work of the few, and of the few set free from the necessity of providing for their daily wants—Uniformity best perceived by comparing nations in similar stages of civilisation—Their clothing—Language—Implements—Government—Institutions, as inheritance and marriage—Ordeals—Religious worship of the sun, of stars, of anointed stones, of trees—Fetish worship—Polytheism.

Let us not hesitate, Madame, to consider the precious germ of compassion as that which gives the human species its most marked advantage over the rest of the animals; it is the true foundation of sociability, and consequently of the improvements and the virtues which constitute the great difference between the human and the merely animal races. If we only consider the intelligence, we shall find a greater degree of development in our species; but in all we shall find the same elements. In the absence of this really distinctive quality, compassion, there would be no difference but of degree; and there would be much to be said against even this difference. The argument so constantly brought forward to establish the inferiority of the brute crea-

tion, that of the uniformity of action always observed in the same species; will be seen, however unwillingly, by a candid examiner, to be equally applicable to man.

It seems to me, Madame, that people attribute to the mass of mankind a progress which is really the work of a very small portion, considered relatively to the whole of the species. From the creation to our own time—that is to say, throughout the known duration of the human race—the number of wise men has always been so limited, and the mass of mankind has always been so enslaved by prejudices, and these prejudices almost constantly the same, that one is tempted to consider all progress as simply individual. It is the same with foxes: although those who are experienced are in general more skilful than the others, yet there are to be found among them some few of superior sagacity, who, in invention and craftiness, are far in advance even of the wisest of their companions. Among the most civilised nations there is scarcely one really educated man in a thousand; the numerous class of peasants have no information beyond that relating to the cultivation of the soil, and even on this subject most of them are very ill informed. It is with them less a real knowledge than a routine that they obey; so that even in what appear their most intelligent proceedings their action might almost be looked upon as mechanical.

Nearly the whole of the class of artisans are in the same state. If by slow degrees the arts have been brought to greater perfection by some men of genius, who have successively added their mite to the heritage of knowledge transmitted to them by their predecessors, the generality of those who practise them are far nearer the level of automata than that of intelligent beings. All day-labourers, all savages, in a word, all human beings who are forced to spend the greater part of their time in providing for the most urgent wants of life, either do not think at all, or have only the limited number of ideas relating to the satisfaction of these wants.

All the nations who live either by hunting or fishing are in this case, so that the exercise of the intelligence appears extremely rare in the human species, considered as a whole. This is the more true because the principal actions which make up the lives of men of these different classes require no aid from thought from the time they become habitual. If it is true, as the Abbé de Condillac has shown, that reflection necessarily presided over the formation of these habits, which were impossible without it, it is no less so that, the habits once established, the actions which follow assume a character of spontaneity and instinct which makes any farther exercise of reflection unnecessary. Among those men who bear the name of philosophers there are

many who, in systems apparently coherent, have nevertheless not a single real thought. We have seen philosophy, or that which has borrowed the name, composed for a long time of an assemblage of words, either unintelligible, or at least not understood. And not seldom in disputes, even between men who ought to have brought their reason to bear upon the subject, we see, in the place of thoughtful, well-connected ideas, a mere series of words, habitually strung together in a certain order, and which rather resemble a somewhat complicated piece of mechanism than a regular exertion of the intelligence.

In laying these truths before you, I am far, Madame, from any wish to depreciate human nature. I gladly recognise its advantages, and especially its high destiny; but its real advantages are too considerable for us to seek to exaggerate them. Besides, I am only considering man left to his natural faculties. Man brought into relation with God through religion is a being of another order, the possible subject of the highest speculations; but these are not within my province.

All animals are compelled to obey the peculiar dispositions resulting from their peculiar constitution, and the different relations in which their nature and their position place them towards the beings which surround them. These relations vary

with their manner of life, the kind of food proper to them, the wants arising from climate, &c. Now, to the peculiar constitution of man belong a vast number of dispositions, which vary his actions very considerably. Most species of animals affect some kind of food in particular: man accommodates himself to, and even desires, many kinds; and, as his species is found all over the world, and is not confined to certain temperatures, it follows that he must have many more relations with the beings around him, and therefore that there will be a much greater diversity in his actions.

It is not a matter of surprise that this diversity should have led many thoughtful minds to consider man as a species apart, connected with the animal world by a resemblance of organisation, but separated from all other animals by an active principle inherent in his nature. It is as a consequence of this idea that people have denied the intelligence of animals, and have lost themselves in ideas of an incomprehensible mechanism, contradicted by every fact. They have not examined the external causes which oppose the further development of the perfectibility of the other animals; their limited wants, insufficient to excite the interest which necessarily precedes the acquirement of ideas, and the habitual exercise of reflection; the utter absence among them of society, of leisure, *ennui*, liberty, and of the

means of recording their ideas. They have overlooked the fact that these conditions, though only accessory to intelligence, are the indispensable handmaids of the power of perfectibility inherent in all sentient beings.

They have compared the infinite series of the actions of civilised man, now for ages in the possession of all these conditions, with the uniformity which appears to confine those of the brute creation within such narrow limits; and they have not perceived that in this case all depends upon the number of these conditions, and that to combine three numbers requires an intelligence of the same nature with that which combines a thousand.

These people have not investigated whether there is not, underlying the great variety which appears to distinguish the inclinations, the habits, the actions of men, a certain character of uniformity not at first visible, yet presumable, inasmuch as man, like every other sentient being, is in bondage to his nature; in other words, to the dispositions which arise from his wants, his relations, and his means.

To form a right judgment on this subject, we must not compare learned and civilised nations with savages and people without cultivation; on the contrary, our judgment must be formed from the comparison of nations of different countries in nearly the same stages of civilisation and culture: this is the

only way of arriving at a decision as to what man derives immediately from Nature, and what the exercise of his intelligence and reflection has successively stored up for him. Then, if a constant uniformity, or at least, striking features of resemblance, be perceived, between two nations which have had no communication with each other, in the invention and improvements of the arts, in religious notions, &c., we shall be justified in supposing that the entire species is swayed by an uniform disposition, which, given the same circumstances, always produces nearly similar effects. Now this strikes us very forcibly in reading books of voyages and travels. As to the arts, it is clear that they have progressed in the same order among the rude inhabitants of all countries. At first, branches of trees, broken off in the form of clubs, javelins, and arrows, armed with sharp stones (these same stones ground away to make them fit for sharpening the other instruments which may be required); bows, made in the same manner, with the sinews of animals for the string; trunks of trees hollowed out to serve as a shelter from the variations of temperature; the skins of beasts, undressed, for clothing; inarticulate cries, and a language of signs, which the constant need of expression has, after a thousand trials, and at the end of a very long time, perfected so far as to make it a spoken language,

though only including a very small number of words, representing some objects of the first importance.

Here we have the earliest arts common to the nations of ancient Greece, of whose infancy some details have reached us, and to the savages of America, who lived by hunting, as have done most of the aborigines. The same inventions will be found in the same circumstances, and the usages of the Esquimaux are, clothing excepted, identical with those of the savages of South America.

Those tribes who have frequented the sea-shore, living upon fish, have risen more rapidly to a more reflecting industry, from the nature of their wants and their more sedentary life, which admits a freer exercise of the intelligence. Necessity early led them to the invention of nets; of the art of hollowing out trees so as to form canoes; and of guiding their canoes. Examples of this rude navigation are yet to be seen in all savage nations who have been forced by their position to adopt this kind of life.

Neither are there any striking differences between the earliest political institutions. Several hordes have placed themselves under the command of a chief, either more powerful or more adventurous than the rest. The necessity of uniting for a common purpose, in order to satisfy their wants with more facility, has established that of obedience to a chief, who directs the chase and represents the

general wishes. Kingly government is, then, the most ancient, and has prevailed the most universally. A republican association is the fruit of the inconveniences formerly felt under the government of one man, and the necessary product of tyrannical violence. All the Greeks who were at the siege of Troy were under different kings: it was not till long after that they formed themselves into republics. Monarchy is still the most common form of government among savages. Notwithstanding their love of independence, almost all unite themselves in tribes under a chief, who directs the common operations, and administers justice to individuals if injured by their associates. This natural tendency to obey kings is so strong in man that the people of God, themselves under the immediate government of the Lord of the Universe, called loudly for a visible king, and persisted in their demand, notwithstanding the strong representations which Samuel made them of the evils that would attend the yoke of royalty. The pastoral tribes who, from the nature of their possessions, must be most inclined to live apart, yet assemble under a chief; at all events, on all occasions when union can be in any way advantageous to them.

The same customs are to be found in nations far distant from one another, where the manner of life is the same.

The Tartars and Hottentots, like the ancient Scythians, camp in hordes, shifting their huts when pasturage becomes scarce, or when any other reason, such as the natural or violent death of one of their number, makes the spot hateful to them. All these different hordes unite for the common interest, and they march to battle under a common chief.

Human morality being simply the result of the necessary relations between sentient beings living together, it is not surprising that it presents the same aspect in all places. It is essential to every kind of association, that each man should have undisturbed enjoyment of the fruit of his labours; that theft, the violation of engagements, &c., should be discountenanced by the common will or power. But it is surprising to find in countries very remote from each other civil institutions which appear quite arbitrary. I do not allude to the patriarchal government established among many nations. This appears to be in conformity with Nature, and that it is not universal may perhaps be ascribed to the cause that the people or peoples who have abolished it have been more impressed by a few of its disadvantages than by the number of its advantages; and it is unquestionably the earliest of all institutions. But it may excite surprise that numbers of men in different countries agree in depriving some of their children of the succession to their

property, and in establishing exclusive laws in favour of their eldest sons. Among the Hottentots all the property of the father passes to the eldest son, or, failing a son, to the nearest male relative. No division is ever made, nor are women ever allowed to inherit. A father who would provide for his younger children must establish them during his lifetime, otherwise he leaves their fortune, and even their personal freedom, at the mercy of their eldest brother: in the island of Amboyna, at the father's death, the eldest son is master of everything he possessed, and only gives to his mother and brothers the portion he may think necessary for their subsistence.

Who would not imagine he was reading the provisions of our feudal laws and of many of our customs?

As to marriage, there is certainly rather a wide difference between the ideas of the different nations, since polygamy is usual with some, and with many others the marriage union is considered as both binding and even sacred; but for the proof that men resemble one another, we do not need to see the same kinds of depravity equally prevalent in all: it is not essential that all savages should marry their sisters, as the Guebers yet do, and as was necessarily the case with the first men. It is sufficient that in most nations, and those, nations which have had no

communication one with another, we find the same conditions and restrictions relative to marriage as are in force among ourselves.

The Iroquois and Hurons are extremely particular about the degrees of relationship; even adoption is considered as equally an obstacle to marriage with the corresponding degree of blood-relationship.

In most savage hordes not only is marriage indissoluble, but even an idea of suitableness of rank prevails; unequal marriages seldom occur, and the married women are generally chaste: it must be confessed that licentiousness is usual with them before marriage, because they are then at their own disposal. This idea, which is not without some reason, prevails also, it is said, in Holland. But all these nations, and perhaps all the nations on the face of the earth, resemble one another in keeping their wives in the strictest dependence. Many even, after having made extraordinary sacrifices to obtain them, treat them, when once in their power, with the greatest disdain. It is only among highly-civilised and educated nations that we find woman treated with the respect and consideration due to her; the instinct of man is to yield only to brute force; the power of weakness and of grace can only be felt by those who, with the certainty that the urgent wants of life are provided for, feel the need of the excitement which a more refined happiness

procures; in a word, respect for women appears the last effort and crown of civilisation.

Among civil institutions there are some so strange as to excite our astonishment when we find them common to men of distant times and countries; and we are obliged to allow that such imaginations must be inherent in the very nature of man. Every one knows the means resorted to by our rude ancestors to discover crimes and the perpetrators of them. It is well known that the absurd ordeals of iron, of water, &c., which were called the judgments of God, formed the basis of the system of law of those barbarous times. We meet with the same customs in the kingdom of Congo; the negroes have a solemn ordeal which they call Motemba, and which decides all lawsuits and accusations: the priest takes a red-hot hatchet, which he holds near the flesh of the accused; if the accusation is against two persons, he holds the axe between their legs, without touching them. If the heat leaves no mark, their innocence is established; but a burn, however slight, is a proof of guilt.*

They have other ordeals of the same kind; such as taking a small stone out of a pot of boiling water; drinking prepared water, which the priest may poison or not at his pleasure; in fact, all the customs upon which we have seen our Europe rest her judgments,

* "Histoire Générale des Voyages," tome v., p. 9.

even when already enlightened by a pure religion, which forbids such superstitious practices.

But of all the ideas universally influencing man, those in which the resemblance is most striking, those which most invariably bear the stamp of an identical nature, are religious ideas. It may be useful to consider, somewhat minutely, these aberrations of human intelligence left to itself. Thus we shall more strongly feel the necessity of a revelation to impart to man more rational ideas of the Deity, and of the worship He requires.

Man is an animal inclined to adoration: constantly impressed with a sense of the dependence in which he lives upon all that surrounds him, he is forced every instant to acknowledge the limits of his powers, and to confess that his happiness or misery is regulated by a thousand causes outside of himself. These causes are hidden from him, but their effects, keenly felt, dispose the savage to a mechanical and widely-diffused veneration. Sabeism, the worship of the stars, of the heavenly host, would, I should have thought, be the first adopted by men unenlightened by revelation. But this is far from being the case in the infancy of the race; it seems probable that they only excited the worship of men in a later stage, and one of considerable civilisation. We know nothing of the first Zoroaster, who is supposed to have been the first teacher of the

worship of the stars in Persia; and the fragments of the works of the second which have been preserved to the present time plainly attest that he spoke to a people far removed from barbarism. The worship of the stars was found to prevail in Mexico at the time of its conquest by the Spaniards; but the people were already civilised, and even considerably advanced in the science of laws and government, and in some of the arts. Yet to the worship of the heavenly bodies they added many superstitions; they worshipped, says Gomara, the sun, fire, water, and the earth, for the good they conferred upon them; thunder, lightning, and meteors, because they stood in awe of them; some animals for their gentleness, others for their fierceness. They also worshipped locusts and grasshoppers, hoping to avert their ravages from their harvests. We find here the same worship paid to animals as in Egypt, also a country where arts and civilisation had made some progress. The Mexicans further adored two principal divinities—Vitziliputzli, the god of war; Tescaliputza, the god of repentance. To these they added many superstitious ideas which have been common among most of the nations of the earth; and human sacrifices crowned the list of horrors.

The worship of the sun was practised in Peru; but pure, as it was taught by the Magi of ancient

Persia. It is worthy of remark, that this religion, when unalloyed, was extremely mild. The true worshippers of the sun held human sacrifices in abhorrence. Their most familiar practices have since been sanctified by the true religion, such as the preservation of the persons of both sexes, vows of chastity, &c.

But of all ancient religions, that which yet exists among the negroes and the savages of America seems most especially to belong to the infancy of all nations; it is called fetishism. Its objects are sometimes animals, sometimes the most extraordinary inanimate things; it is this very strangeness which makes it wonderful that the inhabitants of all countries should have agreed in the same imaginations. These objects of adoration are public and private. The striped serpent is the national divinity of the people of Juidah; the veneration felt for it in Ethiopia dates from the highest antiquity.

Many American tribes worship the crocodile, like the Egyptians; or sea-fish, like the Philistines.

In the peninsula of Yucatan each child is placed under the protection of some animal, chosen at hazard, which becomes his tutelary deity, or patron. Differing from this custom, the Samoïedes and Laplanders worship many kinds of animals as gods (λατρεία). They pay the same reverence to stones which they anoint as the Syrians of old worshipped the stones called *boëtiles*, and as the Americans

still adore conical stones. Among the Natchez of Louisiana, these stones are kept in the skins of deer, as the ancients covered certain *boëtiles* with fleeces. The ancient Arabs had for their divinity a square stone, and the god Casius of the Romans, whom Cicero called Jupiter Lapis, was a round stone cut in two.

Jacob himself set up and anointed a stone at the place he called Bethel, where God had appeared to him in a dream. But after a time God forbade all these rites, when He gave the law to his people. In Leviticus He says, "Neither shall ye set up any image of stone in your land to bow down unto it," and in Numbers iv. 17, 18, He forbade the worship of beasts, birds, and fishes. But, notwithstanding these warnings, the leaning of the Hebrews to these absurd ceremonies was so great that they constantly fell back to them, and by their backslidings brought upon themselves again and again the terrible wrath of their Divine Lawgiver. They had also, like most other nations, a great veneration for mountains, *the high places*, and trees.

The ancient Germans had for their divinities bushy trees, and fountains and lakes, into which, according to Gregory of Tours, they frequently threw useful or precious things as offerings. They also, according to Lucan, like the Laplanders of the present day, worshipped twisted or dwarfed

trunks of trees, which they regarded as representing the Divinity.

Gregory of Tours tells us that the Franks also worshipped woods, rivers, birds, and beasts. These early forms of worship, which prevailed among the Egyptians, the Hebrews, and the Germans, we trace also among the ancient Greeks, and the coincidence is very remarkable. It is very doubtful whether, before Cadmus, the Greeks had the slightest notion of God. Stones, *boëtiles*, gnarled trunks of trees, rude columns, were their first gods. Herodotus tells us these were even without names; and long after, when names had been bestowed upon them, they retained their original form. The Venus of Paphos was a white pyramid; the Diana of the isle of Eubœa, a block of wood; the Thespian Juno, a trunk of a tree; the Pallas and Ceres of Athens, a simple stake, not even peeled; the Matuta of the Phrygians was a black stone with irregular corners: it was said to have fallen from heaven at Pessinus, and was afterwards carried to Rome with much respect.

Men have had, besides these absurd divinities which may be termed national, divers special objects of worship from which they expected individual and particular protection. Such were the Teraphim of Laban, which his daughter, the wife of Jacob, stole from him, on account of the reliance she

placed upon them. Such, in later times, were the Penates, or household gods, of the Romans, &c. And thus in the kingdom of Issini one chooses for his fetish a piece of wood; another the teeth of a dog, of a tiger, or of an elephant; this man the head of a fowl, a bull, a goat, &c. But all agree in testifying great respect to the fetish they have chosen. They religiously observe all promises made in its name and in its honour; they abstain, some from wine, others from brandy, others from certain kinds of fish, or from maize, &c.; and all scrupulously fulfil the law they have imposed upon themselves, and would rather die than break their engagement.

It must be allowed that the rudest savages, as seen in the present day, do not always regard their various fetishes as chief divinities. Some appear to recognise a being who created all things, fetishes not excepted. But at least they regard these last as secondary gods, whose mission is to procure them all they need for the satisfaction of their wants. They are the beings upon whom they call, to whom all their homage is paid, and when we consider the rudeness of all their notions, it is impossible to conceive that they could form any rational idea of a Supreme Being. Neither have they very clear notions even about their fetishes. The oldest among them are much embarrassed to answer any questions put to them on this subject. They

say only that they have been taught, by an ancient tradition, that to these fetishes they are indebted for all the good they enjoy, and that these beings, as formidable as they are beneficent, have also the power of doing them great injury.

You see, Madame, that the earliest worship of all nations, while left to the natural folly of their own ideas, has had for its object either raw substances, or certain either hurtful or useful animals, and that from west to east, from north to south, not only do we see the same objects of adoration, but almost the same forms of worship, and a constant practice of the same superstitious maxims. We have seen that the worship of the stars, which seems more elevated, and less unreasonable, is only to be found in a few nations, the early period of whose history is unknown to us, and who had already reached a considerable degree of civilisation when discovered. Nearly all nations which have made some steps from their original state of barbarism have agreed in deifying their benefactors—those who had contributed to give society its first form, who had given them laws, and particularly those who had taught them any useful arts: such were Saturn, Osiris, Isis, Bacchus, Mercury, Hercules, Ceres, &c. Perhaps the veneration they felt for these benefactors was at first no more than just; but if afterwards degenerated into adoration, not a little pro-

moted by the mechanical tendency of the human mind to imagine local divinities who take certain places, certain nations, and even certain individuals, under their protection. Next polytheism spread itself in a manner as favourable to the imagination of the poets as it was in harmony with the credulity of the people of the time. The seas were peopled with Tritons, with Nereids, and other divinities of different orders; the fields, with Nymphs, Fauns, and Dryads; and the woods, with Hamadryads. Each rivulet, each fountain, had its divinity; and natural superstition found room for its full exercise among so many objects of worship. All agreed in believing that the gods required honour, that they were easily offended, but that their wrath might be appeased by living sacrifices. This barbarity became almost universal, and was even carried to the point of immolating human victims. There are few nations who have not had to unlearn many barbarous customs. Men's natural dispositions have led them to believe, until more light dawned upon them, that by these atrocious acts alone could the wrath of the Divinity be appeased. "When we see," says M. le Président De Brosses, who has furnished me with many of the facts I have cited, "in different ages and climates, men who have nothing in common but their ignorance and their barbarity practising such rites, it is natural to conclude that they belong to the con-

stitution of man; that in his natural state, uncultivated and wild, not yet formed by any reflection, or by any call, he will be the same in Egypt as in the Antilles, in Persia as in Gaul, everywhere exhibiting the same series of actions, the necessary consequence of the same machinery of ideas.'

This letter is already very long, Madame; in another I will treat of facts nearly similar to these, or which at least resemble and depend upon them. But I shall be very brief; the spectacle of so general an uniformity appears to me to become wearisome after a time; and to inflict *ennui* upon you would be a bad way of testifying the respect and deference with which, &c.

LETTER II.

Fear apparently the motive of the first worships established by man—Alternation of good and ill in man's lot leads him next to the idea of two principles, one good, one evil—Doctrine of the immortality of the soul—Talismans—Amulets—Interpretation of dreams—Predictions—Omens—Augurs—Ignorance fostered by the professors and vendors of these superstitious powers and charms—Traces of superstition in our own times—Progress in the positive sciences owing to their connection and the power of writing—Hereditary dispositions a powerful obstacle to progress—Man's artificial passions almost all to be referred to the combination in varying degrees of his love of excitement with his love of ease—Infinite variety of effects from one uniform principle.

It would seem, Madame, that fear, not to say absolute terror, gave birth to the first religious sentiments of which we have any trace. All ancient nations regarded their divinities as inclined to evil. The idea of the devil—that is, of a powerful and malevolent being—still holds the principal place in the minds of the negroes. Again, the Tartars, tribes inhabiting Siberia, who have neither settled worship nor belief, are yet susceptible of a religious awe. In the morning they turn towards the rising sun, and address to him this short prayer, "Kill me not." Power as well as wickedness is ascribed by the negroes to their divinities. If they pray to their fetish for rain, or

any other gift they want, they never ascribe the denial of it to want of power. They rather consider the fetish as unfavourable to them, or as offended with them for some prevarication; and then they endeavour to conciliate its favour or appease its displeasure by sacrifices, but especially by abstinences of different kinds. All tribes and countries furnish examples of this method of conciliating superior beings, when supposed to be angry. The negroes of the Gold Coast, when they have taken upon themselves any vow of abstinence, are scrupulously faithful to it; and they consider theft and violation mere peccadilloes which their fetishes will easily pardon. All unenlightened men agree in attaching far more importance to the outward ceremonial, however absurd, of their religion, than to the observance of its moral precepts.

A somewhat more advanced degree of reflection upon the good and evil which befall man has led to the idea of an evil principle: the alternation, and the kind of balance between good and evil, have led to the belief that these principles are nearly equal in power, and they have been represented as in a state of continual warfare, in which success is nearly equal on both sides. This very ancient doctrine, which was revived again in the very heart of Christianity by Manes, the founder of the sect of the Manicheans, and reappeared later among the

Albigenses, has been the doctrine of all others the most widely spread among men who have just emerged from barbarism; and an admixture of it may be traced in almost all forms of worship. We know what a success it had in Persia. It is predominant among the Jokists, a people of Siberia. They believe in two sovereign beings, one the source of all good, the other of all evil. Each of these beings has his own peculiar family. One class of devils exercises its evil influence over animals, another over grown men, another over children, &c. And the same with their gods. Some have care of the animals, others protect man, &c.

Although the Samoïedes have a more rational idea of a Supreme Being, they also admit the existence of an evil being to whom they ascribe very great power, and who, though inferior, sometimes makes war not unsuccessfully. The doctrine of the immortality of the soul does not belong to the first infancy of man, but it appears everywhere simultaneously with the first steps of civilisation. It seems even probable that legislators have made use of this salutary idea to impose an extra check upon men, and to give their laws a higher support than mere temporal punishment; but the idea of the soul's immortality is almost everywhere accompanied by that of its transmigration: this doctrine, so prevalent in India, as is well known, exists also among the Samoïedes, who

most certainly never learnt it from the Brahmins. It had also spread and taken deep root among some of the Canadian tribes, but in a more limited form than among the Hindoos; they did not believe that the soul of man could ever enter into the body of an animal. These Canadians held that the soul of a man who had lived in a happy state, and had abused his happiness, afterwards animated the body of a slave, destined to misery and the hardest labour. Evidently these ideas, spite of their various modifications, were cast in the same mould.

All primitive nations in the same degree of ignorance have been led by nature to pay the same honours to the object of their adoration. We have said that the local and particular deities, being regarded as the most immediate protectors, have always asserted their claim to the most assiduous worship; and that this worship of local divinities, or, as among savages, of the fetishes which stand in their stead, uniformly consists in adorning them, in making them presents, and in devoting to them whatever is most precious. To these forms of worship is added, in a number of people sufficiently great to merit remark, a custom no less absurd, which is to render these pretended gods responsible for the event, and to exact from them, under pain of punishment, the fulfilment of the requests made to them.

The Chinese are really idolaters, although the

Government worships only the Supreme Being. The idols which the Government allows the people to satisfy their need of visible objects of worship are decorated, invoked, and feasted; but if any of these idols, called upon to send rain or some other blessing, does not hear and answer the prayer, it is generally beaten, and, if it persists in its obstinacy, deposed. Among the Ostiacks, a tribe on the borders of Siberia, the idols, which are usually nothing but logs of wood rounded off at the ends, are adorned with care. Their votaries cover them with silk, or other stuffs, according to their means, and submit to privations in order to please them; but whenever these idols do not appear to take sufficient interest in the small affairs of those who have adopted them as patrons, they strip them, beat them, and sometimes even throw them into the fire or water, and make others to supply their place. But when they seem to favour them, then no honours are thought too great for them. In our own times we have seen the ignorant multitude abandon itself to the same superstitious practices, spite of the Divine prohibitions; exalting to the rank and function of idols the representations of the saints who are held up by the Church to their veneration, invoking their aid rather as if they were local divinities than powerful intercessors, and making them responsible for events.

The more absurd certain opinions and customs are,

the more repugnant to perfect reason, the stronger is the evidence which inclines us to consider them as belonging to human nature, as in fact a necessary consequence of it, when we find them generally prevailing. It is impossible to deny this attribute of generality to the confidence which has been, and still is, placed by men in the virtue of talismans and amulets.

These are known to be divided into two classes, public and private. The Trojans had their palladium; the Romans their sacred buckler, and the secret name of their city, to which they attributed a saving power. It would be too tedious to specify all the towns which have possessed a talisman, more or less fantastical, upon which their destiny was believed to depend.

Did the ancient Romans contemplate the invasion of another nation's territory, they conjured the protecting god of their enemy, and invited him to come over to them, promising him all kinds of honours. Private talismans were universal; and even yet they are blindly confided in, even by enlightened nations. It is not surprising that a negro, a Jalof or a Mandingo, should feel himself safe from the darts of his enemies when covered by his *gris-gris;* but we may be pardoned some feeling of wonder at the adventure of a Spaniard, a man of cultivation and talent. He calmly awaited a pistol-shot, aimed at his breast from an extremely short distance. It missed

him; and when the bystanders expressed their surprise at his coolness, he replied, "There was nothing to fear; I have my scapulary on."

Neither does the blind faith which almost all men have had in divination—a faith yet lingering among many who ought to be superior to it—merit our astonishment. Most men—always restless, and often discontented with the present—ardently seek the knowledge of the future: they seldom fail to be duped by any charlatan in this art who endeavours to deceive them. But we may feel surprised at the uniformity of the illusions they have all cherished as to the means of obtaining this insight into the future. All have had the same respect for dreams, for instance, and a tendency to regard these wanderings of the imagination in sleep as the voice of the Divinity. All who have pretended to interpret these effects of a bad digestion, or of the fumes of wine, have obtained very great honours. The nations of America honoured their diviners with a name which literally signified "the seers,"—the name which the same class bore in the East.

It is not essential here to enter into details of the oracles, whose dicta, always equivocal, were, it is well known, universally received with perfect reliance. But it is always useful to compare nations of remote times and countries who have adopted the same remarkable manner of consulting the Di-

vinity. The savages of Thesprotia thought the sound proceeding from the cavern of Dodona, in which were hung many small chains, which the wind set in motion, was the voice of their god. The Brazilians, even at the present day, consult their divinity in the shape of a large calabash, into which they throw small stones. In it they imagine the spirit to reside, and to give his answers through the medium of the noise caused by the stones in this instrument.

What shall we say of the meeting by chance with various objects, to which numbers of men in most countries have agreed in attaching an idea of good or bad omens? The sudden meeting of a dead body, the cry of birds which are heard only at night, the flight of a crow in a certain direction, are to the inhabitants of the isle of Amboyna the most certain signs of evil. It is well known how universally people, even of considerable advances in civilisation, have been influenced by presages drawn from the flight of birds. The art of interpreting their different modes of flight was at Rome reduced to a mystical science, professed by a well-endowed college of augurs. Their decisions had a powerful influence in the most important affairs, even in the flourishing time of the Republic. We must not overlook the fact that, however absurd the errors by which the human mind has been misled, there have never been wanting charlatans who have found it for their own in-

terest to encourage them. And for this end they have ever fostered, and even openly preached, ignorance, because without its powerful aid it would have been difficult to meet the objections raised by those whose credulity had been overtaxed. In Egypt these charlatans formerly taught the people to consider it the highest good fortune to be devoured by a crocodile; it is they who, in India, teach them to regard as saints those who are crushed to death by the chariot of an idol; and who have persuaded the princes of Thibet that the excrement of the grand lama is a wholesome and sacred food, which he only sends to those whom he delights to honour.'

From all that has been said, I think, Madame, that we are justified in concluding that the dispositions and principal actions, taken in the mass, of the human species, are everywhere alike; the nations the most separated by time and space have a common ground of extraordinary inventions. It would seem that reason should be the bond of union, or that, at the least, it should soon dispel the clouds of error which envelop the species; but, on the contrary, we find this to be the truth—that while error belongs to the species, and shows itself, as we have seen, in forms of no great variety, reason is, and ever will be, the privilege of the few.

The only tolerably constant progress that has been made has been in the positive sciences, and

for this reason—the last observed fact may always be added to its predecessor; and by the means of writing, each new fact is preserved from oblivion. Geometry, astronomy, experimental philosophy, are among these sciences. But the art of legislation, moral philosophy, poetry, sculpture—all the arts which require genius—have made little or no advance beyond a certain point; rather, perhaps, have they lost something of their excellence in being transmitted to us. Man, judged only by his progress in the positive sciences, is, then, worthy of all admiration. A thoughtful mind cannot but be struck with wonder at the accumulated discoveries in astronomy, in navigation, &c.; but when, side by side with these discoveries, we see the greater portion of the race obeying the most mechanical impulses; when we see it fantastically credulous, mechanically superstitious, with a tendency to idolatry hardly kept within bounds even by a Divine revelation, we cannot overlook the fact of a fundamental uniformity, not perhaps so close as that which we trace in other species of animals, but far closer than we might have expected from the greater number of means man has at his disposal.

A proof that in man mechanism may not only coexist with reflection, but even sometimes overpower it, is that acquired dispositions become hereditary in him, as in other animals.

Missionaries testify that they have taken the children of savages from the cradle, brought them up with the greatest care, scrupulously concealed from them all knowledge of the customs of their fathers, and that all these precautions have been in vain. The force of blood has overborne education; no sooner have they felt themselves free than they have torn their clothes to rags, and gone to seek their tribes in the woods, preferring that mode of life to the one they had been accustomed to while with us. These hereditary dispositions must, in general, have been a powerful obstacle to all progress. History teaches that the race, even after centuries of greater knowledge, has more than once sunk back into ignorance and barbarism, from the natural tendency of man to sloth, and his preference for material and rude ideas. The Naturalist of Nuremberg has justly observed that man in society, enjoying the leisure which association procures to a certain number of individuals by the division and classification of necessary labours, is moved by two forces which impel him in contrary directions. The one is the ever-increasing desire of excitement; the other is the indolence natural to all sentient beings; that is, a mechanical aversion to the fatigue caused by action. It would, without doubt, be very interesting to trace in detail the various manifestations of these two inclinations. Among

them we should find nearly all the factitious passions of man, his progress, his love and abuse of power; in a word, most of the advantages and disadvantages of the social state. But the subject is too vast for us to touch even lightly upon here. Only, we may confidently assert that in such an examination, even amidst forms at first sight most dissimilar, a fundamental likeness would be traceable.

The Supreme Being, in creating the animate world, has, from a single principle, educed, with the most wonderful fruitfulness, a series of affections and actions which, while on the one hand so numerous as often to elude the sagacity of those who would trace them, are on the other stamped with a general uniformity which takes in each species a particular character. Thus, while there are no two oak leaves exactly alike, there are yet no two oak leaves which are entirely different from one another. This infinite variety, combined with so much simplicity, characterises all the works of the Eternal Artisan; but in none is it so strongly marked as in the animal creation, and especially in the human species, peculiarly fitted to know and worship Him.

THE END.

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