PIGEONS:

THEIR

STRUCTURE, VARIETIES, HABITS, AND MANAGEMENT.

BY

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WITH COLOURED REPRESENTATIONS OF THE DIFFERENT VARIETIES, DRAWN FROM LIFE BY

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PREFACE.

IN compiling the following pages the Editor has endeavoured to produce a treatise that should not only furnish the amateur of Pigeons with a greater amount of practical information on the different varieties than is to be found in any previous volume, but also to treat the whole subject in a more scientific manner than had hitherto been attempted. Hence the introductory chapters on the structure of the Pigeon; the natural history of the Blue Rock Dove, from whence all our varieties have descended; the account of the origin of the different varieties, &c., &c. But whilst these topics have been discussed, full space has been devoted to the practical part of the subject, and the characteristics and management of the different varieties have been more fully described than has been done in any other book.

The original works in English on the subject of Pigeons are few in number. They include Moore's "Columbarium," which was published in 1735; the reprints of Moore, which appeared, with slight additions, as "The Treatise on Domestic Pigeons," 1765, and "The Complete Pigeon Fancier," ascribed to Girton, but which was originally advertised as having been written by William Thompson; and "The Treatise on the Almond Tumbler," published anonymously. From these works the remaining treatises have been in the main compiled. Eaton's Treatise is confessedly a reprint of Moore and the Treatise on the Almond Tumbler, with additional notes. The Rev. E. S. Dixon's "Dovecote and Aviary," and Mr. Selby's "Treatise on Pigeons," in the "Naturalist's Library," do not call for special notice; but the Editor must not omit to acknowledge his obligations to the valuable fugitive articles contributed by the late Mr. B. P. Brent to the *Field* and the *Poultry Chronicle*. It may be stated, that whatever information he has taken from other writers has been in all cases acknowledged.

PIGEONS.

CHAPTER I.

THE STRUCTURE AND GENERAL CHARACTER OF PIGEONS.

THE structure and habits of the family or group of pigeons are so peculiar and so strikingly distinct from those of any other birds, that they demand special attention. The pigeons were formerly classed by the majority of naturalists along with the gallinaceous birds, the true poultry, and by others with the passerine or sparrow-like birds; but more accurate observation has rendered evident the fact that they form a perfectly distinct family, distinguished from all other birds by the singular manner in which their young are nourished. Unlike the true gallinaceæ—which are hatched in a very perfect state and able to follow the parent hen within a few hours after birth—the young pigeons are born in a most immature and helpless condition, and are fed with a curdy secretion, produced in the crops of the parents, the "soft food" of the pigeon-fancier. This is expressly produced at the period of hatching, for the support of the callow young.

The following account of the formation of these birds applies more particularly to the European species known as constituting the genus *Columba*, and has special reference to the wild Blue Rock dove, *Columba livia*, the undoubted origin of all our numerous domestic varieties.

Pigeons are usually birds of moderate size; their legs and feet are small compared with those of the gallinaceous birds, that scratch the earth in seeking for their food—a habit that is never followed by the doves.

Although slight in size, the legs and feet are very efficient organs of motion, the birds being able to walk with considerable rapidity when traversing the ground in search of food. The limbs are moved alternately, the pigeons never, when seeking food, leaping with both feet together, like the sparrow and other birds of the same group, although, when advancing to his mate, the cock pigeon often makes a kind of imperfect leap.

The chief organs of motion in the pigeon are the wings, which are very powerful when compared with the size and strength of the birds. In form they are long and pointed, differing essentially from the short rounded concave wings of the ordinary gallinaceous birds.

The wings are well adapted to urge the bird through the air in its long-sustained flight, which sometimes approaches a speed of three miles a minute, and has been kept up for eight consecutive hours at an average speed of forty-five miles an hour. The bones of the wing are shown in Figure I., where *a* represents the scapula

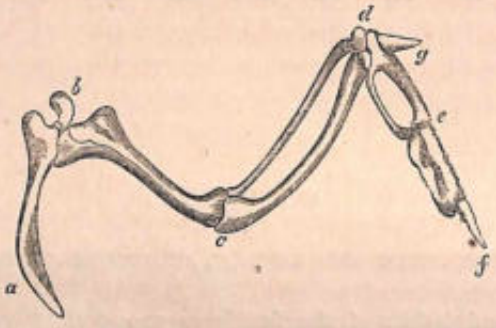

FIG. I.—BONES OF THE WING OF THE PIGEON.
a. Scapula or blade-bone; *b c*. Humerus or arm-bone; *c d*. Radius of ulna, bones of fore-arm; *g*. Index finger; *g e f*. Bones of hand.

or blade-bone, lying over the ribs on the back. To this is attached, by a movable joint, the arm-bone or humerus, extending from *b* to *c*; then follows the fore-arm or portion of the wing from *c* to *d*, this is formed of two bones, the ulna and radius;

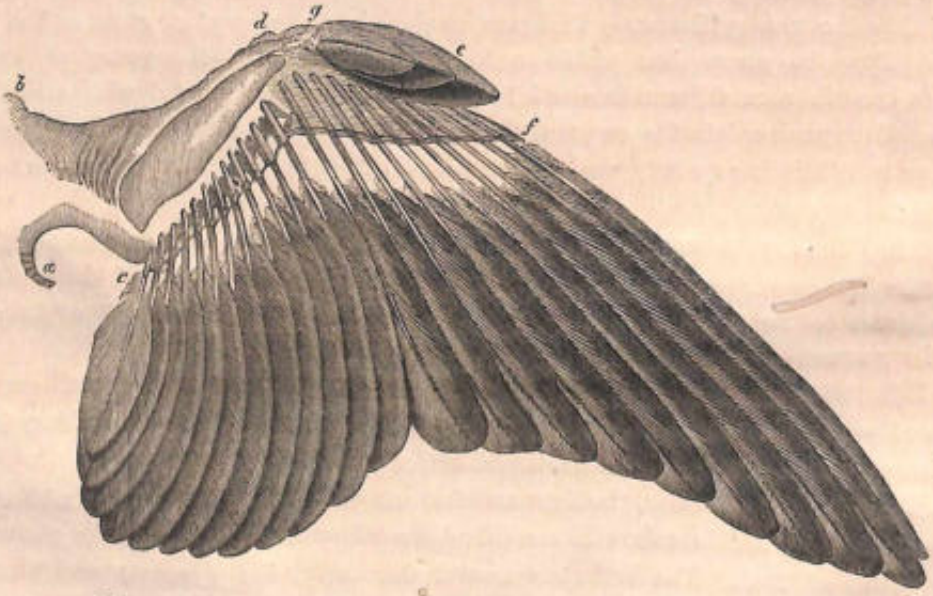

FIG. II.—PRIMARY AND SECONDARY FEATHERS IN THE WING OF THE PIGEON.

from *d* to *f* are the bones which correspond with those of the human hand—the small pointed bone *g* being the first finger. The second figure shows very clearly

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NOTE ON THE CONDUCT OF A TAME PIGEON.

By E. H. Aitken.

The curious example of conjugal infidelity among pigeons given by Mr. Hart in the last number of the Journal reminded me of two incidents, illustrating the characters of the same birds as husbands and fathers, which may interest members. By way of parenthetical preface, I will say that, if the Journal of the Bombay Natural History Society awakens a livelier interest in the behaviour of animals as intelligent beings, it will do a valuable work.

In 1879 a baby pigeon, not more than a week old, in one of the nests in my pigeon-house, was left an orphan by the sudden death of its mother. It was too young to be fed by hand and I supposed it must die, but I was mistaken. The bereaved father, instead of giving himself up to sorrow, at once took sole charge of his helpless offspring and reared it successfully. He had not sense to make any change in his habits. Among pigeons the female sits alone on the nest, except for three or four hours in the middle of the day, when she is relieved by the male; so this bird went in every day, about 10 or 11 o'clock, and kept the nest warm till 2; but all night he slept as he had been accustomed to do, in another chamber, leaving his naked little child exposed to the cold of a February night. It survived however and was doubtless all the hardier for its Spartan nurture.

Whether this parent's conduct is attributed to intelligence or stupidity will depend upon the direction in which we have accustomed our feelings to run; but there can be no question about the following case. In my flock there was one old male bird who was quite a character in the community. He was a fat easy-going, good-natured bird, but pampered and self-indulgent to an uncommon degree. It was a favourite sport of mine to fit him into the mouth of a stone jar, like a cork, only his head and shoulders out, and in that position to give him grain, which he would eat with the most composed enjoyment. His wife was a blue rock with all the strong instincts and affections of a wild bird. Finding her always willing to take more than her share of the family cares he shirked his and, during the hot season, gave up taking his turn on the nest altogether leaving her to sit day and night, which she did, excepting a very short interval which she allowed herself for food. When the cold season came round, he found his opportunity to repay her by taking all the night work duty on himself. He actually turned her off the eggs and slept in the nest himself, while she roosted at the entrance and kept out the cold air!

E. H. A.

compressed in the hollow of the wing, being unable to escape *through* the wing, owing to the closing upwards of the feathers against each other, and being also unable to escape *forwards*, owing to the rigidity of the bones and of the quills in this direction, finds its easiest escape *backwards*. In passing backwards it lifts by its force the elastic ends of the feathers; and thus, whilst effecting this escape, in obedience to the law of action and reaction, it communicates, in its passage along the whole line of both wings, a corresponding push forwards to the body of the bird. By this elaborate mechanical contrivance the same volume of air is

ZOOLOGICAL NOTES.

NOTE ON THE *HOMALOPSIDÆ* IN THE SOCIETY'S COLLECTION.

By Mr. James A. Murray, *Curator, Karachi Museum.*

In August last I had the pleasure of examining a good part of the Society's collection of reptiles, and among them the specimens (six in number) of the Homalopsidæ, described in No. I of the Society's Journal by the Rev. F. Dreckmann. The specimens were correctly referred to the Homalopsidæ, but were not assigned to any group evidently owing to the difference in the number of scales round the body. The other characters agreed quite with those of the genus *Ferania*, and I had no hesitation in identifying the specimens as *Ferania Sieboldi*, (Schbg.,) on finding that the specific characters of the only species known also agreed. When Dr. Gray founded the genus *Ferania* (*Zool. Misc.*, p. 67), he had but a single specimen from Province Wellesley in Bengal, and one with only twenty-seven series of scales round the body. Lieutenant Barnes has done good service in unearthing several more specimens, and thus being the means of bringing about an amendment of the generic characters of one of the four genera, constituting the group of Homalopsidæ, having no nasal appendage and more than five upper labials. The generic characters of *Ferania*, as now amended, will shortly stand as under :—

Snout without appendage; more than five upper labials; *two* anterior frontals; scales in 27—31 series.

One species, *F. Sieboldi*, (Schbg.,) characters as described in Gunther's *Reptiles of British India*, p. 284; scales in 27—31 series.

J. A. M.

LIST OF BUTTERFLIES RECEIVED FROM MAJOR YERBURY, Campbellpur, Punjab.

5	Hipparchia parisatis	2	C. sareptensis.
2	Aulocera swaha.	3	Euchloe lucilla.
1	A. saraswati.	2	Mancipium canidium.
2	Amecera schakra.	3	M. nipalensis.
1	Callerebia daksha.	2	Catopsilia pyranthe.
2	Ypthima asterope.	2	Teracolus faustus.
2	Y. bolanica.	1	T. fimbricata.
2	Y. nareda.	5	T. protracta.
1	Danais limniace.	1	T. etrida.

FIG. II.—PRIMARY AND SECONDARY FEATHERS IN THE WING OF THE PIGEON.

from *d* to *f* are the bones which correspond with those of the human hand—the small pointed bone *g* being the first finger. The second figure shows very clearly

the position of the different feathers of the wings with regard to the joints of its framework. Into that part of the wing formed of the bones of the hand, *d* to *f*, are inserted the flight-feathers of the fancier, the primaries of the naturalist. These are ten in number, the second being usually the longest, and the length diminishing regularly from it to the tenth. In some of the more artificial varieties, as the Short-faced Tumblers, the number of primaries is diminished to nine.

The secondaries are twelve in number, and take their rise from that part of the wing, *c* to *d*, which corresponds to our fore-arm. In some birds a third set of quill feathers, termed tertiaries, take their rise from the humerus *b c*, but these are not conspicuous in the pigeons. In describing the feathers of the wing, the bastard or spurious pinion *e*, attached to the rudimentary fore-finger *g*, must not be overlooked.

It is impossible to conceive any mechanical contrivance working more smoothly and effectively than the wing of a pigeon. When open each quill feather is supported by, and in its turn supports, those adjacent to it; and thus is formed a concave under surface to strike the air in flight. In closing, each feather glides smoothly over its fellows, and the whole wing shuts up in the smallest possible compass, the primaries passing under the secondaries, so that only their ends are exposed. In flight, the bird raises the extended wing, and then strikes it against the air below with great force. The support of the bird in the air is due to the circumstance that the downward stroke is made with much greater force than that with which the wing is raised, and also to the form of the wing and the curvature of the feathers. The mode in which the forward flight of the bird is secured has been more correctly described by the Duke of Argyll, in his "Reign of Law," than by any other writer. His Grace writes:—

"The power of forward motion is given to birds, first by the direction in which the whole wing-feathers are set, and next by the structure given to each feather in itself. The wing-feathers are all set backwards, that is, in the direction opposite to that in which the bird moves, whilst each feather is at the same time so constructed as to be strong and rigid towards its base, and extremely flexible and elastic towards its end. On the other hand the front of the wing, along the greater part of its length, is a stiff hard edge, wholly unelastic and unyielding to the air. The anterior and posterior webs of each feather are adjusted on the same principle. The consequence of this disposition of the parts as a whole, and of this construction of each of the parts, is, that the air which is struck and compressed in the hollow of the wing, being unable to escape *through* the wing, owing to the closing upwards of the feathers against each other, and being also unable to escape *forwards*, owing to the rigidity of the bones and of the quills in this direction, finds its easiest escape *backwards*. In passing backwards it lifts by its force the elastic ends of the feathers; and thus, whilst effecting this escape, in obedience to the law of action and reaction, it communicates, in its passage along the whole line of both wings, a corresponding push forwards to the body of the bird. By this elaborate mechanical contrivance the same volume of air is

made to perform the double duty of yielding pressure enough to sustain the bird's weight against the force of gravity, and also of communicating to it a forward impulse. The bird, therefore, has nothing to do but to repeat with the requisite velocity and strength its perpendicular blows upon the air, and by virtue of the structure of its wings the same blow both sustains and propels it.

"The truth of this explanation of the mechanical theory of flight may be tested in various ways. Perhaps the simplest is an experiment which may be very easily made. If we take in the hand the stretched wing of a heron, which has been dried in that position, and strike it quickly downwards in the air, we shall find that it is very difficult indeed to maintain the perpendicular direction of the stroke, requiring, in fact, much force to do so; and that if we do not apply this force, the hand is carried irresistibly *forward*, from the impetus in that direction which the air communicates to the wing in its escape backwards from the blow.

"Another test is one of reasoning and observation. If the explanation now given be correct, it must follow that since no bird can flap its wings in any other direction than the vertical—*i.e.*, perpendicular to its own axis (which is ordinarily horizontal)—and as this motion has been shown to produce necessarily a forward motion, *no bird can ever fly backwards*. Accordingly no bird ever does so—no man ever saw a bird, even for an instant, fly tail foremost. A bird can, of course, allow itself to fall backwards by merely *slowing* the action of its wings so as to allow its weight to overcome their sustaining power; and this motion may sometimes give the appearance of flying backwards—as when a swift drops backwards from the eaves of a house, or when a humming-bird allows itself to drop in like manner from out of the large tubular petals of a flower. But this backward motion is due to the action of gravity, and not to the action of the bird's wings. In short, it is falling, not flying backwards. Nay, more, if the theory of flight here given be correct, it must equally follow that even standing still, which is the easiest of all things to other animals, must be very difficult, if not altogether impossible, to a bird when flying. This, also, is true in fact. To stand still in the air is not indeed impossible to a flying bird, for reasons to be presently explained, but it is one of the most difficult feats of *wingmanship*—a feat which many birds, not otherwise clumsy, can never perform at all, and which is performed only by special exertion, and generally for a very short time, by those birds whose structure enables them to be adepts in their glorious art.

"Another fact observable in reference to birds of easy and powerful flight, is, that their wings are all sharply pointed at the end.

"The motion of a bird's wing increases from its minimum at the shoulder-joint to its maximum at the tip. The primary quills, which form the termination of the wing, are those on which the chief burden of flight is cast. Each feather has less and less weight to bear, and less and less force to exert, in proportion as it lies nearer the body of the bird; and there is nothing more beautiful in the

structure of a wing than the perfect gradation in strength and stiffness, as well as in modification of form, which marks the series from the first of the primary quills to the last and feeblest of the tertiaries. Now, the sharpness or roundness of a wing at the tip depends on the position which is given to the longest primary quill. If the first, or even the second primary is the longest, and all that follow are considerably shorter, the wing is necessarily a pointed wing, because the tip of a single quill forms the end; but if the third or fourth primary quills are the longest, and the next again are very little shorter, the wing becomes a round-ended wing. The common rook and all the crows are examples of this. The peregrine falcon, the common swallow, and all birds of very powerful flight, have been provided with the sharp-pointed structure."

FIG. III.—STERNUM OF THE PIGEON.

The mechanism by which the wing is moved has now to be described. It consists of the mass of muscles on the front of the chest. The sternum, or breast-bone of the pigeon, Figure III., has an exceedingly deep keel, *a*, serving for

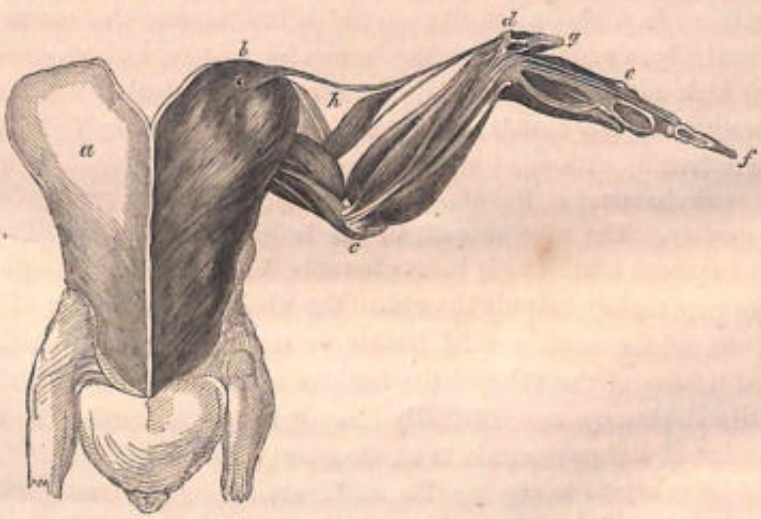


FIG. IV.—MUSCLES OF THE WING OF THE PIGEON.

the attachment of the powerful muscles which form the great mass of flesh on the breast. These muscles, as shown in Figure IV., pass from the keel of the

breast-bone to the humerus, and, when they contract, pull down the wing with extraordinary force. The muscles that raise the wing are not shown in this figure: they are much slighter, and, consequently, act with much less force.

The annual change of the flight-feathers takes place in the autumn. The mode in which this is arranged, so as not to interfere with the efficiency of the wing as an organ of flight, is most admirable. The moulting of the wing commences with the tenth or last flight-feather, or primary, and a new feather is produced so as to supply its place. A few days before this attains its full length, the ninth primary is shed, and subsequently the eighth, and so on to the first. The secondaries are replaced in a similar manner, only that the process commences with the first secondary and proceeds gradually to the twelfth. The effect of this arrangement is, that the efficiency of the wing as a means of flight is never seriously interfered with, as the loss of one feather at a time has no great effect in impairing the action of the limb.

The feathers of the tail are usually twelve; but in some of the domestic varieties the number is very greatly increased, occasionally to even three times that amount. The use of the tail is to support the hinder part of the body during flight. The tail, being held inclined obliquely downwards, presses, during the forward flight, against an inclined plane of air, and thus tends to raise the hinder part of the body—a support which is required, inasmuch as the wings are placed at the fore part of the trunk, far in advance of the centre of gravity of the whole body. The utility of the tail during flight is strikingly shown in the difference with which a pigeon flies after it has lost its tail-feathers: the action of the wings is much more rapid, the flight laboured in the extreme, and the bird so mutilated is left behind by the other birds of the flock in their rapid flight. The statement that the tail can be made to act like a rudder, in directing the course of flight, is often made by compilers of works on natural history, and repeated even in a work of as high authority as Owen's "Anatomy of Vertebrates." It is, however, entirely destitute of any foundation in fact. Birds turn, during flight, by striking the air more forcibly with one wing than the other.

The general character of the plumage of the pigeons differs greatly from that of the true poultry. The tube or quill of the body-feathers is generally short, and the shaft increases considerably in size towards the middle of its length, and then diminishes very rapidly towards the end. The whole of the feathers of the pigeon are destitute of the small second feather or accessory plumule, which is found growing at the top of the tube of the feathers of the true poultry birds. These peculiarities of plumage are sufficiently strongly marked to render the recognition of the feather of a pigeon certain to an observant naturalist.

The digestive organs in pigeons, Figure V., are strongly characterized by structural peculiarities distinct from those of other birds. The bill is small, slightly curved, and covered at its base by the membrane of the nostrils, which is scurfy and bare of feathers, the nostrils themselves being long and narrow. Contrary to the arrangement that is found in most birds, the bony frame-work of the upper

mandible is much narrower than that of the lower. This is most readily observed in a dried skull or in a very young nestling. This peculiarity of structure is important, as it is intimately connected with the mode of nourishment of the young bird.

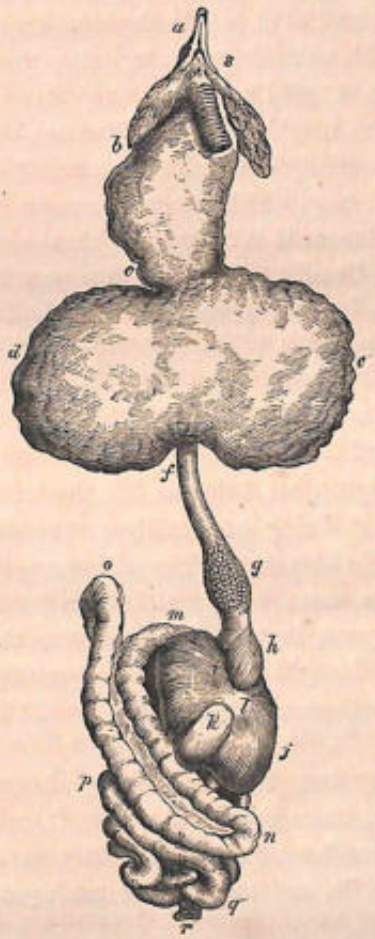


FIG. V.—DIGESTIVE ORGANS OF THE PIGEON.

a. Beak; *b c*. Gullet; *d e*. Crop; *f g*. Proventriculus; *l*. Gizzard; *h i j k*. Muscles of gizzard; *m n o p q*. Intestines; *r*. Vent.

The gullet *c* is wide and opens into a crop *d e*: this is equal on both sides, unlike that of the fowl. From the back part of the crop, a tube proceeds through the opening at the fore part of the chest into the interior of the body; this enlarges somewhat before reaching the gizzard, and is termed the proventriculus or fore stomach; it is furnished with glands which secrete the true gastric or digestive fluid. The gizzard itself is strong and muscular, lined with a thick dense leathery cuticle, and capable of grinding down the food with great rapidity, when aided by the sharp-edged stones and grains of sand swallowed by the bird. The intestinal tube which receives the ground food is upwards of three feet in length, and is remark-

able as being destitute of the large intestines, the cœca, which form so large a part of the digestive canal of the common fowl and of all other true gallinaceous birds.

Nor is this the only respect in which the digestive organs of the pigeon differ from those of birds in general; for there is no gall-bladder to receive the secretions of the liver, which are poured at once into the intestinal canal.

Pigeons feed on vegetable substances, grain, pulse, the seeds of grasses, and also on green vegetables. In a wild condition they devour a great number of the smaller snails that frequent neighbourhoods of the sea-coast, their crops when shot being often found to be partially filled with these small molluscous animals. The bird when feeding fills the crop, which is a mere receptacle for food and water, with the seeds and other substances it is collecting; these are soaked and macerated in the moisture of the crop. Small portions at a time pass through the proventriculus, where they are acted on by the digestive or gastric fluid, and passed on to the gizzard, in which, by the action of its powerful muscles and the small stones it contains, they are ground to pulp. In this condition the food passes on into the intestines, where it is mixed with the bile and other secretions; and the nutriment for the support of the bird is absorbed as it passes along the canal.

The intestines of a pigeon are twice as long as those of a hawk of the same size, the nourishment not being so readily extracted from vegetable as from animal food. The canal is also much longer in comparison than that of a fowl, in which the size of the cœca compensates for its shortness. The mode of drinking followed by pigeons is very characteristic; the beak is plunged deeply into water, and a long draught taken. The quantity of water consumed by these birds is very great—much more than would serve fowls of the same size.

The pigeons usually lay two purely white eggs, in confinement sometimes only one egg is laid, but never more than two, unless, from the absence of a sufficient number of male birds, two hens pair and make a nest, when four eggs are laid, which of course are sterile, and after being sat upon for the usual period are deserted.

The young are usually covered with long yellow down, but in those domesticated varieties that have certain colours this down is absent, as in the silvery and dun birds. Thus it is easy to distinguish between a young dun and a black in the same nest, the one being naked, the other covered with profuse yellow down.

The young, which are hatched in a very helpless and immature condition, are entirely fed at first with a soft curdy secretion, which is produced in the crops of the parent birds at the end of the period of sitting.

This secretion of "soft food," as it is termed by pigeon-fanciers, cannot be delayed; consequently, if the young do not emerge from the eggs on the eighteenth day, the old birds desert the nest, refusing to sit longer on the sterile eggs. The production of the soft food, however, may be hastened a day or two.

If a pair of chipped or hatching eggs are put under a pair of birds that have been sitting for sixteen days, their presence will always stimulate the secretion of the soft food, and the young will be duly nourished. The formation of this curdy secretion—true pigeon's milk—is a very remarkable fact; it seems determined altogether by the process of sitting; it is produced equally in both parents, though the hen sits for about twenty hours, and the cock usually for only four—namely, from about ten or eleven in the morning to two or three in the afternoon.

To receive this nourishment the young thrusts its beak into the side of the mouth of the old bird, in such a position that the soft food which is disgorged from the crop of the parent, with a sort of convulsive shudder, is received into the lower mandible or jaw, which is widely expanded in order to receive it. It is singular that so simple an action as this should have been so greatly misrepresented as it has been by many writers. Even so good an observer as Yarrell described in his "British Birds" the old pigeons as feeding the young by placing their beaks in the mouths of the little ones, and overlooked altogether the beautiful adaptation of the broad spoon-shaped lower jaw to the habits of the animals.

As the young advance, the soft food lessens in quantity, and the grain and seeds that constitute the nourishment of the parents become mingled with it; and when about eight or ten days old the young are fed with disgorged grain and seeds only, until such time as they are able to fly and seek their own nourishment.

The secretion of this curdy nutriment was first described in the "Philosophical Transactions" by the celebrated physiologist John Hunter, whose account of the process is as follows:—

"There is infinite variety in the means by which nature provides for the support of the young. In many insects it is effected by the female instinctively depositing the egg, or whatever contains the rudiments of the animal, in such a situation that, when hatched, it may be within reach of proper food; others, as the humble bee, collect a quantity of peculiar substances which serves both as a nidus for the egg and nourishment for the maggot, when the embryo arrives at that state. Most birds, and many of the bee tribe, collect food for their young. There is likewise a number of animals capable of supplying immediately from their own bodies the nourishment proper for their offspring during this stage, a mode of nourishment which has hitherto been supposed to be peculiar to that class of animals which Linnæus calls Mammalia; nor has it, I imagine, been ever suspected to belong to any other.

"I have, however, in many inquiries concerning the various modes in which young animals are nourished, discovered that all the Dove kind are endowed with similar power. The young pigeon, like the young quadruped, till it is capable of digesting the common food of its kind, is fed with a substance suited for that purpose by the parent animal; not, as the Mammalia, by the female alone, but also by the male, which, perhaps, furnishes this nutriment in a degree still more abundant. It is a common property of birds, that both male and female are

equally employed in hatching and in feeding the young; but this particular mode of nourishment, by means of a substance secreted in their own bodies, is peculiar to certain kinds, and is carried in the crop.

"Besides the Dove kind, I have some reason to suppose parrots to be endowed with the same faculty, as they have the power of throwing up the contents of the crop, and feeding one another. I have seen the cock parroquet regularly feed the hen, by first filling his own crop, and then supplying her from his beak. Parrots, Macaws, Cockatoos, &c., when they are very fond of the person who feeds them, may likewise be observed to have the action of throwing up the food, and often do it. The cock pigeon, when he caresses the hen, performs the same kind of action as when he feeds his young; but I do not know if at this time he throws up anything from the crop.

"During incubation, the coats of the crop in the pigeon are gradually enlarged and thickened, like what happens to the udder of females of class Mammalia in the term of gestation. On comparing the state of the crop, when the bird is not sitting, with its appearance during incubation, the difference is very remarkable. In the first case, it is thin and membraneous; but by the time the young are about to be hatched, the whole, except what lies on the trachea, becomes thicker, and takes on a glandular appearance, having its internal surface very irregular. It is likewise evidently more vascular than in its former state, that it may convey a quantity of blood sufficient for the secretion of the substance which is to nourish the young for some days after they are hatched.

"Whatever may be the consistence of this substance when just secreted, it must probably very soon coagulate into a granular white curd, for in such form have I always found it in the crop; and if an old pigeon is killed just as the young ones are hatching, the crop will be found as described, and in its cavity pieces of white curd mixed with some of the common food of the pigeon, such as barley, beans, &c.

"If we allow certain of the parents to feed the brood, the crop of the young pigeons, when examined, will be discovered to contain the same kind of curdled substance as that of the old ones, which passes from them into the stomach, where it is digested.

"The young pigeon is fed for a little time with this substance only, as about the third day some of the common food is found mingled with it; as the pigeon grows older the proportion of common food is increased; so that it is seven, eight, or nine days old, before the secretion of the curd ceases in the old ones, and of course no more will be found in the crop of the young ones.

"I have called this substance curd, not being literally so, but resembling that more than anything I know; it may, however, have a greater resemblance to curd than we are perhaps aware of, for neither this secretion, nor curd from which whey has been pressed, seems to contain any sugar, and does not run into the acetous fermentation. The property of coagulating is confined to the substance itself, as it produced no such effect when mixed with milk.

"This secretion in the pigeon, like all other animal substances, becomes putrid

by standing, though not so readily as either blood or meat, it resisting putrefaction for a considerable time; neither will curd much pressed become putrid so soon as either blood or meat."

The young are fed until they have attained nearly their full size and perfect plumage, so that they are capable of fluttering after their parents, and flapping them with their wings until they disgorge the contents of their full crops into the throats of their greedy young.

Four species of the genus *Columba* inhabit Great Britain. They are:—

1. The Cushat, which is also known as the Quest, Ring Dove, or common Wood Pigeon, the *Columba palumbus* of ornithologists. This is the largest of our native species, and is readily distinguished by the two white spots on the neck, the white patch on the wings, and the reddish purple colour of the breast and neck. The Cushat is an arboreal species, nesting and roosting in trees, and is not found on the coasts or in rocky treeless districts. This species does not possess the capability of being domesticated; even when eggs of the Cushat have been obtained and hatched under domesticated pigeons, the birds so reared have always betaken themselves to the woods on acquiring their full powers of flight.

2. The Rock Dove, or Blue Rock Dove, the *Columba livia* of scientific treatises. This is distinguished from the other English species of a blue colour by its having the lower half of the back white. This is the original of our domesticated breeds, and is described at length in the following chapter.

3. The Blue-backed or Stock Dove, *Columba Ænas*. This species was, until the time of Brisson and Temminck,* confounded with the last named, and the title of stock dove was bestowed upon it, as it was supposed to be the origin or wild stock of our domestic breeds. This idea is now known to be erroneous, for the bird is not capable of domestication. The Stock Dove usually breeds in the hollows of decayed trees, sometimes in deserted rabbit burrows; and recently Mr. Harting has ascertained that in some localities it makes its nest on the cliffs of the sea-coast, in situations somewhat resembling those selected by the last species.

4. The Turtle Dove, *Columba turtur*, the smallest of our British species, is a very elegant little bird, of a greyish-brown colour, having on the neck two large black spots, the feathers of which are tipped with white. The Turtle is too delicate to withstand the rigours of our winter, and departs for warmer latitudes in September.

In many of the treatises that have been published on pigeons, the existence of another distinct species, the Dovehouse Pigeon, *Columba affinis*, has been mentioned; but there is no doubt that this is a mere variety of the *Columba livia*, and that it has no title whatever to be regarded as a distinct species.

Another species of dove is well known in England, though not a native of Britain—namely, the Collared Dove, *Columba risoria*—characterized by its pale cream colour, which is only varied by a black ring or collar on the neck. This

* Histoire Naturelle Générale des Pigeons et des Gallinacés, par C. J. Temminck, 1813.

bird has been domesticated from very remote periods. By the ancients it was sacred to Venus, and it was unquestionably the dove alluded to in the Old and New Testaments. It breeds freely in confinement, even when in cages of moderate size. Although a native of warm climates, it may be allowed its liberty in the southern parts of England, and may occasionally be seen flying with domesticated pigeons; but it is apt to be killed by the cold of very severe winters.

A purely white variety of this species, destitute of the black collar, is not uncommon in confinement.

All these five species are perfectly distinct from each other; if a pair be matched, the male being of any one of these species and the female of another, they will not unfrequently breed, but the offspring are invariably sterile hybrids or mules.

CHAPTER II.

THE ROCK DOVE.

THE Blue Rock Dove, *Columba livia*, being the origin from whence all our numerous domestic varieties have sprung, demands at our hands a full description of its structure, markings, and habits. It is not the good fortune of many naturalists to have had similar opportunities of observing this beautiful bird in its feral condition to those that fell to the lot of that ardent ornithologist Macgillivray. As his description of the Rock Dove is unquestionably the best that has ever appeared, we shall freely avail ourselves of it in this chapter, and this the more readily as the admirable work from which we extract, "The History of British Birds," has been long out of print.

"The Rock Dove," writes Macgillivray, "is a very beautiful bird, although its style of colouring is less gaudy than that of many foreign species. It is of a compact form, the body being rather full, the neck rather short, the head small, the feet short and strong, the wings rather long, the tail of moderate length.

"The bill is short, slender, and straight; the nasal membrane scurfy, the outline of the upper mandible straight for half its length, then arched and turned down; the edges soft at the base, the tip compressed, with the edges inflected; the lower mandible weak at the base, its sides nearly erect, the edges towards the end sharp, and the tip obtuse. Both mandibles are deeply concave internally. The mouth is only four-twelfths of an inch across. The tongue is very slender, seven and a half-twelfths in length, emarginate at the base, horny towards the end, and pointed.

"The eyes are rather small; the eyelids bare, and having in their vicinity a bare space of considerable extent. The nostrils are linear, wider anteriorly, two and a half-twelfths long. The aperture of the ear is roundish or obliquely oblong, a line and a half in diameter.

"The tarsi, which are very short, and feathered anteriorly one-third down, have five entire and two lower divided scales, their hind part soft, without scales, but scurfy. The first toe has six, the second eight, the third fourteen, the fourth eleven scales. The claws are arched in the third of a circle, compressed, rather sharp.

"The plumage is generally compact and short; on the abdomen downy and blended. The feathers are mostly ovate and rounded; those of the lower part of the neck all round have their filaments flattened and shining. The wings are rather long and pointed; the primaries, or first ten flight feathers, are tapering;

the second is the longest, the first almost equal in length, the third considerably shorter; the secondaries are twelve in number, short, and end obliquely. The tail is straight, slightly rounded, the feathers broad and abruptly rounded.

"The horny part of the bill is brownish-black. The iris of the eye is bright yellowish-red; the bare space around the eye flesh-coloured. The tarsi and toes are carmine-purple; the claws dark greyish-brown or black.

"The general colour of the plumage is light greyish-blue, the lower parts being as deeply coloured as the upper. The middle of the neck all round is splendent with green, its lower part with purplish-red. The lower part of the back and the upper part of the sides, from near the shoulders to near the tail, are pure white, as are the lower wing-coverts and axillaries. The primaries and their coverts are brownish-grey on the outer web, the former dusky towards the end, as are the outer secondaries. There are two broad bars of black on the wing, one extending over the six inner secondary quills, the other over the secondary coverts, the outer two excepted. The tail has a broad terminal band of black, and the outer web of each lateral feather is white. The downy part of the feathers is greyish-white, excepting on the white part of the back, where it is pure white.

"Length to end of tail 14 inches; to end of wings when closed $12\frac{3}{4}$; extent of wings 27; wing from flexure $9\frac{3}{4}$; tail 5; bill along the back $\frac{9}{12}$, along the edge of lower mandible 1; tarsus $1\frac{8}{12}$; first toe $\frac{1}{2}$, its claw $\frac{4}{12}$; second toe $\frac{9}{12}$, its claw $\frac{5}{12}$; third toe $1\frac{8}{12}$, its claw $5\frac{1}{2}$ twelfths; fourth toe $\frac{11}{12}$, its claw $4\frac{1}{2}$ twelfths.

"The only external differences which the female presents consist of her being a little smaller, and having the shining colours on the neck less extended.

"Length to end of tail $13\frac{1}{2}$ inches; extent of wings $26\frac{1}{2}$; wing from flexure $9\frac{1}{2}$; tail $4\frac{3}{4}$; bill along the back $\frac{9}{12}$, along the edge of lower mandible 1; tarsus $1\frac{8}{12}$; first toe $\frac{1}{2}$, its claw $\frac{4}{12}$; second toe $\frac{9}{12}$, its claw $\frac{5}{12}$; third toe $1\frac{8}{12}$, its claw $5\frac{1}{2}$ twelfths; fourth toe $\frac{11}{12}$, its claw $4\frac{1}{2}$ twelfths.

"Among the vast numbers of undoubtedly wild birds of this species which I have seen, I have not observed any remarkable variations of form or colour. The dark-coloured, purple, and white individuals, which are occasionally seen consorting with the wild doves, or residing in maritime caves or rocks, are in all probability domestic birds that have betaken themselves to the original mode of life of the species. As the moulting season approaches, the blue tint becomes much paler, especially on the wings. The outer primary quills are often tinged with brown, in consequence of the bird's striking the ground with its wings when commencing its flight; and the bill is frequently more or less crusted with earth or mud. Individuals vary in length from 13 to 14 inches, and in the extent of their wings from 24 to 27.

"At the western extremity of Ben Capval, a promontory of one of the remote Hebrides, is a vast mass of rock, broken by gaps and fissures into projecting crags and sloping shelves, and looking as if originally produced by the separation of a portion of the mountain which had sunk into the depths of the ocean that heaves

its billows against the rugged shores. At the summit is an aggregation of angular fragments, the termination of an elevated ridge, and midway down is a green slope, horizontally traversed by several paths formed by the sheep, which at all seasons, but especially in spring, are fond of rambling among the crags, in search of fresh pasturage. The declivity terminates on the sinuous and angular edge of precipices several hundred feet in height, near the upper part of which a pair of White-tailed Eagles have fixed their abode, while the crevices are here and there peopled by starlings. The shelves of those rocks are totally inaccessible by ordinary means, although an adventurous shepherd or farmer sometimes descends on a rope held by half-a-dozen people above, to destroy an eagle's nest, or rescue a sheep which has leaped upon some grassy spot, and is unable to reascend; but on one side, by a steep and slippery descent in a fissure, one may penetrate to the base, where he discovers a hole in the rock barely large enough to admit him on his hands and knees. This hole is the entrance of a narrow passage in a crevice roofed with fallen blocks. On one hand is a recess, in which a person might recline at full length, and which was actually employed as a bed by Mr. Macleod, of Berneray, after the battle of Culloden; and a few yards farther, the crevice opens into an irregular cave communicating seaward with the open air, and formed by a rent in the rock, filled above with large blocks that seem ready to fall. The heavy surges of the Atlantic continually dash against a heap of stones, which partially block up the mouth of the cave. On this heap the Crested Cormorants nightly repose, and in summer rear their young. The little shelves and angular recesses of the roof and upper parts of the cavern are tenanted by pigeons, the light blue of whose plumage has a beautiful appearance, relieved as they are by the dark ground of the moist rocks, and the soft murmur of whose notes comes upon the ear with a pleasing though melancholy effect. There, and in other places of a similar nature, have I watched these beautiful birds, until I rendered myself in some measure familiar with their habits; and amid such wild and desolate scenes have I loved to wander and indulge in the not less wild imaginings of a spirit that desired to hold converse with the unseen but ever present Spirit of the universe.

"At early dawn the pigeons may be seen issuing from these retreats in straggling parties, which soon take a determinate direction, and meeting with others by the way, proceed in a loose body along the shores until they reach the cultivated parts of the country, where they settle in large flocks, diligently seeking for grains of barley and oats, pods of the charlock, seeds of the wild mustard, polygona, and other plants, together with several species of small shell-snails, especially *Helix ericetorum* and *Bulimus acutus*, which abound in the sandy pastures. When they have young, they necessarily make several trips in the course of the day; but from the end of autumn to the beginning of summer they continue all day in the fields. In winter they collect into flocks, sometimes composed of several hundred individuals; and, as at this season they are anxious to make the best use of the short period of daylight, they may easily be approached by a person acquainted

with the useful art of creeping and skulking. In general, however, they are rather shy, and very seldom allow a person to advance openly within sixty or seventy yards. It is not uncommon to kill four or five at a shot; and on this subject I have heard many marvellous tales in the Hebrides; but as I intend to confine my relation to my own experience, I can only state that, during a snow-storm, when the pigeons had assembled in a corn-yard remote from houses, I once killed twenty-three at three successive shots; that is, nine for the first, eight for the next, and six for the third. Two or three wounded made their escape to the rocks in the immediate neighbourhood.

"The manners of the Rock Doves are similar to those of our domestic pigeons, which are evidently descended from individuals of this species. When searching for food, they walk about with great celerity, moving the head backwards and forwards at each step, the tail sloping towards the ground, and the tips of the wings tucked up over it. In windy weather they usually move in a direction more or less opposite to the blast, and keep their body nearer to the ground than when it is calm, the whole flock going together. When startled, they rise suddenly, and by striking the ground with their wings, produce a crackling noise. When at full speed they fly with great celerity, the air whistling against their pinions. Their flight is very similar to that of the Ringed and Golden Plovers, birds which in form approach very nearly to the pigeons, as may be seen more especially on comparing their skeletons. They usually alight abruptly when the place is open and clear, and, if very hungry, immediately commence their search; although on alighting they frequently stand and look around them for a few moments. On other occasions, however, they fly over the field in circles, descending gradually. When flying from the rocks to the places where they procure their food, and when returning in the evening, they do not mount high in the air; and when passing over an eminence they fly so low as almost to touch it. When the wind is very high, and their course is against it, they fly in the same manner, taking advantage of the shelter. It used to afford me much pleasure, and probably would be interesting to most people, to observe, from one of the wild headlands of Harris, the pigeons flying swiftly and silently towards their homes, along the cliffs, while every now and then a string of cormorants, gannets, or guillemots would come up, and a straggling flock of gulls pursue their route in a desultory manner.

"The notes of the Rock Dove resemble the syllables *coo-roo-coo* quickly repeated, the last prolonged. Its nuptials are celebrated with much cooing and circumambulation on the part of the male. A love-scene among the rocks is really an interesting sight. Concealed in a crevice or behind a projecting cliff, you see a pigeon alight beside you, and stand quietly for some time, when the whistling of pinions is heard, and the male bird shoots past like an arrow, and is already beside his mate. Scarcely has he made a rapid survey of the place, when, directing his attention to the only beautiful object which he sees, he approaches her, erecting his head, swelling out his breast by inflating his crop, and spreading

his tail, at the same time uttering the well-known *coo-roo-coo*, the soft and somewhat mournful sounds of which echo among the cliffs. The female, shy and timorous, sits close to the rock, shifting her position a little as the male advances, and sometimes stretching out her neck, as if to repel him by blows. The male continues his strutting and cooing, until the female, inadvertently coming upon the edge of the shelf, flies off to the dark recesses of the neighbouring cave, where she has scarcely alighted when her lover is again by her side.

"Matters go on in this manner, and in the meantime a nest is gradually formed, which consists of withered stalks and blades of grass or other plants, not very neatly arranged, but disposed so as to answer the intended purpose. Two beautiful white eggs, of an elliptical form, one an inch and four-twelfths in length, an inch and one-twelfth in breadth, the other a little shorter, are then deposited, and in due time the young make their appearance. In about three weeks the young come abroad, and after being fed and instructed by their parents for some days, are left to shift for themselves.

"The old birds soon repair their nest, and rear another brood. I cannot speak with certainty as to the precise number of broods raised in the course of a season, but I know that there are at least two. The first eggs are laid about the middle of April, and the latest young are seen about the end of September. It appears to me probable, from circumstances which have come under my observation, that the same nest is used for different broods; and it is commonly believed, and not improbable, that these birds pair for life. The young are fed by their parents, who, applying their open mouth to that of the nestling, the mandibles of which enter the pharynx, force up the food from their crop, so as to be within reach of the bill of the young, which all the while flaps its wings, and utters a low cheeping note, indicative of its eagerness to have its wants supplied.

"There can be no reasonable doubt that the Rock Dove is the original of our domestic pigeons, in fact the true Stock Dove, although that name has been given to another species. Individuals of the domesticated race which cannot be distinguished from those of the wild, are of common occurrence; and, however highly varieties may be prized, the blue, white-backed race is certainly the most beautiful. I have seen in the Hebrides a few house-pigeons which had deserted and lived among the wild doves. In various places along the east coast of Scotland, as at the Cove, near Aberdeen, at Dunottar Castle, near Stonehaven, and the Bass Rock, in the Firth of Forth, I have observed wild pigeons among the rocks. Some of them presented the pure unvarying tints of the Rock Dove, while others were of different shades of blue or purple. These were in all probability domestic pigeons that had run wild, and their descendants. The best places for studying the habits of the species, or for procuring specimens, are the islands of Lewis, Harris, Uist, Barray, Skye, the northern coasts of Scotland, the Shetland and Orkney Islands.

"The boys in the Outer Hebrides often attempt to rear young doves, but their cares are seldom continued long enough. They introduce the food, dry barley

grain, by the side of the mouth, which occasions inflammation and swelling of the basal margins of the mandibles. When a boy, I had a young Rock Dove, which I fed for some time in this manner, until the bill became tumid and sore, when, in consequence of advice from a friend, I took a mouthful of barley and water, and introduced the pigeon's bill, when the bird soon satisfied itself, flapping its wings gently and uttering a low cry all the while. It grew up vigorously, shed the yellow down-tips of its feathers, and began to fly about. Towards the middle of autumn it renewed its plumage, and assumed the bright and beautiful tints of the adult male. Whenever I escaped from the detested pages of Virgil and Horace, the pigeon was sure to fly to me, and sometimes alighted on my head or shoulder, directing its bill towards my mouth, and flapping its wings. Nor did it ever fly off with the wild pigeons, which almost every day fed near the house, although it had no companions of its own species. At length some fatal whim induced it to make an excursion to a village about a mile distant, when it alighted on the roof of a hut, and the boys pelted it dead with stones. Long and true was my sorrow for my lost companion, the remembrance of which will probably continue as long as life. I have since mourned the loss of a far dearer dove. They were gentle and lovely beings; but while the one has been blended with the elements, the other remains 'hid with Christ in God,' and for it I 'mourn not as those who have no hope.'

"The young, which at first are covered with loose yellow down, are when fledged of the same colour as the old birds, the head and neck, however, being of a dull purplish-blue, without the bright green and purple tints of the old, and the wings tinged with brown. At the first moult, they acquire their full colouring, only that a little brown remains on the edge of the wings.

"They are easily tamed when taken young; yet it is said that when not particularly attended to, and supplied with abundance of food, they are more apt to fly away and join the flocks of their own species, than the common tame pigeon. They are seen in large flocks in the winter and spring months, when they frequent barn-yards much for food, especially when the ground is covered with snow. I have also seen them in large groups in the harvest-time, when that happened late in the year.

"The crops of three obtained from Shetland were examined and found to be completely filled, up to the throat; that of the first with a mixture of barley and oats of the same species as mentioned above, namely, bear and the small oat, with a considerable number of what appeared to be eggs of snails or Helices, being globular, dusky, a twelfth of an inch in diameter, their envelope membranous, and their contents a whitish fluid of the consistency of pus; along with these substances were fragments of pods of *Raphanus Raphanistrum*. The crop of the second was crammed with oats, among which were a few seeds, apparently of polygona, and fragments of charlock pods. That of the third contained oat-seeds exclusively. In the gizzards were numerous fragments of quartz, generally white, but some tinged with chlorite, and a few of felspar and either gneiss or granite.

They were for the most part highly polished, and did not exceed two-twelfths of an inch in diameter.

"The number of oat-seeds in the crop of the second amounted to 1,000 and odds, and the barley-seeds in that of the other female were 510. Now, supposing there may be five thousand wild pigeons in Shetland, or in Fetlar, which feed on grain for six months every year, and fill their crops once a day, half of them with barley, and half with oats, the number of seeds picked up by them would be 229,500,000 grains of barley, and 450,000,000 grains of oats;—a quantity which would gladden many poor families in a season of scarcity. I am unable to estimate the number of bushels, and must leave the task to the curious. What is the number of pigeons, wild and tame, in Britain; and how much grain do they pick from the fields and corn-yards? It is probable that were the quantity of seeds of the cereal plants, which all the granivorous birds in the country devour annually, accurately known, it would prove much higher than could be imagined; yet by far the greater part could be of no use to man, were all the birds destroyed, it being irrecoverably dispersed over the fields."

Writing from Iona, Mr. Henry D. Graham states:—

"The Wood Pigeon (*Columba palumbus*) is unknown upon our rocky woodless shores, but its absence is compensated for by great numbers of a smaller species—the Rock Dove.

"The granite cliffs on the south of Mull, the basaltic crags of Staffa, and lofty precipices of trap rock upon the adjacent islands, are all perforated by innumerable caverns of every imaginable size and shape; from the well-known majestic hall of Fingal, resounding with the sullen booming of ever-rolling waves, down to the little fairy grotto, whose cool white shell-sand is scarce dimpled by the sparkling ripples of the sheltered sea. Some of these caves are grand, and of lofty dimensions, with no floor but the deep blue water which heaves to and fro through their huge frowning portals; others are romantic and picturesque, their rocks covered with many-coloured lichens, and their dark apertures fringed with shaggy heather and ivy, amongst which is browsing a wild mountain goat, with huge horns and beard. But many more of these caverns are horribly gloomy and forbidding—deep black dens, extending far beyond the reach of the light of day, stretching into the very bowels of the adamantine cliff: the air smells dank and foul, and the walls are dripping with unwholesome slime. It is dangerous to explore them further without striking a light, as you may meet deep holes and black pools of water; and it is not unlikely but you may see the twinkling eyes of an otter peeping out through the gloom. These caves generally have legends attached to them, such as of fugitive clansmen hiding from the pursuit of the avenger of blood; of wholesale deeds of murder, or of wild scenes of diablerie; and the names of the *Cave of Death*, the *Pit of Slaughter*, and the *Hobgoblin's Den*, are often met with, and human bones actually are often discovered in them.

"These haunts of bygone murderers, smugglers, and outlaws are now only tenanted by Rock Doves, the emblems of innocence. They may be seen perpetually flitting in and out, some parties going off to feed, others returning to rest; a few birds sitting about the entrance, pluming themselves in the sunshine, or quietly dozing upon a sheltered ledge of rock. Upon a near approach, the cooing of the old birds may be heard, together with the querulous *peep-peeping* of the young demanding food, and the occasional stir of wings; but upon any alarm being given, the voices are immediately silenced, the clang and whir of wings reverberate from the profundity of the cave, and out pours a long stream of downy bosoms and silver wings, which swiftly skim along the surface of the sea, and disappear round the next headland. In Iona alone (though but a small island), we have as many as nine or ten caves frequented by pigeons; and in nearly every island of the Hebrides, there is sure to be one cave called, *par excellence*, 'Ua' Caloman,' the Pigeon Cave.

"I believe this dove is only found upon the coast, though I am not aware what attraction the sea-shore has for it; certainly, with us, it exclusively inhabits the sea-caves, and never goes far inland. In the winter I have once or twice seen them sitting upon the rocks at low water, but I hardly think they were looking for food. They feed upon land snails—some small species which at certain times is found in considerable variety and vast abundance, spread over the low sandy pastures which skirt the sea. The stubbles, the newly-sown fields, and the stack-yards, are their principal resorts for food, and their crops are invariably to be found well distended with grain, though in winter it is difficult to account for their getting such good supplies, after the stubbles are picked clean, and the stack-yards cleared. They must sometimes go great distances for their daily food; those which inhabit the small islands must, of course, always come to the mainland for the supply of grain—some a great distance. When a large flock is suddenly raised while feeding in a corn-field, after wheeling up in the air, it breaks up into smaller parties, which dart off in various directions for their homes; some across the seas, others to the nearer caves.

"They seem to be migratory, to a certain extent in quest of food, at seed-time and harvest, if, as is often the case, the island crops are a little earlier than those on the mainland; then our fields are covered with those petty plunderers, and at night the caves are filled with roosting birds, which remain about the island as long as food is very plentiful, and then decamp. I think, however, that individual birds are a good deal in the habit of frequenting the same localities, and roosting in the same cave, until driven off by some cause. I have watched marked birds doing so; especially last summer I was observing a large white male pigeon, which had evidently escaped from the cote: he took to himself a little wild mate, and reared a brood in one of the caves. I made a duty of destroying his family, which was easily done, as they were marked birds; but he himself, though of such a conspicuous colour, always contrived to escape. He became very wary, from being pursued, and I remarked that he always frequented the same cave, till

he received a random shot, after which I lost sight of him for a considerable time; but I found him at last, located upon the other side of the island, where he remained till his death.

"The Rock Dove's nest is made up of small sticks or heather, or dried sea-weed, and is lined with dried grass: the situation selected is any little ledge or cleft within the sheltering bosom of a rocky cavern. The eggs are two in number, generally producing male and female birds. The time for commencing their nestling seems rather variable: this year I found some young ones already hatched on the 2nd of April, while other pairs were only erecting their nests. They have several broods in the year, and their eggs may be found unhatched as late as September.

"It is rather a timid bird if often shot at, but is by no means a shy or wary bird: in the fields the feeding flocks may often be openly approached, or the most barefaced attempts at stalking them will succeed. In the breeding season the hen will sit on the nest till approached, and never deserts it, though often disturbed, and her nest and eggs handled. She does not seek for inaccessible ledges to build her nest on, but takes any spot which offers, sometimes even the very floor of the cave. If her eggs are taken out, she will probably replace them; and if her young are taken when half-fledged, she seems glad to get them so soon off her hands, and at once prepares for rearing her second brood. The young birds instantly become quite tame, and reconciled to hand feeding; indeed, as they grow up, their impertinent boldness becomes rather troublesome. They readily take to the dovecot, and pair with the tame pigeons; even with fancy breeds, such as Fantails, etc. If a pair of real wild ones breed in confinement, their progeny at once show signs of diverging in colour from the natural uniform of their wild ancestry; the young birds are of a dark slate-colour in their first plumage, though they have the same markings as the adult birds. The male is recognized from his mate by a slight superiority of size, and more lustrous plumage.

"In a gastronomic point of view, these pigeons are one of the most valuable kind of birds which frequent our coasts. They are nearly always fat and in good condition, are numerous and always to be procured; besides, being fed constantly upon our barley and oats, one can feel no compunction in levying a tribute upon them in return.

"They are easiest shot while feeding abroad in the fields: at the caves, a shout will cause them to fly out, but with such suddenness and swiftness, that it requires something of a pigeon-shooter's knack to succeed in hitting them quick enough. An indifferent shot (after knocking over one or two which may be incautiously napping upon the outer ledges) had better conceal himself either in the cave or in a good position above it: in a short time the bird is sure to come darting swiftly for its accustomed haunts, but upon catching a glimpse of a lurking foe, he stops his rapid career, flutters his pinions for a moment, uncertain what to do; that momentary indecision is fatal—down he falls!—while a roar

of a volcano bellows along the vaulted roof, and the cave is filled with wreaths of sulphureous smoke.

"Writing from Iona, I must not conclude without reminding you of the name of our patron saint, St. Columba, the Dove that first brought to this land the olive branch of mercy."

CHAPTER III.

THE ORIGIN OF THE VARIETIES OF PIGEONS.

HAVING treated at length of the structure and habits of the Rock Dove, it is now desirable to enter upon the consideration of the production of the numerous varieties of Pigeons that are known to naturalists and fanciers, and which are regarded by all who have carefully studied the subject as being descended from the one wild species which has been so fully described in the last chapter.

The Rock Dove is one of those animals that is capable of being domesticated by man. The opinion that the majority of animals could be domesticated is one that is very generally prevalent, but has no foundation whatever in fact. For example, if a pair of eggs from the nest of a wild Blue Rock are placed under a domestic pigeon that has been sitting the same length of time as the birds from which the eggs were taken, the latter will produce a pair of Blue Rocks, that will become domesticated, being attached to their *domus*, or home.

On the other hand, if a pair of eggs from the Stock Dove (*Columba œnas*), or the Ring Dove (*Columba palumbus*), be treated in a precisely similar manner, the birds so produced will not become domesticated. There is precisely the same difference between the fowl and the pheasant. The former is so attached to its home that the return of the brood at night has given rise to the proverb that "Curses, like chickens, always come home to roost." The pheasants, on the other hand, may have been tame-bred for twenty generations, and yet are no nearer true domestication than their wild progenitors.

The ease with which the Rock Dove is domesticated may be gathered from the anecdote so exquisitely told by Macgillivray in the last chapter (page 20). This capability of perfect domestication is one of the conditions necessary to the production of distinct and numerous varieties.

It is well known that all animals, even those living in perfectly natural conditions, are subject to certain variations, such as those of colour, form, size, &c. Thus we have not unfrequent examples of white moles, blackbirds, and other animals; and changes of form and size are equally common.

In birds as extensively distributed as the Rock Dove (*Columba livia*), slight local or geographical variations constantly occur. Thus, in India, all the wild Blue Rocks have ash-coloured feathers over the rump, whereas the European birds have, as is well known, white rumps; and, as is well known to most fanciers, this white rump is one of the most difficult points to "breed out" in any of our Blue varieties; whereas the Blue breeds derived from the Indian birds have, as might be expected,

blue rumps. The exact character of this local variety is so well described by Jerdon, in his valuable and accurate work on the "Birds of India," that we have much pleasure in quoting the account. He writes :—

"The common Blue Pigeon differs from the *Columba livia* of Europe only in having an ash-coloured instead of a pure white rump. This, however, appears to be constant, and as Blyth remarks, is also always observable in domesticated varieties in this country (India), when these assume the normal colouring.

"The Blue Pigeon of India is one of the most common and abundant birds throughout the country, congregating in large flocks, and breeding wherever they can find suitable spots. They are most partial to large buildings, such as churches, pagodas, mosques, tombs, and the like; frequently entering verandahs of inhabited houses, and building in the cornices. Holes in walls of cities or towns, too, are favourite places; and in some parts of the country they prefer holes in wells, especially, I think, in the West of India, the Deccan, &c. In default of such spots, they will breed in crevices and cavities of rocks, caverns and sea-side cliffs; and I have often noticed that they are particularly partial to rocky cliffs by waterfalls. The celebrated falls of Gaiss-oppa are tenanted by thousands of Blue Pigeons, which here associate with the large Alpine Swift. It is more rare in forest countries generally than in the open country. It extends from Ceylon throughout India to the Himalayas, and also to Assam, Sylhet, and Burmah. It is doubtful if it occurs in Affghanistan, or in other parts of Central Asia. These pigeons are held in favour by most natives, and almost venerated by some; and if they build in the house of a native, he considers it a most fortunate omen.

"They are, however, very destructive to grain, assembling in vast flocks in the cold weather, and, in general, the natives do not object to their being shot. They are undoubtedly the origin of most of the domestic pigeons of India."

Another local variety exists in the South of England, a third in Italy, a fourth in Africa. These all vary slightly in their markings; thus, the English variety has a chequered instead of a pure blue wing. These were formerly regarded by some naturalists as distinct species, but are now universally regarded as mere local variations. As the authority of the eminent naturalist, Mr. Blyth, has been quoted by Dixon and others in support of the view that these races constitute distinct species, we have much pleasure in reproducing a short extract from the proceedings of the Dublin Natural History Society for 1866, in which Mr. Blyth stated :—

"With regard to the Spotted Pigeon, occurring in the South of England, which he had been the first to distinguish as a particular race, by the name *Columba affinis*, he had now been long aware that it was no other than the common dovecote race, which was bred in multitudes, to be turned out at pigeon matches. There are many local races, or sub-species, each of which occupies its own area upon the earth's surface: thus there is a *Columba turretum* (so called) in Italy, and a *Columba intermedia* in India, and the Indo-Chinese countries, the common Blue Pigeon of that region, which barely differs from the European *Columba livia*,

except in constantly wanting the white above the tail. He had watched great flocks of these birds, as especially those crowding about the many suitable nooks of the great mosque of Aurungzebe, at Benares, looking down upon them from the top of one of the two famous lofty minarets of that edifice, and had observed in them no variation of colour; but this race particularly frequents large buildings equally with rocky precipices, whether inland or by the sea-side, as also old ruinous walls; and in parts of the country where such do not occur, it breeds abundantly far down the shafts of deep wells; and in towns and villages it merges insensibly into domesticity; and among the more or less domesticated individuals are very many that exhibit the spotted wing of the (so called) *Columba affinis*. He would, moreover, remark that among the domestic pigeons of India, it is as rare to see the white rump as is the reverse in Europe. In Middle Asia another cognate race exists in the *Columba rupestris* of Pallas, which occurs in Thibet and in the British province of Kemaon. High upon the Himalayas there is the *Columba leuconota*, which is another true rock pigeon, though differing more from the rest in plumage; and in Abyssinia, again, there is a peculiar corresponding race of Blue Pigeon, which is denominated *Columba schimperi;* as in Senegal there is even another, denominated *Columba gymnocyclos*, by Mr. G. R. Gray. The decided use of applying names to such distinguishable geographical races was, that each of them could thus be severally and definitively referred to by its special designation. This was a practical advantage, wholly irrespective of the zoological value to be attached to such appellation, about which there would of course be difference of opinion. The whole of the races mentioned, Mr. Blyth fully believed, would intermingle in domesticity, and produce completely fertile hybrids, or, should he not rather call them sub-hybrids."

There can be no doubt, as Mr. Blyth surmises, that all these races will intermingle with the greatest readiness, and produce perfectly fertile progeny, which can only be regarded as mongrels between different varieties or breeds, and not as hybrids between two distinct species.

Variations, however, of a much more striking character, not unfrequently occur in single cases of wild birds; but when they take place in a state of nature, they are not very likely to be propagated, inasmuch as a bird with any variation of plumage or form will almost of necessity mate with one of the ordinary character, the offspring again do the same, so that in a very few generations all trace of any singular variation is apt to be lost.

In a state of domesticity, however, any singular variation would be noticed, and, by careful selection of breeding stock, would be perpetuated, and even increased. In this manner all the different breeds have been produced. Some Indian fanciers in distant ages (for pigeons have been kept as domestic pets many hundreds of years in India), observing that certain pigeons were produced with extra feathers in the tails, mated them together, and again selecting those of the offspring that showed the desired characters, succeeded eventually in creating the Fantail. Some short time since a pigeon was forwarded to the writer, with a second or supplementary

tail, consisting of three quill feathers, growing out between the shoulders. Unfortunately, the bird had been shot, otherwise there would have been but little difficulty in establishing a race of two-tailed Pigeons from this singular variation. It is needless to go through all the varieties in succession, for the same principle applies to the production of each. The recurved feathers of the Jacobin and other breeds, the long beak of the Carrier, the length of plumage and limb in the Pointer, &c., &c., all owe their origin to natural variations which have been perpetuated and intensified by the careful selection exercised by the breeders through many successive generations.

We know that this view is widely opposed to the general ideas of persons who have not very carefully studied the subject, and would therefore call attention to the following passage from "The Origin of Species," by Mr. Charles Darwin, in which the facts bearing on this question are very fully stated:—

"Great as the differences are between the breeds of pigeons, I am fully convinced that the common opinion of naturalists is correct, namely, that all have descended from the Rock Pigeon (*Columba livia*), including, under this term, several geographical races or sub-species, which differ from each other in the most trifling respects. As several of the reasons which have led me to this belief are in some degree applicable in other cases, I will here briefly give them.

"If the several breeds are not varieties, and have not proceeded from the Rock Pigeon, they must have descended from at least seven or eight aboriginal stocks; for it is impossible to make the present domestic breeds by the crossing of any lesser number: how, for instance, could a Pouter be produced by crossing two breeds, unless one of the parent-stocks possessed the characteristic enormous crop? The supposed aboriginal stocks must all have been Rock Pigeons, that is, not breeding or willingly perching on trees. But besides *C. livia*, with its geographical sub-species, only two or three other species of Rock Pigeons are known; and these have not any of the characters of the domestic breeds. Hence the supposed aboriginal stocks must either still exist in the countries where they were originally domesticated, and yet be unknown to ornithologists—and this, considering their size, habits, and remarkable characters, seems very improbable—or they must have become extinct in the wild state. But birds building on precipices, and good flyers, are unlikely to be exterminated; and the common Rock Pigeon, which has the same habits with the domestic breeds, has not been exterminated even on several of the smaller British islets, or on the shores of the Mediterranean. Hence the supposed extermination of so many species having similar habits with the Rock Pigeon seems to me a very rash assumption. Moreover, the several above-named domesticated breeds have been transported to all parts of the world, and, therefore, some of them must have been carried back again into their native country; but not one has ever become wild or feral, though the Dovecote Pigeon, which is the Rock Pigeon in a very slightly altered state, has become feral in several places. Again, all recent experience shows that it is most difficult to get any wild animal to breed freely under domestication; yet,

on the hypothesis of the multiple origin of our pigeons, it must be assumed that at least seven or eight species were so thoroughly domesticated in ancient times by half-civilized man, as to be quite prolific under confinement.

"An argument, as it seems to me, of great weight, and applicable in several other cases, is, that the above-specified breeds, though agreeing generally in constitution, habits, voice, colouring, and in most parts of their structure, with the wild Rock Pigeon, yet are certainly highly abnormal in other parts of their structure, we may look in vain throughout the whole great family of *Columbidæ* for a beak like that of the English Carrier, or that of the Short-faced Tumbler, or Barb; for reversed feathers like those of the Jacobin; for a crop like that of the Pouter; for tail-feathers like those of the Fantail. Hence it must be assumed, not only that half-civilized man succeeded in thoroughly domesticating several species, but that he intentionally or by chance picked out extraordinarily abnormal species; and, further, that these very species have since all become extinct or unknown. So many strange contingencies seem to me improbable in the highest degree.

"Some facts in regard to the colouring of pigeons well deserve consideration. The Rock Pigeon is of a slaty-blue, and has a white rump (the Indian sub-species, *C. intermedia* of Strickland, having it bluish); the tail has a terminal dark bar, with the bases of the outer feathers externally edged with white; the wings have two black bars; some semi-domestic breeds and some apparently truly wild breeds have, besides the two black bars, the wings chequered with black. These several marks do not occur together in any other species of the whole family. Now, in every one of the domestic breeds, taking thoroughly well-bred birds, all the above marks, even to the white edging of the outer tail-feathers, sometimes concur perfectly developed.

"Moreover, when two birds belonging to two distinct breeds are crossed, neither of which is blue or has any of the above-specified marks, the mongrel offspring are very apt suddenly to acquire these characters. To give one instance out of several which I have observed: I crossed some white Fantails, which breed very true, with some black Barbs, and it so happens that blue varieties of Barbs are so rare that I never heard of an instance in England,—and the mongrels were black, brown, and mottled. I also crossed a Barb with a Spot, which is a white bird with a red tail and red spot on the forehead, and which notoriously breeds very true. The mongrels were dusky and mottled.

"I then crossed one of the mongrel Barb-Fantails with a mongrel Barb-Spot, and they produced a bird of as beautiful a blue colour, with the white croup (rump), double black wing-bars, and barred and white-edged tail-feathers, as any wild Rock Pigeon! We can understand these facts, on the well-known principle of reversion to ancestral characters, if all the domestic breeds have descended from the Rock Pigeon. But if we deny this, we must make one of the two following highly improbable suppositions. Either, firstly, that all the several imagined aboriginal stocks were coloured and marked like the Rock Pigeon,

although no other existing species is thus coloured and marked, so that in each separate breed there might be a tendency to revert to the very same colours and markings; or, secondly, that each breed, even the purest, has within a dozen, or, at most, within a score of generations, been crossed by the Rock Pigeon. I say within a dozen or twenty generations, for we know of no fact countenancing the belief that the child ever reverts to some one ancestor removed by a greater number of generations. In a breed which has been crossed only once with some distinct breed, the tendency to reversion to any character derived from such cross will naturally become less and less, as in each succeeding generation there will be less of the foreign blood; but when there has been no cross with a distinct breed, and there is a tendency in both parents to revert to a character which has been lost during some former generation, this tendency, for all that we can see to the contrary, may be transmitted undiminished for an indefinite number of generations. These two distinct cases are often confounded in treatises on inheritance.

"Lastly, the hybrids or mongrels from between all the domestic breeds of pigeons are perfectly fertile. I can state this from my own observations, purposely made on the most distinct breeds. Now, it is difficult, perhaps impossible, to bring forward one case of the hybrid offspring of two animals *clearly distinct*, being themselves perfectly fertile. Some authors believe that long-continued domestication eliminates this strong tendency to sterility: from the history of the dog, I think there is some probability in this hypothesis, if applied to species closely related together, though it is unsupported by a single experiment. But to extend the hypothesis so far as to suppose that species aboriginally as distinct as Carriers, Tumblers, Pouters, and Fantails now are, should yield offspring perfectly fertile, *inter se*, seems to me rash in the extreme.

"From these several reasons, namely, the improbability of man having formerly got seven or eight supposed species of pigeons to breed freely under domestication; these supposed species being quite unknown in a wild state, and their becoming nowhere feral; these species having very abnormal characters in certain respects, as compared with all other *Columbidæ*, though so like in most other respects to the Rock Pigeon; the blue colour and various marks occasionally appearing in all the breeds, both when kept pure and when crossed; the mongrel offspring being perfectly fertile: from these several reasons, taken together, I can feel no doubt that all our domestic breeds have descended from the *Columba livia*, with its geographical sub-species.

"In favour of this view, I may add, firstly, that *C. livia*, or the Rock Pigeon, has been found capable of domestication in Europe and in India, and that it agrees in habits and in a great number of points of structure with all the domestic breeds. Secondly, although an English Carrier, or Short-faced Tumbler, differs immensely in certain characters from the Rock Pigeon, yet by comparing the several sub-breeds of these breeds, more especially those brought from distant countries, we can make an almost perfect series between the extremes of structure. Thirdly, those characters which are mainly distinctive of each breed; for instance,

the wattle and length of beak of the Carrier, the shortness of that of the Tumbler, and the number of tail-feathers in the Fantail, are in each breed eminently variable: and the explanation of this fact will be obvious when we come to treat of selection. Fourthly, pigeons have been watched and tended with the utmost care, and loved by many people. They have been domesticated for thousands of years in several quarters of the world. The earliest known record of pigeons is in the fifth Egyptian dynasty, about 3000 B.C., as was pointed out to me by Professor Lepsius; but Mr. Birch informs me that pigeons are given in a bill of fare in the previous dynasty. In the time of the Romans, as we hear from Pliny, immense prices were given for pigeons: 'Nay, they are come to this pass, that they can reckon up their pedigree and race.' Pigeons were much valued by Akber Khan in India, about the year 1600: never less than 20,000 pigeons were taken with the court. 'The monarchs of Iran and Turan sent him some very rare birds.' 'And,' continues the same courtly historian, 'his Majesty, by crossing the breeds, which method was never practised before, has improved them astonishingly.' About this same period, the Dutch were as eager about pigeons as were the old Romans.

"The paramount importance of these considerations, in explaining the immense amount of variation which pigeons have undergone, is obvious. We see how it is that the breeds so often have a somewhat monstrous character.

"It is also a most favourable circumstance for the production of distinct breeds, that male and female pigeons can be easily mated for life; and thus different breeds can be kept together in the same aviary."

The success of the fancier in perpetuating the different varieties of pigeons depends on the tendency in the young to reproduce the natural peculiarities of the parents. It is always to be remembered that variations occurring naturally are alone capable of being thus reproduced. Any artificial alteration has no effect on the offspring, even when the same alteration is produced in many successive generations. Thus, in some tribes of North American Indians, the custom of flattening the fore part of the skull has been constantly practised, but no child is ever born with this peculiarity. Many generations of horses have had their tails docked in obedience to the dictates of an absurd fashion, yet a breed of dock-tailed horses has not been produced. Game cocks have had their combs and wattles cut off for at least fifty generations, nevertheless, the young birds are always produced with these appendages of the full size.

The perpetuation of variations artificially or accidentally produced would be an evil of enormous magnitude. Were every accidental loss in the parent to be reproduced in the offspring, no race of animals would be free from defects that would go on increasing, generation after generation, and would ultimately result in the extinction of the species. If the loss of a limb was thus transmitted from father to son, the whole human race would, long ere this, have been a generation of maimed and helpless cripples.

On the other hand, any variation occurring naturally always has a tendency

to reproduce itself. Even those slight variations which constitute individual peculiarities are so constantly reproduced, that we look in children for what is termed "the family likeness" to their parents; and where there is any decided departure from the normal type, this has a still stronger tendency to reappear in the progeny of the individual. Among naturalists, this tendency to revert to the ancestral type is termed *Atavism*, from *Atavus*, an ancestor. Professor Huxley, in his Lectures on "The Phenomena of Organic Nature," has entered very fully into this subject, and he gives some striking illustrations of the mode in which varieties are established. He states:—

"One very remarkable case came under Réaumur's notice of a variation in the form of a human member, in the person of a Maltese, of the name of Gratio Kelleia, who was born with six fingers upon each hand, and the like number of toes to each of his feet. That was a case of spontaneous variation. Nobody knows why he was born with that number of fingers and toes, and as we don't know, we call it a case of 'spontaneous' variation. There is another remarkable case also. I select these, because they happen to have been observed and noted very carefully at the time. It frequently happens that a variation occurs, but the persons who notice it do not take any care in noting down the particulars, until at length, when inquiries come to be made, the exact circumstances are forgotten; and hence, multitudinous as may be such 'spontaneous' variations, it is exceedingly difficult to get at the origin of them.

"The second case is one of which you may find the whole details in the 'Philosophical Transactions' for the year 1813, in a paper communicated by Colonel Humphrey to the President of the Royal Society,—'On a New Variety in the Breed of Sheep,' giving an account of a very remarkable breed of sheep, which at one time was well known in the northern states of America, and which went by the name of the Ancon or the Otter breed of sheep. In the year 1791, there was a farmer of the name of Seth Wright in Massachusetts, who had a flock of sheep, consisting of a ram, and, I think, of some twelve or thirteen ewes. Of this flock of ewes, one at the breeding time bore a lamb which was very singularly formed; it had a very long body, very short legs, and those legs were bowed! I will tell you by-and-by how this singular variation in the breed of sheep came to be noted, and to have the prominence that it now has. For the present, I mention only these two cases; but the extent of variation in the breed of animals is perfectly obvious to any one who has studied natural history with ordinary attention, or to any person who compares animals with others of the same kind.

"Now let us go back to Atavism,—to the hereditary tendency I spoke of. What will come of a variation when you breed from it, when Atavism comes, if I may say so, to intersect variation? The two cases of which I have mentioned the history, give a most excellent illustration of what occurs. Gratio Kelleia, the Maltese, married when he was twenty-two years of age, and, as I suppose there were no six-fingered ladies in Malta, he married an ordinary five-fingered person. The result of that marriage was four children; the first, who was christened

Salvator, had six fingers and six toes, like his father; the second was George, who had five fingers and toes, but one of them was deformed, showing a tendency to variation; the third was Andrè, he had five fingers and five toes, quite perfect; the fourth was a girl, Marie; she had five fingers and five toes, but her thumbs were deformed, showing a tendency towards the sixth.

"These children grew up, and when they came to adult years, they all married, and of course it happened that they all married five-fingered and five-toed persons. Now let us see what were the results. Salvator had four children; they were two boys, a girl, and another boy: the first two boys and the girl were six-fingered and six-toed like their grandfather; the fourth boy had only five fingers and five toes. George had only four children: there were two girls with six fingers and six toes; there was one girl with six fingers and five toes on the right side, and five fingers and five toes on the left side, so that she was half and half. The last, a boy, had five fingers and five toes. The third, Andrè, you will recollect, was perfectly well-formed, and he had many children whose hands and feet were all regularly developed. Marie, the last, who, of course, married a man who had only five fingers, had four children: the first, a boy, was born with six toes, but the other three were normal.

"Now observe what very extraordinary phenomena are presented here. You have an accidental variation arising from what you may call a monstrosity; you have that monstrosity tendency or variation diluted in the first instance by an admixture with a female of normal construction, and you would naturally expect that, in the results of such an union, the monstrosity, if repeated, would be in equal proportion with the normal type; that is to say, that the children would be half and half, some taking the peculiarity of the father, and the others being of the purely normal type of the mother; but you see we have a great preponderance of the abnormal type. Well, this comes to be mixed once more with the pure, the normal type, and the abnormal is again produced in large proportion, notwithstanding the second dilution. Now, what would have happened if these abnormal types had intermarried with each other? that is to say, suppose the two boys of Salvator had taken it into their heads to marry their first cousins, the two first girls of George, their uncle? You will remember that these are all of the abnormal type of their grandfather. The result would probably have been, that their offspring would have been in every case a further development of that abnormal type. You see it is only in the fourth, in the person of Marie, that the tendency, when it appears but slightly in the second generation, is washed out in the third, while the progeny of Andrè, who escaped in the first instance, escape altogether.

"We have in this case a good example of nature's tendency to the perpetuation of a variation. Here it is certainly a variation which carried with it no use or benefit; and yet you see the tendency to perpetuation may be so strong that, notwithstanding a great admixture of pure blood, the variety continues itself up to the third generation, which is largely marked with it. In this case, as I have said, there was no means of the second generation intermarrying with any but

five-fingered persons, and the question naturally suggests itself—What would have been the result of such marriage? Réaumur narrates this case only as far as the third generation. Certainly it would have been an exceedingly curious thing if we could have traced this matter any further; had the cousins intermarried, a six-fingered variety of the human race might have been set up.

"To show you that this supposition is by no means an unreasonable one, let me now point out what took place in the case of Seth Wright's sheep, where it happened to be a matter of moment to him to obtain a breed or raise a flock of sheep like that accidental variety that I have described—and I will tell you why. In that part of Massachusetts where Seth Wright was living, the fields were separated by fences, and the sheep, which were very active and robust, would roam abroad, and without much difficulty jump over these fences into other people's farms. As a matter of course, this exuberant activity on the part of the sheep constantly gave rise to all sorts of quarrels, bickerings, and contentions among the farmers of the neighbourhood; so it occurred to Seth Wright, who was, like his successors, more or less 'cute; that if he could get a stock of sheep like those with the bandy legs, they would not be able to jump over the fences so readily, and he acted upon that idea. He killed his old ram, and as soon as the young one arrived at maturity, he bred altogether from it. The result was even more striking than in the human experiment which I mentioned just now. Colonel Humphreys testifies that it always happened that the offspring were either pure Ancons or pure ordinary sheep; that in no case was there any mixing of the Ancons with the others. In consequence of this, in the course of a very few years, the farmer was able to get a very considerable flock of this variety, and a large number of them were spread throughout Massachusetts. Most unfortunately, however—I suppose it was because they were so common—nobody took enough notice of them to preserve their skeletons; and although Colonel Humphreys states that he sent a skeleton to the president of the Royal Society at the same time that he forwarded his paper, I am afraid that the variety has entirely disappeared; for a short time after these sheep had become prevalent in that district, the Merino sheep were introduced; and as their wool was much more valuable, and as they were a quiet race of sheep, and showed no tendency to trespass or jump over fences, the Otter breed of sheep, the wool of which was inferior to that of the Merino, was gradually allowed to die out.

"You see that these facts illustrate perfectly well what may be done if you take care to breed from stocks that are similar to each other. After having got a variation, if, by crossing a variation with the original stock, you multiply that variation, and then take care to keep that variation distinct from the original stock, and make them breed together, then you may almost certainly produce a race whose tendency to continue the variation is exceedingly strong.

"This is what is called 'selection;' and it is by exactly the same process as that by which Seth Wright bred his Ancon sheep, that our breeds of cattle, dogs, and fowls are obtained. There are some possibilities of exception, but still,

speaking broadly, I may say that this is the way in which all our varied races of domestic animals have arisen; and you must understand that it is not one peculiarity or one characteristic alone in which animals may vary. There is not a single peculiarity or characteristic of any kind, bodily or mental, in which offspring may not vary to a certain extent from the parent and other animals.

"A striking case of what may be done by selective breeding has been studied very carefully by Mr. Darwin,—the case of the domestic pigeons. I daresay there may be some among you who may be pigeon *fanciers*, and I wish you to understand that in approaching the subject, I would speak with all humility and hesitation, as I regret to say that I am not a pigeon fancier. I know it is a great art and mystery, and a thing upon which a man must not speak lightly; but I shall endeavour, as far as my understanding goes, to give you a summary of the published and unpublished information which I have gained from Mr. Darwin.

"Among the enormous variety,—I believe there are somewhere about a hundred and fifty kinds of pigeons,—there are four kinds which may be selected as representing the extremest divergences of one kind from another. Their names are the Carrier, the Pouter, the Fantail, and the Tumbler. In these large diagrams that I have here, they are each represented in their relative sizes to each other. This first one is the Carrier; you will notice this large excrescence on its beak; it has a comparatively small head; there is a bare space round the eyes; it has a long neck, a very long beak, very strong legs, large feet, long wings, and so on. The second one is the Pouter, a very large bird, with very long legs and beak. It is called the Pouter because it is in the habit of causing its gullet to swell up by inflating it with air. I should tell you that all pigeons have a tendency to do this at times, but in the Pouter it is carried to an enormous extent. The birds appear to be quite proud of their power of swelling and puffing themselves out in this way; and I think it is about as droll a sight as you can well see to look at a cage full of these pigeons puffing and blowing themselves out in this ridiculous manner.

"This diagram is a representation of the third kind I mentioned—the Fantail. It is, you see, a small bird, with exceedingly small legs and a very small beak. It is most curiously distinguished by the size and extent of its tail, which, instead of containing twelve feathers, may have many more,—say thirty, or even more—I believe there are some with as many as forty-two. This bird has a curious habit of spreading out the feathers of its tail in such a way that they reach forward and touch its head; and if this can be accomplished, I believe it is looked upon as a point of great beauty.

"But here is the last great variety—the Tumbler; and of that great variety, one of the principal kinds, and one most prized, is the specimen represented here—the Short-faced Tumbler. Its beak, you see, is reduced to a mere nothing. Just compare the beak of this one and that of the first one, the Carrier. I believe the orthodox comparison of the head and beak of a thoroughly well-bred Tumbler is to stick an oat into a cherry, and that will give you the proper relative propor-

tions of the head and beak. The feet and legs are exceedingly small, and the bird appears to be quite a dwarf when placed side by side with this great Carrier.

"These are differences enough in regard to their external appearance; but these differences are by no means the whole or even the most important of the differences which obtain between these birds. There is hardly a single point of their structure which has not become more or less altered; and to give you an idea of how extensive these alterations are, I have here some very good skeletons, for which I am indebted to my friend, Mr. Tegetmeier, a great authority in these matters; by means of which, if you examine them by-and-by, you will be able to see the enormous difference in their bony structures.

"I had the privilege, some time ago, of access to some important manuscripts of Mr. Darwin,* who, I may tell you, has taken very great pains and spent much valuable time and attention on the investigation of these variations, and getting together all the facts that bear upon them. I obtained from these manuscripts the following summary of the differences between the domestic breeds of pigeons; that is to say, a notification of the various points in which their organization differs. In the first place, the back of the skull may differ a good deal, and the development of the bones of the face may vary a great deal; the back varies a good deal; the shape of the lower jaw varies; the tongue varies very greatly, not only in correlation to the length and size of the beak, but it seems also to have a kind of independent variation of its own. Then the amount of naked skin round the eyes, and at the base of the beak, may vary enormously; so may the length of the eyelids, the shape of the nostrils, and the length of the neck. I have already noticed the habit of blowing out the gullet, so remarkable in the Pouter, and comparatively so in the others. There are great differences, too, in the size of the female and the male, the shape of the body, the number and width of the processes of the ribs, the development of the ribs, and the size, shape, and development of the breastbone. We may notice, too,—and I mention the fact because it has been disputed by what is assumed to be high authority,—the variation in number of the sacral vertebræ. The number of these varies from eleven to fourteen, and that without any diminution in the number of the vertebræ of the back or of the tail. Then the number and position of the tail-feathers may vary enormously, and so may the number of the primary and secondary feathers of the wings. Again, the length of the feet and of the beak,—although they have no relation to each other, yet appear to go together,—that is, you have a long beak wherever you have long feet. There are differences also in the periods of the acquirement of the perfect plumage,—the size and shape of the eggs,—the nature of flight, and the powers of flight,—so-called '*homing*' birds having enormous flying powers; while, on the other hand, the little Tumbler is so called because of its extraordi-

* The manuscript to which Professor Huxley referred was that of "The Variation of Animals and Plants under Domestication; or, the Principles of Inheritance, Reversion, Crossing, Interbreeding, and Selection," by Charles Darwin, M.A., F.R.S., author of "The Origin of Species by Variation." London, John Murray. 2 vols. 8vo. 1867.

nary faculty of turning head over heels in the air, instead of pursuing a distinct course. And, lastly, the dispositions and voices of the birds may vary. Thus the case of the pigeons shows you that there is hardly a single particular,—whether of instinct, or habit, or bony structure, or of plumage,—of either the internal economy or the external shape, in which some variation or change may not take place, which, by selective breeding, may become perpetuated, and form the foundation of, and give rise to, a new race."

CHAPTER IV.

DOVECOTES AND PIGEON LOFTS.

HAVING considered at some length the structure and habits of the Rock Dove, and the theory of the origin and perpetuation of the different varieties or breeds, we have now to regard the pigeon as a domesticated animal, and in the first instance to describe the appliances and food that are found best suited to its condition as a domestic bird. Of the old-fashioned dovecote little need be said. Formerly, when the supply of fresh animal food during winter was a matter of great difficulty, the well-stocked dovecote was regarded as an almost indispensable addition to every country mansion, and severe penal laws, still unrepealed, were passed for the protection of the inmates. At the present time, when improved processes of husbandry give us an abundant supply of beef and mutton during the whole year, dovecotes have lost much of their economic value, and are retained as appendages to many aristocratic country residences, more from old associations than from any particular value. Dovecotes were generally constructed of stone, in the form either of circular towers or placed over a gateway or park lodge. The entrance was not unfrequently made at some distance from the ground, and only to be reached by a ladder, so as to prevent the access of rats, cats, weasels, polecats, foxes, and other enemies. The interior of the tower was furnished with numerous holes or resting-places, built either of stone or constructed of wood. In these dovecotes large numbers of young birds were reared, and furnished a useful addition to the larder.

At the present time, pigeons are usually kept either in pigeon-houses or in lofts or rooms specially devoted to the purpose. A pigeon-house on a pole may possibly be regarded as a picturesque addition to a farm or stable yard, but a worse residence for the birds it would be almost impossible to devise. The pigeons in these houses are exposed to all the variations of weather. During the great heat of summer the close nests become offensive from the accumulation of dung and swarm with vermin. In the cold weather the young birds frequently perish from the low temperature to which they are exposed, and at all seasons of the year the driving rain is apt to saturate the nests and destroy the vitality of the eggs or the life of the unfledged birds. It is obvious that a pigeon-house can only afford comfortable breeding quarters during a small proportion of the year; and in inclement seasons is a dreary habitation even for full-grown birds. The result of

these disadvantages is, that the same number of birds will not rear half the number of young in an exposed pigeon-house that they would if placed in a comfortable, well-sheltered loft or room.

If pigeon-houses are employed at all, they should always have a broad roof, projecting far over the sides, so as to screen off the rain as far as possible. Houses or poles are worse even than lockers placed against a wall, as being less sheltered, and offering the smallest amount of accommodation for the inmates.

The following plan for their improvement has been proposed by E. S. Delamer, who writes:—

"The best pole-house with which we are acquainted, is that of which a plan and elevation are given in the accompanying cuts (*see* Figure VI.). A pair of birds

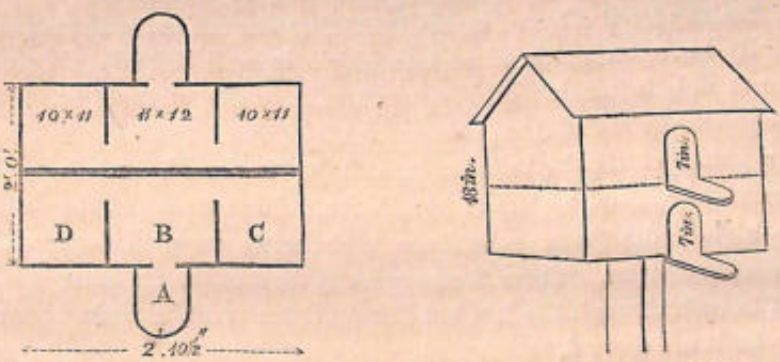


FIG. VI.—PLAN AND ELEVATION OF A TWO-STORIED POLE PIGEON-HOUSE.

take possession of the suite of apartments whose landing-place is marked A. They will probably pass through the vestibule B, when they first bring in straws for a nest, and deposit them in one of the chambers, as C. When the young are a fortnight or three weeks old, the hen will probably leave them mostly to the care of the cock, and make a fresh nest, and lay in the opposite apartment, D. As soon as the first pair of young are flown, C will be vacant for the hatching of a third brood, and so, by shifting alternately from parlour to study, and never being idle, a good pair of birds will produce quite a little flock by the end of the summer.

"It is easy to make use of this arrangement on a larger scale, or to apply it to the triangular frames of lockers which are fixed against barns and other outbuildings."

There can be no doubt that this plan is really far superior to the ordinary pole-house, as offering much more accommodation to the sitting birds: the design, however, is capable of considerable improvement. If the sloping boards forming the roof were much larger, so as to extend farther over the ends and sides, the upper story would be more perfectly sheltered from sun and rain; and if the alighting boards, or landing-places (A, A), extended along the entire

length of the sides, they would be more convenient for the birds, and those belonging to the upper story would serve to shelter the lower nesting-places from the weather.

Pigeon lockers, or houses placed against a wall, should have a southerly aspect, and be well protected by a broad projecting roof; but, under even the most favourable circumstances, they must be regarded as greatly inferior in productiveness to lofts or rooms.

It seldom occurs that a room is specially built for pigeons; but where there is any choice of locality, it is best to select one that is open to the south, so as to get a warm aspect in winter and early spring, as that tends to encourage early breeding, and is more healthy for the birds than a room exposed to the cold blasts from the north. It is not uncommon to see many pigeon rooms or lofts that are very deficient in light: this is particularly objectionable. A dark room is not as healthy for the birds, especially if they are not suffered to fly out; and it can hardly be as well cleaned as one which is well lighted. Moreover, the owner is not able to see his birds conveniently, or to examine the nests when required.

Another point, of the highest importance to the health of the birds, is the establishment of a good system of ventilation. Nine-tenths of the diseases that afflict our high-bred pigeons arise from their being crowded together in dark, dirty, ill-ventilated lofts. There is no necessity for an absolute draught of wind to be allowed to rush through the loft, but full provision must be made for ventilation, if healthy birds are desired.

Cleanliness in the pigeon-loft is no less essential than ventilation, particularly if many birds are kept, and they are not flown. The loft should be cleared out daily. Under no circumstances should the dung be suffered to accumulate until it becomes offensive to the smell.

Fresh gravel, sand, or dry earth should be thickly strewn on the floor every day, and the dung that accumulates in the nest-boxes and around the nest-pans not suffered to collect so as to be offensive. The most convenient instrument for clearing the shelves will be found to be a small hoe fixed on a short handle about eight or ten inches in length.

Pigeons are often kept in lofts, or in the spaces under the tiles or slates of a house. In this case the rafters should be properly boarded over, otherwise the dung which falls upon the laths is with difficulty removed; and there is the still more serious evil, that the owner's foot may occasionally slip off the rafter and find its way through the ceiling into the room below.

It is requisite that the loft or room devoted to pigeons should be proof against the ingress of cats, rats, and other vermin. Strange cats are most destructive to pigeons. When a cat has once tasted pigeon, she seems to prefer it to all other food. Sometimes the access of a cat can hardly be prevented, and it may be necessary to get rid of the intruder to prevent the entire loss of the stock. A box trap baited with a pigeon's head will be found to be invariably successful in the

capture; after which pussy may be shaken into a bag, which may then be placed in one pailful of water and pressed down with another.

Laying poisoned meat for any animals is now illegal, and, moreover, if arsenic is employed to destroy cats, the proceeding is attended with much cruelty, as they immediately reject that poison by vomiting, and only retain sufficient to produce violent and painful inflammation of the stomach without killing them. If poison must be had recourse to, a little carbonate of baryta, mixed up with the soft roe of a piece of red-herring, is the most certain and speedy that can be used. Rats are no less injurious than cats, and must be got rid of at all hazards. Traps, phosphorus paste, a trained cat that has been accustomed to pigeons from the first,

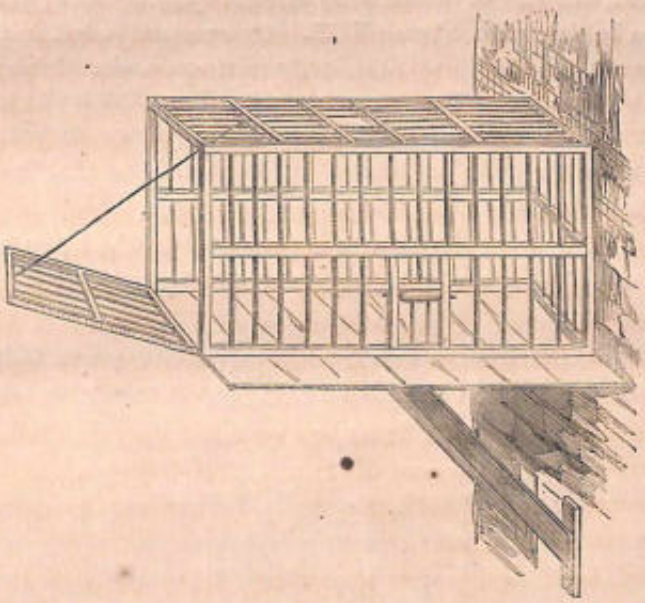


FIG. VII.—AREA FOR PIGEON LOFT.

may all be had recourse to. In some country places, weasels are troublesome, and we have known an instance where a domesticated ferret from a neighbour's house paid nightly visits to the loft of an Almond-Tumbler fancier, whose birds were decimated by the mysterious visitor.

The loft should, if practicable, admit of being divided, so as to enable the separation of the birds during winter to be readily accomplished. With the more common hardy breeds, this is not absolutely requisite, as in a well-sheltered room they will go on breeding successfully nine or ten months out of the twelve; but with the more artificial and delicate high-class varieties, it is useless to attempt to rear the young during the colder months of the year, and therefore it is desirable to separate the sexes after moulting time, or the autumn. This is most readily done by dividing the loft. If the birds are flown, the division should be so arranged

that the cocks and hens can be let out separately, and they may be given their liberty on alternate days.

If the birds are flown, ingress and egress to and from the loft should take place through a cage, technically termed an area, Figure VII. This should be fixed outside a window on a platform, which is usually supported by oblique struts. This area may either be constructed of laths or wires, and should have a falling door, to which is attached a string capable of being pulled from the inside, so as to close the entrance. It not unfrequently happens that some birds may be shut out when the door is pulled up; and in order to give these free access to the loft when the area is shut, two contrivances are used. One or more square holes, called dropping holes, are constructed in the top of the area, through which the pigeons can readily pass into the area, but out of which they cannot possibly emerge: the other is spoken of as the bolting wire, Figure VIII. An aperture is left in the side of the area: at its upper part is fixed a small roller, turning on a wire which passes through it, and into the stout laths that are on either side. From this roller hang two wires, placed nearly two inches apart, so as to give a pigeon space to put his head and neck through: these are quite unattached at the bottom, so that the bird pushing from the outside raises them and gains an easy entrance.

But the exit of birds from the interior is prevented by the wires resting against a small beading or piece of wood below, which hinders their being pushed outwards.

These two simple contrivances are of great service; they prevent birds being shut out at night when they would often fall an easy prey to cats, give them at any time

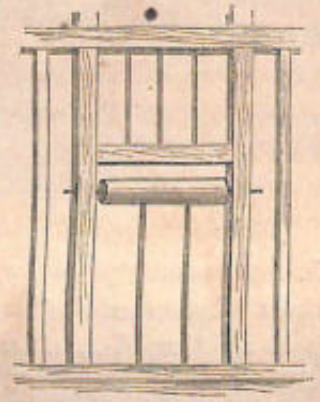


FIG. VIII.—ARRANGEMENT OF BOLTING WIRES FOR AREA.

free access to the loft, and save the owner from much anxiety and trouble. The birds learn to avail themselves of these means of ingress with the utmost readiness.

The furniture of the loft must now claim our attention. Not the least important, especially if many birds are kept together, are the breeding-places or nesting-boxes. These are of two kinds; in rooms that are rather crowded, shelves are

generally placed around the walls, and the spaces between them are usually divided by upright divisions, placed not less than three feet apart, so as to form pens or breeding-places for the different pairs of birds. The distance between the shelves should not be less than eighteen inches, if Pouters are kept; but for the smaller varieties, a foot or fifteen inches will suffice. The ends of each pen should be boarded, so that the centre only is open; this arrangement offers several advantages; the bird in the nest, which may be formed at either end, sits concealed and undisturbed, a state of things that greatly conduces to success in hatching; and by hanging a piece of wire or lath-work before the open centre, the pen is capable of being closed, and the birds kept confined as long as may be desired.

The arrangement of having darkened nesting-places at both ends of the pen is very advantageous, as during the summer a pair of birds will often wish to go to nest before the last hatched young are able to fly or feed themselves. When this is the case, a second nest-pan may be put into the other end of the pen, when the birds will lay again, and thus rear a pair of young and hatch at the same time. Some Pouter fanciers have their pens fitted up with wire fronts, so that they serve for penning up the birds separately during the winter. In this case each pen should have its own water-supply and box for food.

When there is more room, and the birds are not so numerous, nest-boxes placed on the floor of the loft will be found more advantageous than shelves. "I find by experience," writes the author of the anonymous "Treatise on Domestic Pigeons," "that nests made on the floor are much more convenient than otherwise, if the

FIG. IX.—SQUARE NESTING-BOX.

loft will admit of it (this is particularly true with regard to Runts, Trumpeters, and Fantails), for it prevents the young ones from falling out of their nests, which sometimes breaks a leg, and very often lames them, and also gives them a chance

of being fed by other pigeons as well as their parents, which frequently happens. An old cock pigeon, who is a good father, will often take compassion upon a hungry squeaker which teazes him, and runs after him begging for food, although it does not belong to him, and will charitably bestow upon it the contents of his crop." When nests are placed upon the floor, breeding-boxes for the concealment of the nests are very desirable. They should be made without bottoms, so as to be merely covers to slip over the nests. One very convenient form is shown in Figure IX. It consists of three sides of a cubical box, and half of a fourth, the bottom and side next the wall being absent. This is placed over the nesting-pan, and admits of being lifted off in an instant, either for the purpose of observation or for cleaning around the nest. One advantage of this form is that the cock bird usually takes his station over the nest of his mate, and thus does not interfere with the birds belonging to other nests, nor permit any intrusion on his own.

Another form of nest-box is even still more simple. It is formed, as shown in Figure X., of an oblique or slanting board resting against the wall; this is sup-

FIG. X.—SLANTING NEST-BOX.

ported by a piece behind, not seen in the drawing, and a half piece in front: thus a convenient shelter for the nest is formed. It is always to be borne in mind that pigeons invariably prefer a concealed and snug retreat for incubation to any open place that may be afforded them, and, where they are allowed a chance, sometimes make strange selections. We recollect going into the room of an ardent fancier, who had at that time a very valuable stock of birds, and his showing us a nest in the sleeve of an old coat, which he had accidentally left on the floor of his pigeon-room a few days previously.

Having spoken at some length of the nest-boxes, we now have to speak of the nests themselves. Having tried every plan that has been suggested for their construction, we are free to confess that we know of none so advantageous as the employment of the coarse earthenware saucers known as nest-pans. These are formed usually of rough red earthenware, and are best if made of the shape shown in Figure XI.; although for large birds, as Pouters and Carriers, some fanciers prefer the nest-pans to be rather flatter at the bottom than the one represented. In size, these pans should vary with that of the different breeds; for small birds, as Tumblers, seven or eight inches in diameter is quite sufficient; but for Pouters, ten inches is not too great. These pans should be made heavy, so that they are not

likely to be overset by the old birds resting on the edge. Some fanciers object to the use of nest-pans, on account of the young occasionally falling out and perishing from cold. Others endeavour to obviate this evil by sinking the pan in a hole cut

FIG. XI.—EARTHENWARE NEST-PAN.

in the shelf or board on which it rests; but we have never found it necessary to have recourse to this plan. The advantages of nest-pans over all other contrivances of the kind are very great. They are superior to boxes or baskets, on account of the slight harbour they afford to vermin, and the ease with which they can be cleaned. Then the facility they afford for examining and shifting the young birds should not be lost sight of. They are much cleaner and more healthy in use than any other contrivance that can be employed. When the nestlings are very young, if the pan becomes wet, a handful of dry sawdust or bran speedily absorbs all moisture, and the nest becomes dry and wholesome; and as the young become stronger, the dung is ejected over the sides of the pan, and the nest remains unsoiled. Some persons object to their employment, thinking that they are apt to chill the eggs; but we never experienced that evil, and the pans are readily made warmer by a little soft hay, cut straw, bran, or sawdust being placed within them.

We are convinced that with high-class delicate birds a very much larger number of young can be reared when nest-pans are employed than when they are not used.

When nests are made on the ground, some persons place a few bricks around them, to prevent the eggs being rolled away; but the plan is far inferior to the employment of the nest-pan. In some parts of the country there may be some difficulty in getting these simple appliances, but as they can be made by any brick, tile, or coarse earthenware maker, they should be accessible anywhere.

Another appliance, very necessary to the health and comfort of the birds, must not be overlooked,—that is the washing-pan. Pigeons are not dusting-birds, like fowls, but, on the contrary, cleanse themselves by washing; they are fond of lying down in shallow pools of water, expanding their wings, loosening the arrangement of the feathers, and then, when the plumage is well-nigh saturated, they give a vigorous shake, and the water at once becomes quite white and milky with the scurf thrown off from the skin of the bird.

When kept in aviaries or in lofts, it is cruel to deprive them of this pleasure, so conducive to their well-doing; and therefore shallow pans of water should be provided. In our own lofts we use milk-pans for the purpose; but any broad, open vessels, capable of holding two or three inches' depth of water, will answer equally well.

As it is necessary to capture the birds at times, a common cheap landing-net will be found a very useful article in the pigeon-loft, as by its use a single bird can be readily caught without driving the others about and frightening the sitting birds off their eggs and young.

A supply of drinking-water is at all times an essential requisite. Pigeons are very thirsty birds, drinking a much greater amount of water than most persons would suppose possible; therefore a good supply is required. This is especially the case when the young are being fed, as, after picking up a cropful of corn or pulse, the old bird has to take a copious draught of water before it can disgorge it into the throat of the young.

The old fanciers used to employ a large bottle filled with water, and then inverted into a saucer; but the contrivance is somewhat clumsy, and the common earthenware or metal poultry fountains will be found far more convenient in use. Many fanciers, who are particular about the food of their birds, care but little respecting the water given them. Too much stress cannot be laid on the fact that a supply of pure, clear drinking-water is absolutely essential to the health of the birds. Often have we seen the owner of valuable pigeons bewailing his misfortune in losing so many by sickness, and when we looked at his drinking fountains we found that they contained water contaminated with filth, the presence of which quickly explained the diseased condition of his stock.

FIG. XII.—MATING OR MATCHING CAGE.

Another very necessary appendage to the loft is a mating or matching-up cage. For the purpose of breeding birds of any desired properties, it is requisite that the parents should be matched together according to the judgment of the owner. For this purpose all that is necessary is to place them in a mating cage for a few days.

A very useful mating cage is represented in Figure XII.; it is merely an ordinary pen or cage with an open wire partition separating the two birds; the cock is placed on one side, the hen he is desired to pair with on the other. It is desirable to remove this pen from the loft, and out of the sight of other birds, when the cock will be seen in a day or two making advances towards the hen; they

may be then placed together, and as soon as the cock is seen calling the hen to nest, they may be regarded as paired, and returned to the loft. Sometimes, though rarely, it is necessary to keep them apart from the general flock a few days longer; but, generally speaking, there is but little trouble in matching birds together in any pairs that may be regarded as desirable.

One evil should be strongly guarded against in the loft, namely, a superfluity of male birds, as odd cocks are constantly persecuting the hens that are mated, driving them off their eggs, and causing much fighting and turmoil. If there are too great a number of hens, the evil is much less, as a pair will often mate together, go to nest, lay and sit on four eggs, in the vain hope of rearing a brood; and, what is still more extraordinary, sometimes two cocks will match together in the same manner, and build a nest. If a pair of good eggs are given to them, they will even sit on the eggs, and hatch and rear the young, in the same manner as if they were a pair consisting of cock and hen.

We had a pair of Smerles, or Short-faced Antwerp cocks, that were mated for two seasons, and reared several pairs of young from eggs laid by other birds. The third season one was shot, and the survivor then mated with a hen and bred some exceedingly good homing birds.

With regard to the food of the birds, we are inclined to recommend a greater variety than that usually employed. The London fanciers are strongly in favour of very small beans, regarding them as superior to all other articles, where the birds are large enough to take them; but the Short-faced Tumblers cannot possibly feed their young even on the smallest beans, and therefore they are supplied with wheat and tares. Peas, both white and grey, are also extensively used. Whatever variety is employed, care should be taken to select old samples, as new peas, beans, or tares, are almost certain to purge the more delicate varieties. In America, Indian corn or maize is constantly used, being crushed for the use of the smaller breeds. In England, most fanciers have a great prejudice against its employment, but from long experience we can speak very favourably of it as a valuable addition to the dietary of the birds.

When pigeons are flown they become much more hardy than if confined to a loft, and only permitted to take exercise in a large area, or enclosed aviary. Under these circumstances so much care need not be exercised in the choice of their food: barley, tail-wheat, and even coarse rice, may form part of their food without danger. Pigeons flying in the country find a considerable portion of their own food, and even when an unlimited supply of pulse and grain is afforded them: they pluck off the small seeds of grasses, and eat a quantity of green vegetables, that greatly conduce to their well-being. In the crops of the wild Rock Dove, there is almost always found, as will be seen by referring to Chapter II., numerous small snails; and we have always noticed that such of our own pigeons that have their liberty, fly to the grass fields after a shower of rain, and pick up the smaller snails that are brought forth by the wet.

Believing that we cannot do better than follow the natural instincts of the birds

in the matter of their food, we always strive to vary their dietary as much as possible, and give to those in confinement a green turf, or sometimes a cabbage or a lettuce to peck at.

It should be borne in mind that pigeons are derived from the Rock Dove, a bird frequenting the sea-shore, and drinking the salt water of the pools left by the retiring tide. This may account for their fondness for salt, a natural instinct that it is most desirable to indulge. They also require calcareous matter to furnish the materials of the egg-shell. We endeavour to supply both of these desires at one and the same time, by mixing a little salt with a quantity of old mortar rubbish, and placing it where the birds can gain easy access to it.

If mortar rubbish is not accessible, we burn a few oyster shells, so as to render them brittle, then powder them up, with the addition of a little salt. Care must be taken not to supply salt or salt mixtures of this kind in too large quantity to birds that have long been deprived of this substance, as under those circumstances they are apt to eat so much that they injure themselves. The old fanciers used to make a nauseous and filthy compound they called "salt cat," for the delectation of their birds, but it offers no advantage over salt and mortar, or burnt shells, such as we have described. So fond are pigeons of salt, that they will peck at any substance containing it. On one occasion the brine out of a barrel of Scotch herrings was emptied in our garden, and for many months the pigeons were to be noticed pecking at the mould around the spot, evidently attracted by the saline constituents of the brine. Many fanciers refuse to give their pigeons any salt, but it is difficult to believe that the gratification of so strong a natural instinct should not tend to the advantage of the birds.

CHAPTER V.

THE ENGLISH POUTER.

IN treating of the different varieties of breeds of domestic pigeons, either one of two methods might be pursued. A naturalist would regard it as most desirable to commence with the wild species, and trace the different breeds from it; taking in the first instance those that showed the least departure from their wild progenitors. Such a method of procedure would, however, not be acceptable to the fancier, who regards the natural bird with slight esteem, and values his specimens precisely in proportion as they depart from the original standard.

As this work is on the domesticated pigeon, and is written for the use of the fancier rather than for that of the naturalist, it is more desirable to commence with the most highly valued varieties; and therefore the so-called high-class birds, the Pouters, Carriers, and Short-faced Tumblers, will first engage our attention, as these breeds, with some few others, such as the Barbs and small African Owls, offer the strongest instances of departure, at least in structural peculiarities, from the formation of the original stock.

The history of the origin of the English Pouter has not been very accurately recorded. In all probability it was due to cross-breeding with, and careful selection from, the old Dutch Cropper, the Uploper, or the Parisian Pouter. These breeds are alluded to by Willughby in his "Ornithology," published in 1678, and edited by the celebrated naturalist John Ray, and are described in the first distinct work on the natural history of tame pigeons, namely, the "Columbarium" of John Moore, which was published in 1735, and which was reprinted, almost verbatim, without acknowledgment, in the anonymous "Treatise on Domestic Pigeons," published in 1765, in "The Complete Pigeon Fancier," ascribed to Daniel Girton, and which is reproduced with many notes in Mr. Eaton's well-known "Treatise." Of these breeds Moore writes as follows:—

"THE DUTCH CROPPER.—This pigeon seems to be originally Dutch, being naturally thick, and its name is derived from a large bag, or crop of wind, which they carry under their beak, and can at pleasure either raise or depress; they are thick-bodied and short; their legs are likewise thick, short, and feathered down to their feet; their crop is large, but always hangs low; the feathers on their thighs hang loose, whereby they are said to be flag-thighed; their legs stand wide, and they seldom play upright; they are gravel-eyed, and are generally very bad feeders,

therefore as soon as they have fed off their soft meat it is proper to put their young ones under a pair of small Runts, Dragoons, or Pouting Horsemen, which may be kept as nurses for the purpose.

"There are all sorts of feathers in this pigeon, and the Dutch in breeding it take a very great care; for as soon as they have fed off their soft meat, they put their young ones under others to nurse, and then separate their old ones, placing them in different coops, and feeding them high with hemp or rape-seed for a month, then turning them together; and by being very hearty and salicious, they breed pigeons with very good properties; from whence we may observe, that would mankind be alike abstemious, their progeny might be more complete both in body and mind.

"These are the pigeons that are most apt to gorge, if not kept constantly supplied with meat and water."

"The Uploper.—The Uploper is a pigeon bred originally in Holland; its make and shape agrees in every respect with the English Pouter, only it is smaller in every property. Its crop is very round, in which it generally buries its bill; its legs are very small and slender, and its toes are short and close together, on which it treads so nicely, that when moving, you may put anything under the ball of its foot; it is close-thighed, plays very upright, and when it approaches the hen, generally leaps to her with its tail spread, which is the reason the name is given to it, from the Dutch word Uplopen, which signifies to leap up. These pigeons are generally all blue, white, or black, though I will not assert that there are no pieds of the species. There are but few of them in England, and I have been informed that in Holland they have asked five-and-twenty guineas for a single pair of them."

"The Parisian Pouter.—This pigeon was originally bred at Paris, and from thence brought to Brussels, whence it was transmitted to us; it has all the nature of a Pouter, but is generally long-cropped and not very large; it is short-bodied, short-legged, and thick in the girt. What is chiefly admired in this bird is its feather, which is indeed very beautiful, and peculiar only to itself, resembling a fine piece of Irish stitch, being chequered with various colours in every feather, except the flight, which is white; the more red it has mixed with the other colours, the more valuable it is: some are gravel-eyed, and some bull-eyed, but it is equally indifferent which eye it has."

Of the origin of these three varieties of Croppers, no historical details are known. All ordinary breeds of pigeons have the power of distending the upper part of the gullet with air to some slight extent, and so enlarging the neck. Even the wild Rock Dove possesses this faculty; and a reference to the figure at page 9, illustrating the structure of its digestive organs, will show that the gullet, *b c*, is unusually large, as compared with the size of that organ in fowls and other allied birds.

By careful selection, and breeding from birds that developed this peculiar property to the greatest extent, the breed of Croppers must have been obtained. And

it appears not improbable that the modern Pouter, characterized by its extremely long limbs and great length of feather, in addition to size of crop, might have been bred from these Croppers, crossed with a long-limbed, long-bodied, and long-feathered Carrier, and thus the variety produced by artificial selection, in precisely a similar manner to that in which Moore states the Pouting Horseman to have been obtained. "This pigeon," he says, "is a bastard strain between the Cropper and the Horseman, and according to the number of times that their young ones are bred over from the Cropper, they are called first, second, or third breed; and the oftener they are bred over, the larger their crop proves. The reason of breeding these pigeons is to improve the strain of the Pouters, by making them close-thighed, though it is apt to make them rump, from the Horseman's blood. They are very merry pigeons upon a house, and by often dashing off, are good to pitch stray pigeons, that are at a loss to find their own home; they breed often and are good nurses, generally feeding their young ones well. I have known these pigeons to be six inches and six and a half in legs; they are a hearty pigeon, and, give them but meat and water, need very little other attendance. Some of them will home ten or twenty miles." Whatever it may be, we find the earliest history of the Pouter in Moore's "Columbarium;" and as his book is exceedingly scarce, it is desirable to preserve his description, more especially as it has been taken as the basis of almost all the English works that have been since published on the subject,—the "Treatise," and Girton more especially. The modern fancier cannot fail to be struck with the fact that the standard of properties, as laid down by Moore, is in the main identical with that of the present day. Many other breeds have felt the influence of fashion, but the Pouter of Moore's time and that of last Glasgow show, are almost, if not quite, identical.

Writing of this breed, which Moore terms "The English Pouter," he states:—

"This pigeon, which was first bred in England, and is therefore called the English Pouter, is originally a mixed breed between a Horseman and a Cropper, experience teaches us, it will add a wonderful beauty to this bird, and raise in it the five following properties:—1. Length of Body; 2. Length of Legs; 3. Neatness of Crop; 4. Slenderness of Girt; 5. Beauty in Feather.

"1. As to the length of body, the longer they are from the apex of the beak to the end of the tail, the more the pigeon is esteemed: I have seen one that measured this way near twenty inches, although seventeen or eighteen is reckoned a very good length.

"2. The length of the leg is the next thing to be examined in a Pouter, *i.e.*, from the upper joint of the thigh in sight, to the end of the toe-nail; and in this property some pigeons have been very considerable, wanting a mere trifle of seven inches, yet the bird that produces six and a half or three quarters must be allowed to be a very good one.

"3. The next property to be considered is the crop, which ought to be large and round, especially towards the beak, filling behind the neck, so as to cover the shoulders and tie neatly off at the shoulders, and form a perfect globe.

"4. The smaller the girt the better, because by this means a contrast of beautiful shape is given to the whole bird.

"5. The last thing that is generally allowed as a property in a Pouter is the feather, and indeed its plumage affords a very great variety. The Pieds are most universally esteemed, and under these may be ranked the Blue-pied, the Black-pied, the Red-pied, and the Yellow-pied, each of which advance in their worth according as they answer best the foregoing properties; for instance, if the Blue-pied and Black-pied are equal in the measure of the other properties, the Black-pied will be reckoned the best pigeon, on the account of the feather, and the Yellow-pied, if equal, better than any.

"Before we leave this head of feathers, we must take notice how a Pouter ought to be pied: and, in the first place, the chop ought to be white, girt round with a shining green, intermixed with the colour with which he is pied. By the chop is meant the front part of the crop, and this white ought by no means to go behind the neck, for then it is said to be ring-headed. He ought to have a bib or round patch, of the same colour with which he is pied, coming down from under his chop, and falling upon the chap, which makes it the shape of a half-moon; but if this bib be wanting he is said to be swallow-throated.

"His head, neck, and back ought to be of one uniform colour, and the tail the same; and if the pigeon be Blue-pied, he ought to have two bars or streaks of black across the lower part of both wings; but if these happen to be of a brown colour, he is said to be kite-barred, which is not so valuable.

"The shoulder or pinion of the wing ought to be mottled with white, lying round in the shape of a rose; this is called a rose-pinion, and is reckoned the best, though but very few arise to be complete in this property; but if the pinion runs with a large patch of white to the outer edge of the wing, he is said to be lawn-sleeved.

"His thighs ought to be clean white, though sometimes the joints of the knees will be edged round with another colour, but let it fall here, or any other part of the thigh, he is foul-thighed.

"The nine flight-feathers of the wing ought to be white, otherwise he is said to be foul-flighted, and if only the external feather of the wing be of the colour of the body, it is called sword-flighted, or sworded.

"Besides the five properties before mentioned, there is another, which, though not generally allowed, will be found to be one of the best—I mean the carriage; under which I comprise the following heads:—

"The crop ought to be so far filled with wind as to show its full extent, without bufling* or being slack-winded, which are both esteemed very great faults. The Pigeon that bufles fills his crop so full of wind, that it is thereby strained in such a manner that he is ready to fall backwards, because he can't readily discharge the confined air, which renders him uneasy and unwieldy, and many a

* Probably this obsolete verb, *to bufle*, is derived from the French verb *bouffer*, to blow out or puff out.

good bird has, by this means, either fallen into the street, or become a prey to those fatal enemies of the Fancy, the cats. The other extreme is being slack-winded, so that he shows little or no crop, and appears not much better than an ill-shaped Runt.

"The second beauty in carriage is their playing upright, with a fine tail, well spread like a fan, without scraping the ground therewith, or tucking it between their legs; neither should they set up the feathers on their rump when they play, which is called rumping.

"The last beauty of carriage in a Pouter is to stand close with his legs, without straddling, and keep the shoulders of his wing tight down to his body, and when he moves, to trip beautifully with his feet, almost upon his toes, without jumping, which is the quality of an Uploper.

"A Pouter that would answer all these properties might be said to be perfect; but as absolute perfection is incompatible with anything in this world, that Pigeon that makes the nearest advances towards them is certainly the best. Some have answered them so well, that I have known eight guineas refused for a single pigeon of this breed."

This quotation from Moore disposes of the history of the bird, as far as regards English treatises, for more than a hundred years; for, as before stated, the works subsequently published in this country were but slightly varied copies from this writer.

On the Continent, however, several notices of the Cropper appeared. Thus Temminck, in his "Histoire Naturelle Générale des Pigeons et des Gallinacés," published in 1813, describes this variety, under the title of Pigeon Gosse-gorge, as follows:—

"The Pouter is generally a bird of large size. It possesses the peculiar faculty of inflating its crop to a prodigious size. It is by means of drawing in the air and retaining it, that the bird succeeds in inflating himself in such a manner that the crop appears larger than all the rest of the body. It even sometimes occurs that he loses his equilibrium in performing this feat. When he springs up he always inflates the crop.

"Pouter pigeons are found of all colours, the most beautiful and those most sought after are such as are peculiarly marked. The caprice of the amateur regulates the estimation in which the different coloured birds are held. There are, however, some varieties which appear most difficult to obtain. In order to breed these, a very particular attention and great care are required. I have been assured that some persons possess in so high a degree this talent of producing and of creating, so to speak, extraordinary markings in the plumage of pigeons, that there is scarcely a variety of plumage which they cannot obtain at will. But they are often obliged, in order to attain their end, to cross an infinite number of varieties in order to arrive at that particular one that they desire."

The system thus accurately described by Temminck is one worthy of the notice of English breeders, who, for the most part, are afraid to cross birds of different colours.

Temminck was apparently acquainted with the experimental researches of the German fanciers, who, as he truly says, are possessed of such a degree of skill in creating extraordinary markings, that there is scarcely a variety of plumage they cannot produce.

Leaving the older authors on the subject of the Pouter, we now have to consider the more modern writers on the breed.

In 1850, the Rev. Edward Saul Dixon published "The Dovecote and the Aviary; being Sketches of the Natural History of Pigeons and other Domestic Birds in a Captive State," London, John Murray. This work is distinguished by considerable scholarly research, and a pleasant readable style; but unfortunately the author was neither a scientific naturalist nor an experienced fancier, and his book was necessarily destitute of much practical value.

A very large portion of the Rev. E. S. Dixon's work was afterwards reprinted in a smaller treatise, published under another name, being issued as "Pigeons and Rabbits, by E. S. Delamer." As the Rev. E. S. Dixon's original work was the first, after that of Moore, that contained any novel remarks on the Pouter, we reproduce his account, which is especially interesting as containing references to Pliny, Willughby, and other ancient writers. Writing of this variety, he states:—

"Pouters appear to us to be the most isolated of the domestic pigeons; they bear little resemblance to any of the other kinds, and it is difficult to say to which breed they are most nearly related. If, as some writers have held, the inflation of the crop is the peculiar distinction of the pigeon, Pouters ought to stand at the head of the whole family of *Columbidæ*. Provincially they are called Croppers, which is not a vulgarism, but an old form of speech.

"'*Croppers*,' says Willughby, "'so called because they can, and usually do, by attracting the air, blow up their crops to that strange bigness, that they exceed the bulk of the whole body beside; and which, as they fly, and while they make that murmuring noise, swell their throats to a great bigness, and the bigger, the better and more generous they are esteemed. Those I saw at Mr. Cope's, a citizen of London, living in Jewin Street, seemed to me nothing bigger, but something less than Runts, and somewhat more slender and long-bodied.'*

"The hen Cropper also has an inflated crop like the male; the same in kind, though less in degree. When zealous fanciers want to form an opinion of the merits of a Cropper pigeon, they inflate the crop by applying the bird's mouth to their own, and blowing into it, exactly as if they were filling a bladder with air, till it is extended to the very utmost. Nor does the patient seem in the least to dislike the operation, but the contrary; and when set upon its legs, choke-full of wind, it will endeavour to retain the charge as tightly as it can, and appears actually to be pleased with, and proud of, the enormity of the natural balloon which it carries about with it. The only analogous case I am acquainted

* The figure of the Cropper given in Willughby's "Ornithology" represents a short-legged ordinary pigeon, that differs only from the other specimens delineated in having a large inflated crop.—W.B.T.

with is the fish which blows itself out with air, and then floats on the surface of the sea, belly upwards.

"I cannot agree with those who think the gait and appearance of Cropper pigeons at all displeasing or unnatural, although they certainly are a very marked and peculiar style of bird. We can admire the classic figure of Atlas with the globe upon his shoulders; the Cropper is an Atlas wearing the globe under his shirt-front. He has indeed something of a military air, and requires but a few finishing touches from a drilling-master to make his demeanour perfect in formality and politeness. We have seen gentlemen belonging to Her Majesty's army, whose back-thrown head, super-erect carriage, taper waist, and well-padded breast, brought them very much to the model of a gigantic Cropper, and whose countenances betrayed no dissatisfaction with their own personal appearance; and a style of beauty which contents a man, may surely be allowed to please a bird. The feathered legs and the sweeping tail may be supposed to complete the likeness, by representing spurs and dangling and trailing what-nots.

"The flight also of the Cropper is stately and dignified in its way. The inflated crop is not generally collapsed by the exertion, but is seen to move slowly forward through the air, like a large permanent soap-bubble, with a body and wings attached to it. The bird is fond of clapping his wings loudly at first starting to take his few lazy rounds in the air; for he is too much of a fine gentleman to condescend to violent exertion. Other pigeons will indulge in the same action in a less degree, but Croppers are the *claqueurs par excellence;* and hence we believe the *Smiters* of Willughby to be only a synonym of the present kind. He says, 'I take these to be those, which the fore-mentioned *Hollander* told *Aldrovandus*, that his countrymen called Draiiers. These do not only shake their wings as they fly, but also flying round about in a ring, especially over their females, clap them so strongly, that they make a greater sound than two battledores or other boards struck one against another. Whence it comes to pass, that their quill-feathers are almost always broken and shattered; and sometimes so bad, that they cannot fly.'

"Smiters and Croppers, or something very like them, must have been known and kept so long back even as Pliny's time. 'Nosse credas suos colores, varietatemque dispositam: quin etiam ex volatu quæritur plaudere in cœlo, varieque sulcare. Quâ in ostentatione, ut vinctæ, præbentur accipitri, implicatis strepitu pennis, qui non nisi ipsis alarum humeris eliditur.' 'You would think they were conscious of their own colours, and the variety with which they are disposed: nay, they even attempt to make their flight a means of clapping in the air, and tracing various courses in it. By which ostentation they are betrayed to the power of the Hawk, as if bound, their feathers being entangled in the action of making the noise, which is produced only by the actual shoulders of their wings. (Lib. x. 52.)

"Pouters are of various colours; the most usual are blue, buff (*vulgò* cloth), splashed in various mixtures, and white. Pure white Pouters are really

handsome, and look very like white Owls in their sober circlings around the pigeon-house. Apropos of the blue and the cloth-coloured birds, a friend asks, 'Have you ever observed that if you pair a chestnut with a blue pigeon, the cock being, say the chestnut, the chances are that the *young* cock is *blue*, and the hen chestnut, and *their* offspring will come *vice versâ* round again?—*H. H.* This is a curious alternation.

"Pouters have deservedly a bad character as nurses, and it is usual to put the eggs of valuable birds under other pigeons to hatch and rear; but otherwise they are not deficient in natural powers, either of hardiness, flight, or memory. I am well acquainted with the party to whom the following case happened:—

"'I once had a pair of pigeons of the Cropper kind given to me by a friend, I confined them about a month, with the view of breaking off the thoughts of their former home; but as soon as they had their liberty, they flew towards their old habitation. The hen arrived immediately; but, strange to say, her mate did not *till two years afterwards*. No doubt he was trapped, and remained in confinement during the whole of that time. The distance to their old home was only four miles and a half, but what seems curious is, that a pigeon should recollect his home after two years' absence. My friend told me, that as soon as the Cropper cock got back again, he began to play the same tricks as he used to do before he was sent away to me.'—*J. W.*

"An objection to Pouters is, that the largest-cropped birds seldom have their crops perfectly covered with feathers, but show a great deal of naked skin (from their rubbing off) which leaves the beholder to *imagine* the beautiful plumage which *ought* to be beheld. They are also apt to be gorged by over-feeding themselves; in which case we have proved the benefit of the directions in the Treatise, adding to them, however, a calomel and colocynth pill. 'When they have been too long from grain, they will eat so much that they cannot digest it; but it will lie and corrupt in the crop, and kill the pigeon: if this, therefore, at any time happens, take the following method:—

"'Put them in a strait stocking, with their feet downward, stroking up the crop, that the bag which contains the meat may not hang down; then hang the stocking upon a nail, keeping them in this manner till they have digested their food, only not forgetting to give them now and then a little water, and it will often cure them; but when you take them out of the stocking, put them in an open basket or coop, giving them but a little meat at a time, or else they will be apt to gorge again.'

"No space remains to give the technical points of the Pouters of the fancy, which would best be done by liberal quotation from the Treatise. The author quite sympathizes with the 'insanity' of the ancient Romans. He elaborately describes five properties of the standard Pouter, and six rules for the manner in which a Pouter should be pied, as 'published and in use among the columbarians;' and sums up all philosophically thus:—

"'A Pouter that would answer to all these properties, might very justly be

deemed perfect; but as absolute perfection is incompatible with anything in this world, that pigeon which makes the nearest advances towards them is most undoubtedly the best.'

"Some of the crosses between Pouters and other pigeons are held in esteem; that most prized is the cross with the Carrier, as being a bird of powerful flight. 'Light *Horsemen*. This is a bastard kind, of one parent a *Cropper*, the other a *Carrier*, and so they partake of both, as appears by the wattles of their bill, and their swollen throats. They are the best breeders of all, and will not lightly forsake any house to which they have been accustomed.' (Willughby.) The same mixture of breeds often goes by the name of Dragoon."

It is hardly necessary to say that, to many of the statements in this pleasantly written account, the acquiescence of the experienced amateur cannot be expected; that the Smiters of Willughby were identical with his Croppers is not correct. The statement respecting the alternation of colours in the generations bred from a pair consisting of a blue and a buff or chestnut bird, is only true accidentally, and must not be taken as a general fact.

Shortly after the publication of "The Dovecote and Aviary," Mr. John Matthews Eaton published his very eccentric work, in which he reproduces the text of Moore's "Columbarium," and adds the slight amount of additional matter derived from "The Treatise" of 1765, and the work ascribed to Girton; to these he appends some remarks of the late Mr. B. P. Brent, and a number of very remarkable but perfectly characteristic and original notes of his own writing.

These works comprise, it is believed, everything that has been written on the Pouter, with the exception of a few paragraphs hardly worth transcribing in such works as Mowbray's "Domestic Poultry," and other books of a similar class.

Having discussed at considerable length the history of the origin of the English Pouter, we have now to estimate its properties as an exhibition bird, and to take into consideration those points of excellence that are valued by amateurs at the present time, and that command success in a show-pen. The properties of the Pouter that are now held in the highest estimation are the same as those recorded by Moore nearly 140 years since. They are five in number, namely:—

1. Length of leg or limb.
2. Length of feather.
3. Slenderness of body.
4. Size and carriage of crop.
5. Colour.

In an article on the properties of the Pouter as an exhibition bird, published in *The Field* some time since, Mr. Tegetmeier, after enumerating the properties as above stated, says:—

"I have arranged these properties in what I believe to be generally regarded as the order of their importance, although I am aware that some fanciers of the highest standing and greatest experience take a different view of their relative value.

"Almost all Pouter-breeders, however, are agreed that length of limb is the most important property, without which the best bird in all other respects would be but of little value. I need scarcely say that the limb is measured from the joint nearest the body to the end of the nail of the centre toe. It requires some little practice to measure a bird accurately, and hence loose and random assertions are constantly made as to the length of limb of certain birds. We often hear of Pouters seven and a half inches in limb; but I must confess that, though some scores or hundreds of the best birds in the kingdom have passed through my hands when awarding the prizes at various exhibitions, it has never yet been my good fortune to measure one of that length. The best bird I ever bred was seven and a quarter inches, and I should ever be perfectly satisfied with my success if I could breed a few more like him. In fact, seven inches for a cock, and six and three quarter inches for a hen, may be regarded as a first-rate limb.

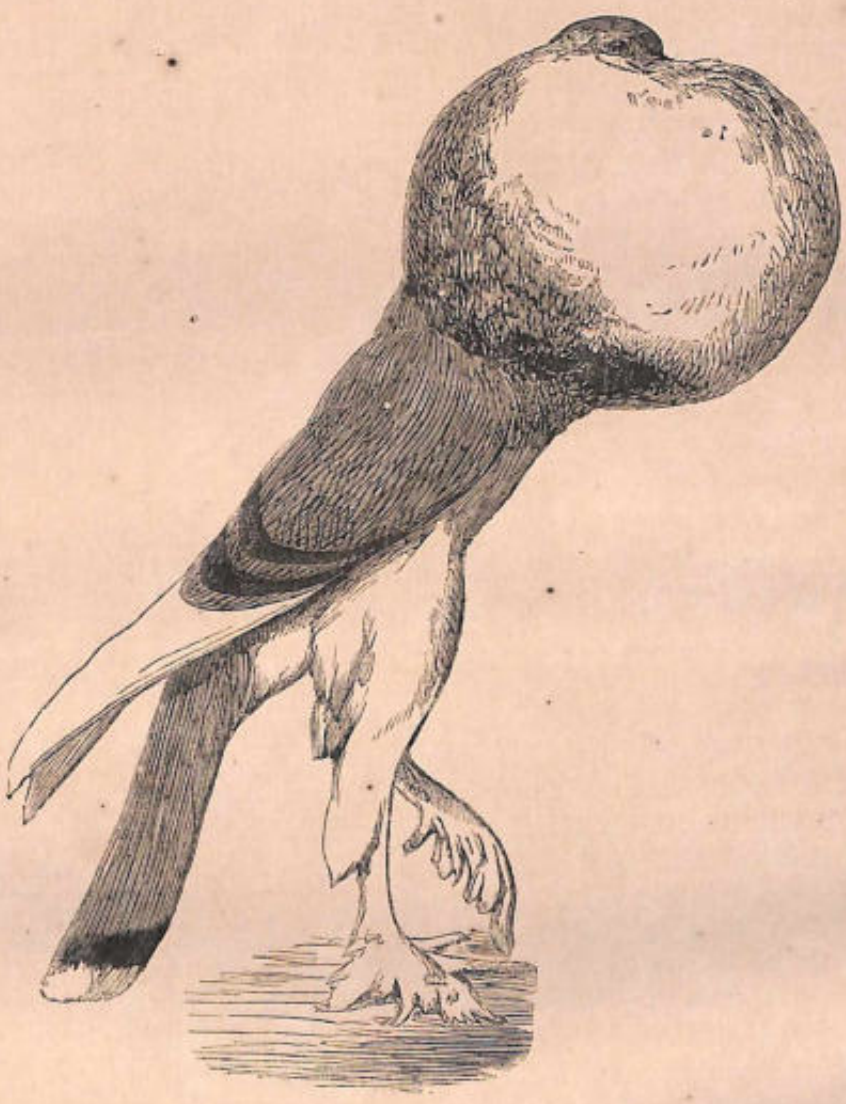
"In addition to a good length, the leg also requires to be well and closely feathered to the tips of the toes.

"The illustration represents a very superb blue-pied cock that belonged to the late Mr. Samuel Bult. The engraving is an exact copy of the original sketch, now in my possession, by the celebrated animal draughtsman, Harrison Weir. The legs of this bird were over seven inches in length; but in the matter of feathering they were very faulty, the loose long feathers about the hocks detracting very much from the beauty of the bird. The absence of feathers on the shank is as great a fault as their excess, many otherwise very first-class birds being partially bare, or, as it is termed, spindle-shanked.

"The length of feather is measured from the tip of the beak to the extremity of the centre feathers of the tail, the bird being stretched out at full length. The bird represented measured a little over eighteen inches, which is a very good length, although sometimes exceeded by half or even a whole inch. It is true that I have often met with birds over twenty and even twenty-one inches in length; but it has always been in print or in conversation about absent birds, as I have never had the pleasure of seeing them in the flesh.

"Slimness of girth is a very essential property in a Pouter; nothing detracts more from elegance in a bird of this breed than a thick, clumsy body. The old fanciers used to say that the body of a Pouter ought to be able to slip through a wedding-ring, which, making due allowance for the slight exaggeration always found in the conversation of enthusiasts, gives a correct idea of the form desired to be obtained by the Pouter-breeders. Within the last few years, I think, the generality of Pouters shown have improved in this quality. A few years ago, many of the London birds were thick and clumsy, arising from the fact that one of the largest breeders crossed his strain with a very large Mottled Runt, in order to get size into his breed. This he did at a sacrifice of shape, and it took several years before the bulky body was bred out.

"The fourth property, the size and carriage of the crop, is one on which the



THE POUTER PIGEON.

elegance of the bird greatly depends. The crop, when distended, should be of as globular a shape as possible. It certainly should not be so enormous as to extend over the shoulders of the bird, and involve part of the body, nor should it force back the head of the bird till it is bent backwards down towards the tail. The crop should be of good size, neither overblown nor contracted. When not inflated, as happens when the bird is not in show, the crop should not hang down as a loose bag, with a few beans and a little water at the bottom, as in that case the bird is said to be slack-winded, and loses all elegance of form.

"The colour of a Pouter is an important property. The most common are the blue-pieds. These should be a good bright blue, with the wings and the tail well barred with black, and pied with white on the crop in the shape of a new moon or crescent: this white moon should not be too large, nor should the points of the crescent meet around the back of the neck. On the shoulder there should be a mere patch of white, which is termed the rose-pinion; the flight-feathers should be white, and those covering the legs and feet. There should be no white over the back or any part of the head. The black-pied birds should have the same distribution of colour as the blues.

"With regard to the reds and yellow-pied, white tails are regarded as admissible, not perhaps because they are admired, but because these colours cannot be bred with dark tails. Pure white is also a favourite colour of many breeders, and few birds can look more beautiful than a clean, long-limbed graceful bird of this colour. No person who had the pleasure of ever seeing the stock of the late Mr. Bult, can fail to remember the beautiful sight that his birds presented when walking about the lawn in his garden; the contrast of the pure white specimens with the green of the closely mown lawn, added in no little degree to the striking character of the group.

"In addition to these, there are several off-colours, that are not valued in themselves, although the birds may be of the greatest worth as breeding birds. The most common of these is that known as mealy, a kind of dull powdered red, of different depths of colour in different birds. These mealy birds are often the best in limb and feather that the fancier breeds, and although as show birds their colour is regarded as nothing, they are invaluable as breeders. The same is true of splashes and mottles of various kinds, which are also not uncommon."

The publication of this communication elicited the following letter from James Ruthven, Esq., the Honorary Secretary of the Glasgow Ornithological Society. The annual exhibition at Glasgow is known to present the grandest collection of Pouters that is got together in the United Kingdom. The success of this society is in great measure due to the energy and knowledge of the Secretary, whose experiences and intimate knowledge of this breed render his communication of the highest value. Mr. Ruthven writes as follows:—

"In reading over your article on the Pouter, I certainly would differ from you as to the relative importance of the various properties. I should feel disposed to give the most important position to the point that gives the character of the bird;

the next to the points that give grace and elegance. However, after all, the principal points must be combined in harmony with each other. I should not always consider the longest limb the best, as so much depends on the shape and covering of the limb. The length of limb and length of feather should be in proportion, say a 6¾-inch limb to an eighteen-inch bird, or 7-inches to a nineteen inch, is better than a 7-inch limb to a 17½ bird, which gives what we have seen too often—long bodies and short tails. I may also mention that in proportion to length of feather, the hens have just as long limbs as cocks; and I would almost say, from a sudden recollection of all the hens I have had, or known, of any merit, that they would average the same length of limb, nay, I could almost assert they were longer in limb, in proportion to their length of feather.

"I have known a hen measure 7½ inches, I *never* saw a cock measure that. When you take 7 inches for a cock and 6¾ inches for a hen, I suppose you mean that the hen should be about 1 inch shorter in feather; if so, you may be right, but I think the length of the limb goes with the bird in proportion to the size; take all the 18-inch cocks in any fancier's loft, and all the 18-inch hens, and I think you will find the limbs measure the same on the average. I like the drawing of Mr. Bult's Blue-pied Pouter very much, although the length of the wings has been curtailed.

"Is there not a want felt by beginners, in the way of a little more information, as *how to breed* birds for particular points, as colour, length of limb, &c.? we are told in every publication what is considered perfection, and that all beginners should aim at this, but how to do so is the question. I see you give us a little of this in the 'Poultry Book,' but it might be extended; practical knowledge is what the breeder wants now-a-days; he will not have the patience of bygone fanciers, and toil through years of experience: such information that could be relied on would be greedily devoured. I have been all my life a breeder of pigeons, and latterly I have added poultry, since I have been able to keep them. I have all the books published of any note, and I can scarcely put my hand upon a page that would guide me to match up for certain points to be obtained."

The suggestions of Mr. Ruthven for the publication of practical directions for the benefit of the experienced amateur, appear to be of great importance, and we will therefore state the results of our experience, and also of that of others, as far as we have been able to ascertain them.

The rock on which most Pouter-breeders have been wrecked has been a slavish fear of breeding away from some one particular colour.

Blue-pied birds have generally been matched with blue-pieds, black-pieds with black-pieds, whites with whites, and so on through the whole of the varieties. The late Mr. Bult was one of those who rejected this practice, and it was to his freedom of action that his great success was mainly to be attributed. When he first embarked in the Pouter fancy, he threw large size into his strain by crossing his breed with a very large, long-feathered Runt, of a white ground colour, mottled with light red, and which he termed an "almond-mottled" bird.

The great size thus obtained was accompanied with an increase in the girth of the body that took some years' careful selection of brood-stock entirely to get rid of, and birds of "almond-mottled" feather were always making their appearance in Mr. Bult's stud, even up to the time of his decease, one being sold at the sale that took place after his death. As far as regards the colours of the pairs he matched together, Mr. Bult was not particular; his object was to secure length of limb and feather, and he left colour in great part to take care of itself.

Nevertheless, it must not be imagined that the colours of birds that are penned together are of no importance. Pigeon fanciers know that there are certain colours which are very apt to be reproduced in the offspring, and others which are readily lost by breeding with birds of other colours.

Thus, amongst Pouters, birds of the colour known as mealy will, when matched with either blue-pied, black-pied, red-pied, yellow-pied, or pure white, often produce young most perfectly marked or coloured, without a trace of mealiness; and hence a good mealy bird is always, by experienced fanciers, regarded as valuable for brood-stock, as any other colour can be bred from it, if not in one, most certainly in two generations.

This is an important fact, as mealy birds are not unfrequently the longest in limb and feather, the slenderest in girth, and the best in carriage of any in the stud.

With regard to the matching of the particular colours, first of blue-pied; a Pouter of this colour should not be matched with a black-pied, as although, in many cases, well-marked birds of either colour are produced, the general result is to obtain dark birds, with chequered wings and black bars, which are neither elegant nor valuable. Blues may be matched with reds, if no better match offers; and we have seen some very good-coloured birds the produce of this cross. Nothing can be better than to cross a blue cock with a large, long-limbed mealy hen; the produce will, in almost all cases, be either blue or mealy. Blue-pied and white are not desirable to match, as very white-pied birds, or white splashed or speckled with other colours, would most probably result.

Black-pied may be matched with red-pied or mealy with advantage; but white should be avoided, as splashed offspring would almost certainly be produced.

Red-pied may also be matched with yellow-pied, when good yellow or red birds will be produced; red-pied and mealy may also be matched, but with some risk to the bright red so much prized in the best-coloured birds.

Yellow-pied may also be matched with mealy with advantage.

White Pouters should have a white beak, a dark eye, and a plumage of immaculate purity, in addition to all the other properties of the breed. The fear of the hereditary transmission of a few dark feathers has made many fanciers dread any intermixture of other blood with their white strain; but we can speak from long experience in breeding this variety, and can state that some of the best whites we ever reared were obtained from a cock with a dark-splashed tail and a mealy hen, and that the progeny of these birds, when crossed with other whites, bred birds free from stain.

White, in the language of the fanciers, is a "strong" colour, that is to say, it is one that reproduces itself with great force, and readily overpowers other colours existing in the bird to which it is matched.

Having treated of breeding for colour, it is now desirable to speak of the most certain modes of obtaining the other characteristics. In breeding for length of limb and feather, it should not be forgotten that the influence of the hen over form and size is generally superior to that of the cock: thus a poor cock mated with a superior hen, will produce much better birds than a good cock if matched with a short-limbed hen; size and limb take after the female parent, colour more usually follows the male. Thus a white cock with a long-limbed mealy hen, would be more likely to throw good white birds than a mealy cock with a white hen.

It is always desirable to mate birds so that any deficiency in one shall be counteracted by the other; thus a bird with very heavily feathered legs would be judiciously mated with one deficient in this quality. Another with too much white with one that has too little, and so on.

As extreme vigour of constitution is required in the Pouter, it is always desirable to avoid too close interbreeding; brother and sister should never be matched, nor, if possible, should any birds be paired that are closely related, as weakness of the limbs, and deterioration alike of size and length of limb, will be the result; whereas, on the other hand, the extraordinary influence of a total change of blood in giving vigour, size, and constitutional hardihood can hardly be overrated.

We now have to consider the arrangements most desirable for the accommodation of a stud of Pouters. The size and peculiar habits of these birds render necessary a very considerable modification of the arrangements that are usually made for the other varieties of domestic pigeons. Their height necessitates pens of much greater altitude, their length of feather requires a large increase of size in their nesting-places and cages, and the desirability of getting them into show renders it almost imperative for the Pouter fancier to have such an arrangement of his loft as will admit of his penning the whole of his birds separately during the winter months, that is, from immediately after the moulting season until they are matched up anew in the spring. First-class Pouters cannot be advantageously kept, either in dovecotes, pigeon-houses, or lofts, such as may be devoted without inconvenience to many of the other varieties; and except in country districts where they are secure from molestation, they cannot be safely flown at large, as they are so tame that they may frequently be taken up in the hand, and when they are strutting about with inflated crops, they offer themselves as easy victims to predatory cats. Hence, in towns, Pouters are always kept in rooms or enclosed aviaries, and these are fitted up with pens for the nesting and confinement of the birds.

Mr. Eaton, in his "New and Improved Diagram or Plan of Building or Fitting up a Pigeonary," gives a design for pens that are to be placed against the side of a room or enclosed aviary.

The stack of pens being fifteen feet four inches in length, by seven feet six inches in height; the entire length is divided into five tiers of pens, each pen being three feet in width from side to side, and sixteen inches from back to front. This stack is divided horizontally into six rows of pens, placed one over the other; of these the lower row only is intended for Pouters, being sixteen inches in height, the second for Carriers, fourteen inches in height, and the upper four rows for Tumblers, each row being twelve inches high. These dimensions will show that all experienced fanciers consider that Pouters require larger and taller pens even than Carriers.

A low pen would prevent the birds raising themselves to their full stature, and their carriage would be entirely destroyed. The arrangement proposed by Mr. Eaton is one calculated to enable the possessor of a single loft or room to keep the three high-class varieties, Pouters, Carriers, and Almond Tumblers, together. In practice, we should doubt whether it would be found advantageous to do so. The pens for the Pouters would be too low, and too near the ground for the birds to become familiar with their feeder, and consequently they would not "show" so freely; and the Carriers, which are not unfrequently birds of a very combative disposition, would be apt to interfere with the delicate and fragile Short-faced Tumblers in a manner that would not at all conduce to the well-being of the latter. A single peck from the sharp-pointed beak of a Carrier would destroy the beauty of the eye of an Almond Tumbler for life.

The compiler of the anonymous "Treatise" of 1765, who was evidently a practised breeder, states that "The Pouter requires an infinite deal of attendance, it being necessary to keep them separately all the winter season; that is to say, every single bird, cocks as well as hens, in a separate pen or coop, each of which must be furnished with meat and water, and should be lofty and spacious, as otherwise they would contract a habit of stooping, which is an imperfection, and should by all means be prevented. Then having (in the spring) matched or paired them, you must be provided with at least two pairs of Dragoons to every pair of Pouters, for nurses or feeders, which must be kept in a separate loft from the Pouters, otherwise they would bastardize, and spoil the breed. Pouters are never suffered, by those who are curious, to hatch their own eggs, they being bad feeders, and would often starve their young ones. When the Pouter has laid her egg, it must be shifted under a Dragoon, that has likewise laid, nearly about the same time, and that of the Dragoon be placed under the Pouter, exchanging the one with the other, it being necessary the Pouter should have an egg, or eggs, to sit on, to prevent her laying again too soon, which would weaken, and in a short time kill her. Likewise the inconveniency attending them when gorged (by putting them in a stocking if gorged with food, and if gorged with water by squeezing it out of their crops), which frequently happens, especially among the large-cropped ones, and sometimes occasions the loss of a valuable bird, if proper care (and that in due time) be not taken. Again, should a fancier begin with half a dozen pairs of Pouters, he would,

in a short time, be under the necessity of purchasing more, or exchange (perhaps his best birds) for worse, in order to cross the strain; for should he (as the term is) breed them in and in, which is matching father and daughter, or any other way incestuously together, the breed would degenerate, and not be worth sixpence; whereas, the same number of Almond Tumblers would inevitably stock him for life, for the breeding of Tumblers in and in would consequently breed them smaller, which is a perfection in them, and they require no attendance while breeding, provided you supply them with meat and water, and throw them a little straw, and do not (like the Pouter) require time to be lavished upon them to make them familiar. Experience teaches us that were Tumblers to be kept in separate pens, as the Pouters are, they would show in the same manner, and be equally as familiar as the Pouter, for the Pouter should be almost constantly attended and talked to, during the winter season, in a phrase peculiar to that fancy, viz., hua! hua! stroking them down the back, and clacking to them as to chickens, otherwise they would lose their familiarity, which is one of their greatest beauties, and is termed showing, and would make the finest of them appear despicable, which made a facetious gentleman of my acquaintance say 'that Pouters were a fancy more particularly adapted to weavers, cobblers, and the like kind of trades only, that worked in the same room where they were kept, that the owners might have an opportunity of conversing with them, at the same time they were earning their subsistence.'"

In breeding Pouters we have tried both the plans of having feeders and of rearing the young birds without, and most unhesitatingly give our verdict in opposition to the author of the "Treatise." Feeders are a great trouble; you must have two pairs for each pair of Pouters, or you cannot ensure their being ready to take the young when required, and sometimes they resent the change and will forsake their charge. By feeling the young birds' crops twice a day, and if they are empty, feeding them with soaked beans, they are readily reared. It may be said, this is troublesome, but good birds are creditable, and will amply repay the owner for the trouble of rearing them.

The most admirable arrangement for keeping Pouters that has ever fallen under our notice was that adopted by the late Mr. Samuel Bult, of Highgate, who was one of the most ardent admirers of this breed.

Those fanciers who, like ourselves, had the privilege of seeing this celebrated stud at home, cannot fail to have been struck with the admirable manner in which the birds were cared for. A visitor was never allowed to see them before the houses had been thoroughly cleaned out for the day, the floors freshly swept and gravelled, and the pens strewed with fresh sawdust. If the visit was early in the day, a glass of wine and biscuit served to beguile the time until "William" announced the fact that the birds were ready for inspection: on stepping out on to the lawn at the back of the house, the visitor saw a walled garden of moderate size; at the opposite sides of the lawn were two summerhouses; which were devoted to the Pouters. In the centre of the lawn was the stump of a low tree, the branches of

which had been sawn off, leaving the truncated ends, each of which supported a small platform on which the birds could fly. On the lawn itself were the large shallow vessels in which they bathe. The houses contained the pens, each one of which was about three feet long by eighteen inches in height. The fronts of the pens were made of perpendicular wires. The door formed the middle third, the wires at the two ends being fixtures. At the two extremities of the pens were placed large flat flower-pot saucers, serving as nest-pans, and often a pair of young birds was to be seen at one end, whilst one of the parents was sitting on a pair of eggs at the other. Each pen was furnished with two small pans, one for food, the other for water: these were never empty.

Mr. Bult did not employ any common birds as feeders for his stock; he had tried the plan and not found it so successful as to induce him to continue it, consequently the lowest tier of pens, which had been originally constructed for their accommodation, was devoted to a few Jacobines. Birds of this breed were selected by him because of the contrast their small delicate forms, short legs, and recurved hoods, offered to the large size, elongated limbs, and inflated crops of the Pouters.

Those of the young birds that required feeding by hand were fed with beans night and morning, and as the interval between the time of their being neglected, wholly or partially, by the parents, and that at which they could feed themselves, was not a long one, this feeding did not involve any great degree of trouble.

Pouters will always feed their young for a few days, until they have entirely got rid of that secretion from the crop known as the soft food; hence there is rarely any difficulty with the newly hatched young for eight or nine days; but shortly after that time the birds, from being highly fed, are desirous of going to nest again. The cock will begin driving the hen, and this leads to a desertion, more or less complete, of the young birds in the nest. To prevent their death, under these circumstances they must either be shifted under other birds that are better feeders, or they must be brought up by feeding them artificially. Some fanciers effect this in a peculiar manner, filling their mouths with peas or tares, followed by a mouthful of water. The owner then takes the young bird in his hands, inserts its beak between his lips, and by an action imitative of the method of feeding adopted by the old pigeons, ejects the contents of his mouth into the crop of the young bird. There are pigeon fanciers who are very expert at this operation, and who boast of their power of rearing young birds from a very early age; but we confess to not having mastered the accomplishment.

The method of feeding by hand usually adopted is to cram the bird with soaked beans or peas. We prefer the former, as being larger, and not requiring so many to fill the crop. The bird to be fed should be lifted from the nest, or the nest-pan may be taken on the knees as the feeder sits in a low chair; when, placing the left hand over the bird, he holds the head between the finger and thumb, and taking up the beans (which should be conveniently placed) with the right hand, he opens the beak and slips them rapidly, one after another, down the throat of the young;

taking care that they pass on into the crop and do not collect in the gullet, where, by pressing the windpipe, they might stop the breathing.

The object of soaking the beans is twofold. By it they are rendered larger, and so are more easily handled, and sufficient water is given at the same time as the food; this is a great advantage, for at the early stage at which some Pouters require feeding, it is difficult to induce them to drink.

Those who, like ourselves, have had the pleasure of witnessing the scene from the windows of Mr. Bult's house, will acknowledge that his arrangements were the very perfection of pigeon-keeping. The extreme cleanliness of the houses and pens, the beauty of the birds, now prancing proudly on the lawn, and then, as it were, in the very exuberance of their animal spirits, starting off on a short flight with loud-slapping wings and inflated crops, and the pleasing variety occasioned by the different colours of the birds, combined to render the picture most attractive.

The pure white contrasted well with the black-pied, and the reds and yellows with the blue-pied, although these latter, in the elegance of their marking, are perhaps in advance of all the others.

After the death of Mr. Bult, which took place in 1862, this valuable stud of birds was disposed of on November 18th, 1862, by the hammer of Mr. J. C. Stevens, of King Street, Covent Garden. The following account of the sale appeared in *The Field* of November 22nd, in the form of a letter from a correspondent:—

"Sir,—As a witness to the most remarkable sale of pigeons that has occurred in my recollection (and I am now rather an old fancier), I beg to send you the following account of the auction at which Mr. Bult's Pouters were sold, on Tuesday last. The number of birds sold must have been very nearly, if not quite, seventy, and the money they produced could not have been much under £200. Among the more remarkable birds were the following:—A white cock of extraordinary length of feather, a very good bird, for £5 5*s.*; a blue-pied cock, for the same price, which was also realized by a red cock and a black hen. Many birds went at sums varying from £4 to £5, and the entire stud averaged nearly £3 each.

"As usual in every sale, there were a great many inexperienced buyers who were paying heavily for the worst birds, the best certainly not fetching their full value. The sale attracted buyers from very distant places; many of the birds went to Manchester, others to Halifax, some to Scotland and Ireland—so that this celebrated strain will be widely distributed.

"From the number of Mr. Bult's birds, and the extreme care and attention that was paid to them, they always appeared in public the very pink of cleanliness, and in capital show, hence they never failed to attract a greater amount of attention than most other strains. Of the great merit of his best birds, there can be no doubt, but the surprising fact is that the mere *wasters* amongst those bred during the last season should find buyers at the price at which they were purchased. After this sale, who can say the pigeon fancy is declining?

"Columba Livia."

This letter elicited the following account in a succeeding number of the same paper :—

" Sir,—The extraordinary prices realized by Mr. Bult's Pouters are by no means unprecedented. On looking at a rare anonymous work, entitled " A Treatise on Domestic Pigeons," London, 1765, I find the following notice regarding a sale of Pouters that took place more than 100 years since :—' Eighteen pairs and a half,' says the author, ' were sold by public auction for £92 9*s.* 6*d.*, as appears by a paragraph in the *Daily Advertiser* of Thursday, Jan. 1, and the day following in the *Gazetteer and London Daily Advertiser* of Friday, Jan. 2, 1761, which, for the greater satisfaction of the reader, I shall here transcribe :

" ' On Monday evening last, at the sale of pouting pigeons, at Mr. Hay's, the French Horn, in Beach Lane, consisting of eighteen pairs and a half of pigeons, they were sold as follows :—

Lot	£	*s.*	*d.*
1. One pair	2	12	6
2. Ditto	2	7	0
3. Ditto	2	0	0
4. Ditto	1	17	0
5. Ditto	2	12	6
6. Ditto	3	5	0
7. Ditto	3	13	6
8. Ditto	4	7	0
9. Ditto	4	6	0
10. Ditto	3	10	0
11. Ditto	3	16	0
12. Ditto	5	2	0
13. Ditto	4	1	0
14. Ditto	8	0	0
15. Ditto	13	6	0
16. Ditto	16	16	0
17. Ditto	4	10	0
18. A hen only	5	5	0
19. One pair	1	3	0
Total	£92	9	6

" ' As I was present,' says the author, ' at the above sale, so I had an opportunity of examining the birds, some of which were very indifferent ones, and some of them very capital ones indeed, viz. : Lots 14, 15, 16, and 18 ; and to my knowledge, two pairs of which were afterwards sold for 36 guineas by private contract.'

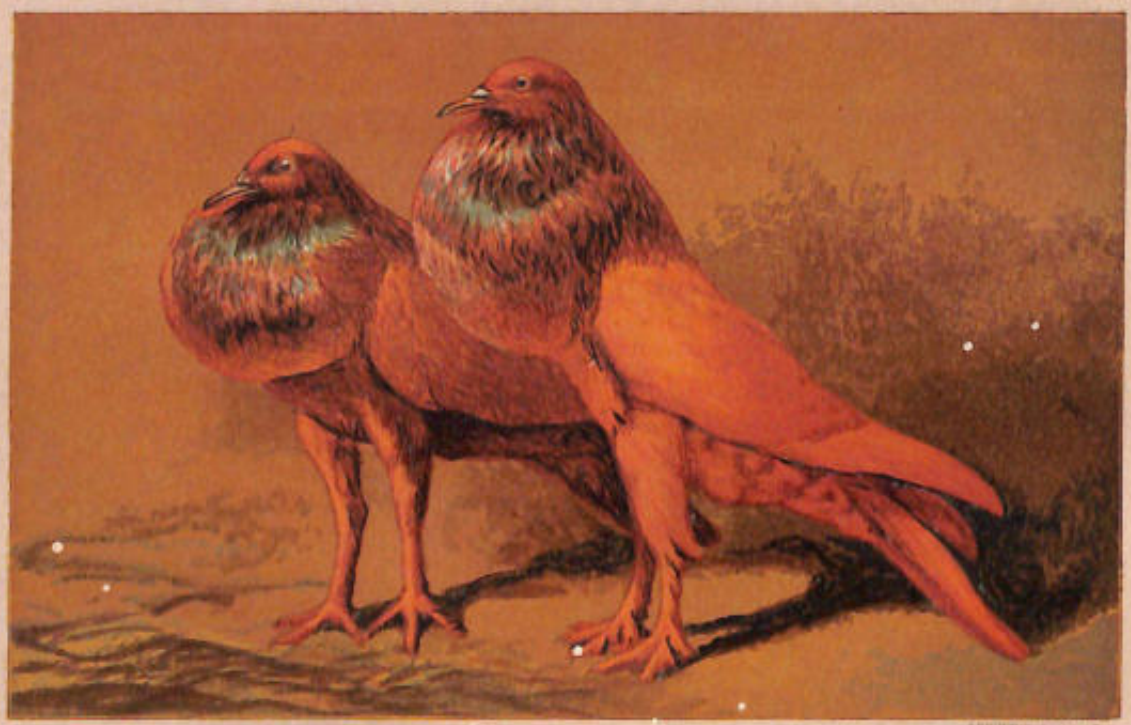
" Senex."

It is singular that at the distance of a century two sales of first-class Pouters should occur, at both of which the birds should average almost exactly the same price: at the sale in 1761, thirty-seven birds produced £92 9*s*. 6*d*., almost exactly £2 10*s*. each, and in 1862 seventy birds realized the sum of £180 5*s*. 6*d*., being an average of £2 11*s*. 6*d*. each. At neither sale did the best specimens produce their full value, and at both the inferior birds were sold far beyond their real worth.

The author of the "Treatise" states that many of the birds sold in 1765 were very indifferent, and that the best afterwards sold for a much higher price than they realized at the auction; so with Mr. Bult's birds, many of the inferior specimens were resold at Mr. Stevens's in subsequent seasons, and produced only a portion of their first cost, whilst many of the best specimens, afterwards privately resold, produced much larger sums than they did when disposed of by the hammer of Mr. Stevens.

High as these prices obtained at these sales may appear, they have been far surpassed at the present time: £10 is by no means an uncommon price for a good-limbed and well-marked bird, and as large a sum as £20 each has not unfrequently been given for very superior Pouters. In fact, such a sum is always to be obtained for a bird whose properties are sufficiently good to place it as a winner at any of the great shows, such as those of Glasgow, Manchester, or Birmingham.

ISABELS.



AUSTRIAN POUTERS.

CHAPTER VI.

FOREIGN POUTERS; ISABELS, BRUNNEN OR PIGMY POUTERS.

SEVERAL varieties of Pouters are to be found on the continent of Europe which are not much known in our own country. The common Pouters of Germany, Holland, and France are very similar to the old Dutch Croppers, as described by Moore, whose account of the breed is quoted in the last chapter. They are large pigeons, with well-distended globular crops. They often possess great length of feather; but their legs are short, and, consequently, their carriage is not erect, and they cannot compare in elegance with the English birds. In colour they vary greatly, the continental amateurs devoting great care to the production of variations in the colour and markings of the plumage. Some idea of the numerous varieties thus produced may be gained from the fact that M.M. Boitard and Corbie, in their volume entitled "Les Pigeons de Volière et de Colombier," Paris, 1824, describe nearly twenty varieties in the colour and markings of the Continental Pouters, or "Pigeons Grosse Gorge."

Many of these birds are very prettily marked; a pair, a short time since, came into our possession, of a very bright yellow, with pure white wings and flight-feathers, and well-defined white rings round the necks. Some of these breeds are well feathered on the legs and feet; others are not so ornamented.

In addition to these large breeds, there are some smaller Pouters to be found in various parts of the continent. Among the best known of these at the present time, at least in England, are the birds known at the pigeon-shows as Isabels, and so named, we may presume, in consequence of their colour. They may be described as small Pouters, with very good-sized crops, and having the feet generally rather heavily feathered. In colour they vary from a light and delicate fawn tint to a pale yellow, and as in many other of the German breeds, the black bars so characteristic of the wild Blue Rock, and the majority of the blue birds descended from it, have been supplanted by two white bars. These Isabels have been common at our pigeon exhibitions for some years, and really good specimens are very successful competitors in the classes in which the new or distinct varieties are shown. Isabels are very delicate and elegant birds; on a closely mown lawn they always appear to great advantage, their colour contrasting well with the green background formed by the

short grass. They breed freely, are perfectly hardy, and require no special attention to ensure their rearing their young with success.

Within the last few years a second variety of small Pouters has been introduced into England. The first that came under our notice were those exhibited by Dr. Harvey of Cork, who showed black and red birds at the Cork exhibition, under the title of Brunnen Pouters.

The best of these birds are perfect Pouters in miniature; and if we except the pied markings on the full-sized birds, they possess every property that distinguishes the English Pouter, but reduced to the smallest possible size. In fulness of crop, in erect carriage, in slenderness of girth, and in length of limb, they are perfect.

The original birds that were first imported were very bare on the shanks, a failing that detracted much from their appearance; but which has been remedied by careful breeding, and well-feathered specimens are now to be obtained.

In colour they vary considerably. We have at the present time some of these little pigmy Pouters, as they have been most appropriately termed, that are purely white; these are excessively elegant. Others are entirely red; a third set black; whilst some, which are not the least attractive, are blue, with the usual black bars; and others are silver, with white bars. A few are fawn-coloured, whilst some are very elegantly marked or chequered on the wings, like the Parisian Pouter, as described by Moore in the account quoted at page 50.

We have not yet succeeded in breeding any that are pied like the English Pouters; but there is no doubt that with a little care this could be accomplished. In fact, it was done by the late Sir John Sebright, Mr. J. M. Eaton, in his "Treatise on Pigeons," states he was present at the sale of the birds that was held after Sir John's death, and that he was surprised, "on looking at his Pouters, to find that he had reduced the English Pouter down to such little Lilliputians, or 'multum in parvo' Pouters, possessing in an elegant degree the properties of the English Pouter. Sir John no doubt reduced them all he possibly could, preserving all their elegant properties."

There can be but little doubt that Sir John Sebright obtained a stock of the small pigmy or Brunnen Pouters as a basis of operations, and introduced the pied markings of the English breed, retaining the diminutive size of the German birds.

We have not been able to trace the destination of the birds that were sold after Sir John Sebright's decease, but presume that, from want of care, the breed became extinct. His laced bantams have become firmly established in the public estimation, but the pigeons appear to have been entirely lost. This is to be regretted, as a prettier variety could not be introduced. We have, however, no doubt but that they will become in request; and as the exquisitely elegant little Game bantam is appreciated as a miniature of the gallant Game cock, so will the pigmy Pouter be admired by those who estimate the noble English breed.

It may interest our readers to know the exact size of good birds of this variety,

and therefore we give the following weights and dimensions of some of those in our possession.

WHITE COCK.—Weight, eight ounces; length from tip of beak to end of tail, thirteen inches and a quarter; length of leg, five inches and a quarter. This little bird has most admirable carriage, and all the properties of a good white Pouter, even to the dark eye and white beak.

BLUE HEN.—Weight, seven ounces and a quarter; length of body, thirteen inches; length of limb, five inches.

SILVER HEN.—Weight, eight ounces and a quarter; length, thirteen inches; length of limb, four inches and three quarters.

These dimensions are those of mature adult specimens. We have only to remark in conclusion that these birds rear their own young with success, and that they may be made so tame and familiar that they will allow themselves to be taken up by the hand without an attempt to escape.

HEAD OF CARRIER.

CHAPTER VII.

THE ENGLISH CARRIER.

UNDER the name of Carrier pigeons several very distinct varieties are commonly confounded together. The term Carrier, as applied to pigeons, evidently was first employed to signify those breeds that were used to convey or carry messages to their own homes from distant places. In the process of time it has been used by English fanciers to signify a very artificial or high-class breed, the birds of which are never employed for carrying messages, but are valued solely in proportion to the perfection of certain "properties" that they possess. This is an unfortunate circumstance, for by the public at large the term Carrier is always taken to express the fact that the birds to which it is applied are really those employed to "carry" messages; whereas the long-distance flying birds, those known more correctly as "Homing" birds, or "Les Pigeons Voyageurs," are totally distinct. Hence it will be desirable to describe these breeds in separate chapters, and we shall first consider the high-class fancy, or English Carrier.

Of the origin of this valued breed there is no special record. All domesticated pigeons have a tendency to variation in the amount of naked membrane around the eye and over the nostrils, and this, when growing to an unusual extent, having pleased the taste of the early fanciers, has been propagated by careful breeding, increased by the process of artificial selection, and conjoined to an extremely elongated beak and well-developed limbs, until at last the English Carrier has been produced.

The term English Carrier may be applied to this breed with strict accuracy, for in no other country do birds exist possessing their characters. There are to be found in other countries birds with the membrane around the eye highly developed, as, for example, those known as Barbs. Others have the beak extremely elongated, as the Scanderoons, the Bagadotten of the Germans, and the Bagadais of the

BLACK CARRIER.

IRIGHTON, BROTHERS.

French amateurs; but no bird containing the properties of the Carrier is to be met with abroad, excepting in the case of birds exported from England.

Such being the case, we turn to the earliest English authority on fancy pigeons for a description of their properties, and find that Moore, in his "Columbarium," writes as follows:—

"The Carrier is larger in size than most of the common sorts of pigeons: I measured one whose length from the point of the beak to the extremity of the tail was fifteen inches; this, though not one of the largest, weighed near twenty ounces. Their flesh is naturally firm, and their feathers close, when they stand erect upon their legs; their necks being usually long, there appears in them a wonderful symmetry of shape beyond other pigeons.

"The upper chap of the bill is half covered from the head, with a naked white tuberous furfuraceous flesh, which projects or hangs over both its sides on the upper part nearest the head, and ends in a point about the middle of the bill: this is called the wattle, and is sometimes joined by two small excrescences of the same kind on each side of the under chap. This flesh is in some Carriers more inclinable to a blackish colour, which is generally the more valued.

"The eyes, whose iris, or circle round the black pupil, is generally of the colour of a reddish gravel, are equally surrounded with the same sort of furfuraceous matter, for about the breadth of a shilling; this is generally thin when it spreads wide, and is most valued, yet when the flesh round the eye is thick and broad it shows the Carriers to be of a good blood that will breed very stout ones.

"A Carrier is generally reckoned to have twelve properties, viz., three in the beak, three in the wattle, three in the head, and three in the eye.

"To begin, therefore, with the first, the properties of the beak are to be long, straight, and thick. As to its length, an inch and a half is reckoned a long beak, though there are very good Carriers that are found not to exceed an inch and a quarter. The straightness of the beak adds a wonderful beauty to its length, and if otherwise it is said to be hooked-beaked, and is not so much esteemed. The thickness of the beak is likewise a very great commendation, and if it fails in this point it is said to be spindle-beaked, which diminishes something of its value.

"The next three properties are those of the wattle, which ought to be broad across the beak; short from the head towards the apex, or point of the bill, and tilting forward from the head; for if otherwise it is said to be pegg-wattled, which is very much disesteemed; and, therefore, some people, to impose upon mankind, and enhance the price of an indifferent bird, have artificially raised the hinder part of the wattle, filled it up with cork, and wired it in with fine wire, in such a manner as not to be easily perceptible, especially to gentlemen who are not adepts in the Fancy.

"We now come to consider the properties of the head, which are its length, its narrowness, and its flatness. When a Carrier has a long narrow head, and a very flat skull, it is much admired; and if otherwise, it is said to be barrel headed.

"The last three properties are those of the eye, which ought to be broad, round, and of an equal thickness; for if one part of the eye be thinner than the rest, it is said to be pinch-eyed, which is deemed a very great imperfection; whereas if it has the contrary properties, it is said to have a rose-eye, which is very valuable.

"To these, some add the distance which is between the hinder part of the wattle and the edge of the eye; but I cannot allow this to be a property, because when a Carrier comes to be three or four years old, if the eye is broad and the wattle large, they must of necessity meet: the distance, therefore, seems to be rather a property of the Horseman.

"Another distinguishing mark of the Carrier is the length and thinness of its neck, which some call a property; and it must be allowed to add a very great beauty to this bird, especially considering the breadth of its chest.

"Its feather is chiefly black or dun, though there are likewise blues, whites, and pieds of each feather, but the black and dun answer best the foregoing properties; yet the blues and blue pieds are generally esteemed for their scarcity, though they will not usually come up to the properties of the foregoing feathers."

Since the time of Moore, the Carrier, as a fancy pigeon, has been even increasing in the estimation in which it is held by fanciers. To so high a pitch has it now risen that £20 is no uncommon price to be given for a very perfect bird, one that is capable of taking a high position in a close competition at a competitive show, and there is no doubt that the standard of the breed or the perfection of the properties has been varied since the publication of the "Columbarium" in 1735.

Some time since the members of the National Columbarian Society drew up a most elaborate and valuable paper on the properties of the Carrier.

The members stated, "We shall endeavour to describe the properties which in the aggregate constitute the perfect Carrier of the present day. In this labour of love we have spared no pains to give value and truthfulness to our report, inasmuch as nothing has been taken for granted, or upon any previous authority, but the standard measurements have been carefully verified on first-class living birds. We have endeavoured to fix the relative value of the properties by the employment of numerals. We attach much importance to this, the most practical part of our efforts, not merely because we believe it may serve to guide young fanciers respecting the quality of the birds they may select, but in the hope that it may tend to produce uniformity in, and prevent dissatisfaction with, the awards of judges; for if it be conceded that our appreciation of the different points is correct, it follows that the awarding of a first, second, or third prize becomes, in the great majority of cases, a matter of simple addition. Trusting that our opinions now recorded may coincide with those of our brother fanciers, we entertain the hope that one result at least will be gained by the publication of this paper, namely, the opinion of the fancy at large upon the standard we have drawn, and the relative value of the different points:—

"PROPERTIES OF THE CARRIER.

1. THE SKULL.—It should be long, straight, narrow between the eyes, and flat at the top, where it is sometimes dented.
2. THE BEAK.—The upper and lower mandibles should be long, straight, thick, and boxed, that is to say, the upper should close on the lower like the lid of a box. The colour of the beak is not regarded as material.
3. THE BEAK WATTLE.—The wattle of the beak should be distinct from that of the eye, soft in texture, short from back to front, broad, tilting forwards from the forehead, and pointed at its termination towards the tip of the beak on the top. It should not present a flattened appearance, but stand out like the surface of a cauliflower, and its fissures should curve somewhat regularly towards the point; this upper wattle should be met by a corresponding one (sometimes called the jewing) on the lower jaw.
4. THE EYE.—The eye-wattle should be large, fleshy, soft, round, regular, and should rise above the skull; the ball of the eye should be prominent, like a well-set jewel, its iris fiery red, or it may be pearl-coloured in dun-coloured birds. In white Carriers the eye should be dark.
5. THE CARRIAGE.—The beak and head should form nearly a right angle with the neck; the shoulders should be broad, the chest full, the limbs long, so as to keep the body well raised from the ground; the bird should show his carriage without requiring much rousing, holding the neck slightly curved over the back, so that the eye is directly over the toes. The body should present a graceful line from the shoulder to the end of the flight, the back being flat, and the tail and flight-feathers touching, so as to render the line continuous. The neck should be long and thin from its commencement at the shoulders upwards, the head being well undercut at the junction of the lower jaw with the neck.
6. THE PLUMAGE.—The feathers should be dense and closely set, a Carrier in perfect condition appearing as if cut out of stone; the colours should be a deep black, a dark dun, a good bright blue, with well-defined black bars across the wings and tail, or a pure white.

"STANDARD OF MEASUREMENT.

"We now proceed to give the standard of measurements which ought to be possessed by birds with pretensions to rank high in the fancy:—

LENGTH OF SKULL AND BEAK.—In the cock, not less than two inches and three quarters, or in the hen than two inches and five eighths.

WIDTH OF SKULL.—This should not exceed half-an-inch, measured at the back of the head behind the eye-wattle.

LENGTH OF BEAK.—To be measured from the front of the eye-ball to its point. In the cock, not less than one inch and three quarters; or in the hen, one inch and five eighths.

SIZE OF WATTLES.—Measured around the upper and lower wattles, at their widest

circumference. In the cock it should not be less than four inches, nor in the hen less than three inches.

EYE WATTLE.—This, without being flattened out, should be the size of a shilling.

LENGTH OF NECK.—The length of neck, measured from its junction with the shoulder to the head, should be four inches and a half.

LENGTH OF LIMB.—The limb, measured as in a Pouter, should be six inches and a quarter.

LENGTH OF FEATHER.—This should be measured, as in a Pouter, from the tip of the beak to the end of the central tail-feathers. The cock Carrier should measure sixteen inches; the hen fifteen and a half inches.

"The above measurements may be taken as constituting the standard for black and dun Carriers; they are at present in advance of the blues and whites; and in awarding prizes, these latter should have due allowance made them.

"NUMERICAL VALUE OF PROPERTIES.

SKULL.—Length measured from front of eye-ball to back of head, 4; flatness, 7; dent, 2; width, 4; straightness, 4.—Total 21.

BEAK.—Length, 4; thickness, 4; straightness, 4.—Total 12.

BEAK WATTLE.—Circumference, 6; tilting, 6; distance between eye and wattle, 4; shape, 4.—Total 20.

EYE WATTLE.—Roundness, 4; softness and fineness of texture, 6; size, 6; regularity, 4; prominence of eye-ball, 4.—Total 24.

CARRIAGE, 12.—We attach much importance to this property, as without it a Carrier, especially when old, looks anything but attractive. An aged bird that has had this property will show it on being roused. Carriage is also generally accompanied by a good neck, a long limb, and always by a well-shaped body. If a bird exhibited loses by want of style, it may be fairly said that it is not desirable to show a bird that cannot show itself.

NECK.—Length, 4; thinness, 4.—Total, 8.

THINNESS OF JOWL, 4—WIDTH OF SHOULDER, 4—LENGTH OF LIMB, 4—LENGTH OF FEATHER, 6—COLOUR, 4.

"The total value of all the properties, as thus estimated, amounts to 119."

The National Columbarian Society includes within its members many of the most eminent Carrier amateurs of the present day, and we cannot, therefore, have a higher authority on the standard points of the breed as at present estimated amongst fanciers.

To breed Carriers to a high degree of perfection, the same general principles must be followed that were laid down for the rearing of Pouters. Absolutely perfect birds are so few in number, that they can rarely be obtained to match together; consequently, in pairing the birds, care should be taken so that the deficiency of one parent may be counteracted by the good properties of the other; and two birds showing a tendency to the same defect should never be mated together.

In colour it is more usual to match up a black and a dun than to pair two blacks or two duns together. It is generally supposed that a more brilliant black results from this mode of breeding than when two blacks are matched up. As pied Carriers are not so much valued as those that are self coloured, the white birds are generally kept distinct.

It is a singular fact that red or yellow Carriers rarely, if ever, make their appearance at our shows. It is said that numerous attempts have been made to breed yellow Carriers, by crossing heavy yellow Dragons with dun Carriers, but always without success; the yellow birds produced, even after careful selection for some years, being always very deficient in the various properties. Never having tried the experiment, we cannot speak from personal experience, but should imagine the difficulties in the way of the attainment of this object not to be insuperable.

Carriers do not require any very special management in respect to nesting-places. Their nest-pans should be large, and the birds should have food supplied in boxes; for if the beans or peas are scattered on the ground, the best birds will be nearly starved to death, as from the size of the wattles they cannot see before them to pick up a single bean or pea, and can only feed freely by having a food-box, into which they can plunge their beaks.

The extremely straight beaks that we see in many Carriers are somewhat indebted to artificial proceedings for their perfection. If a promising bird has a hooked beak, the custom amongst the cleverest of the fanciers is to straighten it whilst the bird is still young, and the bone and horn soft and flexible. This is done by putting a smooth-worn shilling into the mouth and gently pressing the upper mandible, so as to straighten it; this operation, which must be performed with great care and gentleness, is repeated day after day until the beak is duly improved.

In many of the older treatises an inferior variety of the Carrier was described under the name of the Horseman, but it had no qualities that distinguished it from the Carrier, except that of inferiority of every property, and consequently it does not call for any special description. The term "Pouting Horseman" was originally applied to a cross-bred mongrel between the Horseman and the Pouter, but is now frequently given to a small variety of the Pouter.

The term "stout birds" is frequently applied to Carriers, and amateurs of this breed are not unfrequently known as "stout-bird fanciers."

CHAPTER VIII.

THE DRAGON.

THERE is perhaps no variety or breed of pigeons respecting which there has been more dispute than the race known as Dragons. The variety that the Dragon most closely resembles is unquestionably the Carrier, and it is stated in the older works on pigeons, that it was produced by mating a Tumbler with a Horseman or a Carrier. Thus Moore writes, "This pigeon is absolutely and without dispute a bastard strain, being bred originally from a Horseman to a Tumbler, and by matching their breed often to the Horseman they will obtain a tolerable degree of stoutness." But whatever may have been the case previously, at the present time the breed is firmly established, and has its own distinctive peculiarities—peculiarities that it would take many generations of careful breeding to produce. It would therefore be a very unprofitable task to try to produce anew such a race of birds as those now known as Dragons.

The Dragon, as at present shown, is a bird of above the average size, with a bold spirited upright carriage; the neck is held erect, and the wings closely pressed to the sides. Its attitude and movements indicate great muscular strength and the capability of vigorous and rapid flight.

The characteristics of the head are strongly marked. The eye is large, full, and in the blue breed of a brilliant orange red; the eye wattle small, neat, and circular. The beak wattle is small, neat, and should be tilted forward from the forehead. The beak is black, tapering, and slightly curved, differing very much in its character from the elongated "box beak" that distinguishes a Carrier. The plumage is more firm and dense than in any other variety of fancy pigeon. The wings are fully developed, not only as regards the bony framework and muscle, but also in the quill or flight feathers.

From the close character of the plumage of the neck and body the wing stands out from the breast, and gives an appearance of great firmness and strength to the bird.

Mr. Jones Percival, one of the most ardent admirers and successful breeders of this variety, states:—

"My idea of what a Dragon should be is as follows:—In a blue Dragon the colour should not resemble that of a light blue Owl or Turbit, but should be a dark sound blue; the bars on the wings should be perfectly black and broad; the metallic lustre of the neck should reach as low down in front as the point of the

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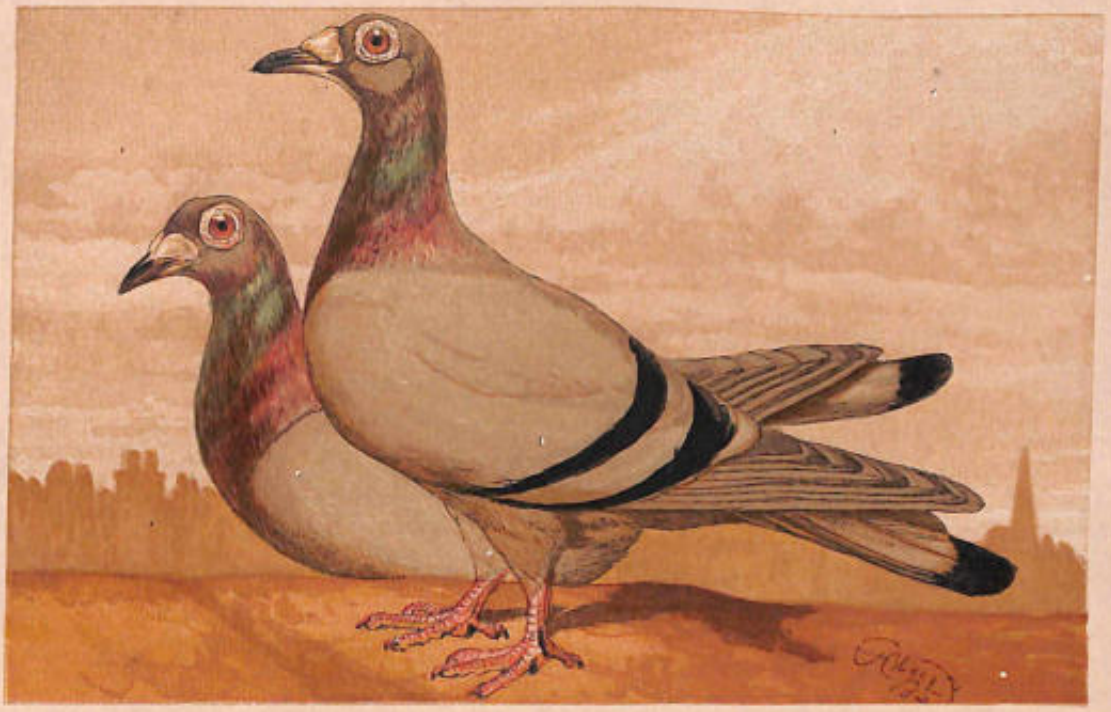

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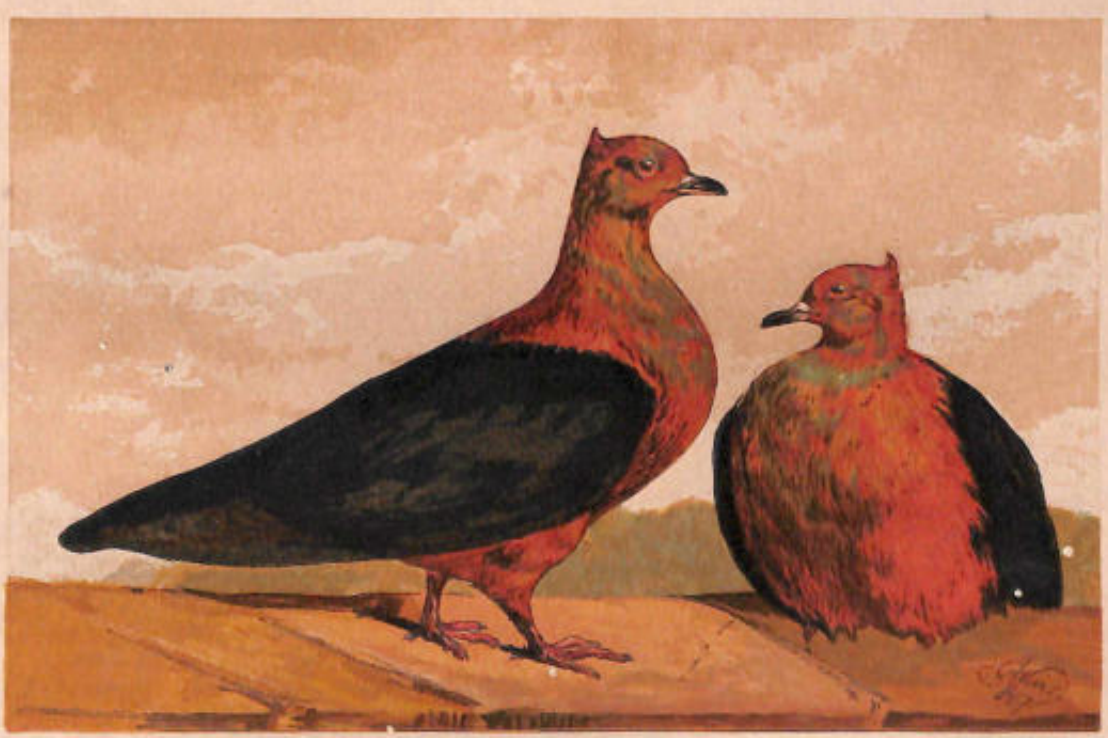


ARCHANGELS.

LEIGHTON, BROTHERS.

breastbone; the head should be long, straight, and narrow, and the wattle of the eye perfectly round and free from that irregular pinched-up appearance too frequently seen in birds of this breed. The beak should be quite black. In speaking of the feathers I must not omit noticing the white rump, which I regard as a great defect; for I contend that a Dragon may just as well have a patch of white on the shoulder or elsewhere as on the rump; and if the white rump be correct in the blue, why should it not be equally so in the red or yellow birds? My idea is that a Dragon, even if perfection in all other points, should be disqualified from taking prizes if it be white-rumped, it being a foul-feathered bird."

Any opinion coming from so good a fancier as Mr. Percival must command attention; but in some respects other amateurs differ from him. In a blue Dragon the plumage should be identical in colour with that of the wild Blue Rock, the origin of all our breeds. The European race of Blue Rocks have white rumps; the Indian have the slaty blue that Mr. Percival so much admires. No doubt all breeders would prefer a blue to a white rumped bird, but few judges would consent to disqualify the latter; nay, more, it is almost certain that if required to judge between two pens, one containing white-rumped birds of high excellence, the other blue-rumped birds of inferior quality, as regarded carriage, symmetry, properties of the head, &c., they would not hesitate a moment to choose the former, whether for breeding purposes or for exhibition.

Many fanciers have a great admiration for this breed of birds on account of their symmetry, the grace of their carriage, and the rapidity and vigour of their flight.

The blue birds, if well marked, have, generally, a preference over those of other colours, either red, yellow, black, or white. The wonderful gamecock-like symmetry and hardness of feather that distinguish the best blues is rarely, if ever, seen in Dragons of other colours. The yellows and reds are, generally, very broad-headed; and whites and blacks are too often merely coarse-wattled, half-bred Carriers, that offend the eye of a true London Dragon breeder.

With regard to management, Dragons require no special care; they are such admirable parents that the commoner specimens are constantly employed in rearing the young of other varieties. Formerly, pure-bred Dragons were largely used for conveying messages, but other breeds are now more extensively employed, as described in the following chapter.

The name of Skinnum is given by the London fanciers to the mongrels bred between a Dragon and any common pigeon. Many of these birds are strong rapid flyers.

CHAPTER IX.

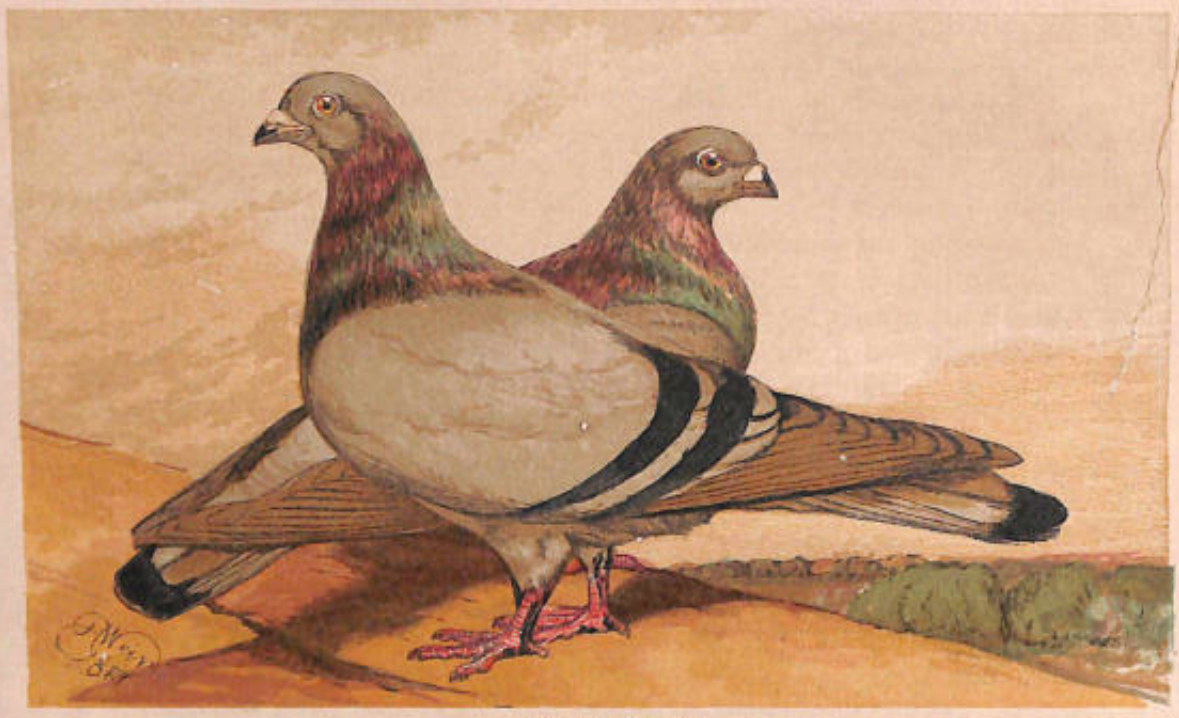
HOMING BIRDS, OR LES PIGEONS VOYAGEURS—ANTWERPS—SMERLES, ETC.

HAVING described the breed known as the Carrier, and the varieties allied to it, we have now to consider the different kinds of Homing pigeons, or those that are remarkable for their powers of flight and their attachment to the home in which they have been reared and first flown. There are numerous varieties that exhibit this peculiarity, such as the Dragon, the ordinary flying Tumbler, and the Skinnum, or mongrel race, between these two breeds. Among the pure breeds that can be flown good distances may be mentioned that called the Owl pigeon. But the varieties in which this homing faculty is developed to the highest degree are unquestionably the different races of Belgian birds, which are termed in England by the general name of Antwerps, and in Belgium are known as Smerles, Cumulets, Demi Becs, &c. Of these varieties the Smerles are the most important, as being the best known, and we therefore reproduce the following description from the pen of the editor, Mr. Tegetmeier, who writes :—

"From the fact that many of the breed come from Antwerp, they are not unfrequently known as Antwerps or Antwerp Carriers, and under the first of these names often have a class given to them at the poultry and pigeon shows; a very absurd arrangement, as they have no qualities that can afford any criteria for a judge to decide upon in a show-pen.

"The Smerles are rather small birds, and look very much as if they had been originally bred from a rather coarse blue Owl pigeon, crossed with a Blue Rock. The head is arched, and the skull capacious, indicating a full development of brain, and offering a striking contrast to the flat narrow skull of the English fancy Carrier. The most striking characteristic of these birds is the firmness and great breadth of the flight feathers of the wings. These overlap each other to a great extent, and afford a strong firm wing with which the flight is urged. The keel of the breast-bone is deep and well covered with strong muscles; and there is altogether an absence of any offal or large development of any part not used in flight.

"In rapidity and power of flying these birds far exceed any other variety of pigeon with which I am acquainted. When I kept a large number I have often enjoyed watching the flight dart off in a gale of wind; and, after seeing them apparently swept away by the blast, witness them come back in the very teeth of the gale with almost the same ease and rapidity as they would have done in a calm.



ANTWERPS

SUABIANS.

"This power of flight is conjoined with an attachment to home that is not surpassed by that of any other pigeon. As an example of this, I may state that I kept a strange pair for two years—the first year in confinement, the second with one wing of each bird partially cut. At the expiration of that time the wings moulted, so that the birds gradually recovered the power of flight, and circled round with the others; but when the complete restoration was effected, my place knew them no more.

"In describing the Smerles, I have said nothing whatever respecting their colour. The Belgian amateurs do not place the slightest value upon this property; they match up birds without any regard to colour, and the result is that the Smerles can rarely be depended on for breeding true to the colour of the parents. Speed and endurance are the objects to be attained, and colour is altogether disregarded —another proof, if any were wanting, of the absurdity of offering a prize for a pair of well-matched Antwerps in a show-pen—a prize which is generally given to a pen of birds that would never be seen again if let out fifty miles from home. There is one colour, however, that finds but little favour with the Belgian amateurs, and that is white. This dislike is not an unreasoning prejudice, but depends on the fact that white birds are more conspicuous as they fly than those of darker colour; and, consequently, are more apt to be destroyed by hawks and sportsmen. Setting whites, therefore, on one side, there is but little preference shown to any colour; and mealys, blues, chequers, blacks, and blue or black pied are all looked upon with equal favour, if they possess the requisite power of wing to fly with equal rapidity. Some of the flying birds seen in this country are frilled very much like an Owl or Turbit; but I prefer birds without any such irregularity of plumage, as it cannot but interfere with their easy and rapid passage through the air.

"As it may be interesting to read another description of these birds, I will translate that of the editor of *Le Pigéon*. 'Smerles,' he writes, 'are the short-beaked pigeons of the province of Liége. They are remarkable for their intelligence, and also for the size of the skull and the well-developed structure of the wings. When two years old they are capable of returning from Bordeaux to Liége or Verviers (a distance of over 500 miles) in twelve hours, provided the sky be clear and the wind favourable. In bad weather they return the following or the third day. The journeys from Tours (330 miles), Châtelleraut (365 miles), and Poitiers (380 miles) are performed by the same birds in eight hours.'

"With regard to the value of these birds in Belgium, it is stated that a couple of young Smerles, warranted bred from birds that have been flown long distances, sell for 100f.; and a pigeon which has carried off several prizes in the long distance matches will realize even as much as 500f., equivalent to about £20 English. Some idea may be gained of the enthusiasm with which the flying fancy is pursued in Belgium, when the fact is stated that there are 150 societies or clubs offering prizes to be flown for, and that these include nearly 10,000 amateurs.

"I recollect a fact that shows the importance attached to these birds in Belgium.

The railways of Belgium are partially under the control of the State, and, on one occasion, representation was made to the Government officials requesting them to arrange a low tariff of charges for the baskets containing the pigeons that were being practised or trained for the long matches.

"The training that these birds undergo is very severe. The young birds are taken to gradually increasing distances as their powers of flight increase, so that eventually they are acquainted with all the conspicuous landmarks of the long journeys. If it is attempted to train them too rapidly, or by too long stages, many of the birds are lost; whereas, by careful training, as practised at Liége, only ten per cent. are lost in short courses, and only fifty per cent. even in very long distances. In this province they do not fly the young birds of the year more than seventy miles, nor ever attempt more than 200 miles the second year, leaving the longer and more severe distances for the older and more mature birds, that have acquired full development and experience.

"With regard to the faculty that these birds possess of returning home from long distances, I believe more erroneous statements have been written respecting it than on any other subject connected with pigeons. It is usually attributed to some mysterious power or instinct that these birds possess, and that is not possessed by Turbits, Fantails, Jacobins, or other varieties. I believe that instinct has nothing whatever to do with the homing power, but that the birds find their way solely by observation; and I ground my belief on the following facts:—

"Any peculiar instinct—such as that of nest-building, power of migration, &c.—bestowed on any species, is equally bestowed on all the individuals of that species, and not on a few only; thus, all swallows migrate, but all pigeons do not return home from a hundred miles' distance.

"Instinct is the same in all cases. All swallows fly *south* in autumn; but the homing pigeon can return home north, south, east, or west—a variation in action that is incompatible with the notion of an unreasoning instinct.

"Pigeons must be regularly trained by stages, or the best birds will be inevitably lost if thrown one hundred or two hundred miles.

"The best birds will refuse to fly in a fog; nor will I ever believe, except from personal experience, that a bird will fly home in the dark. I have tried many experiments, and lost many of my best birds in so doing. On one occasion I took a bird, that had often flown fifty miles, to a distance of five miles, and threw him on a foggy day; he at once settled at the top of a house, and remained there until the fog cleared off. On another occasion I let two of my very best birds loose after a show at the Freemasons' Hall, at four o'clock P.M., early in January. One perched over the door, and when driven up, flew on to the opposite house. Of the two only one ever returned home, the other, probably, falling a prey to the cats.

"To any one who has ever been in the habit of flying these birds the idea of instinct is absurd. A bird thrown in a new locality flies round and round in gradually-increasing circles, until at length it descries some familiar object, and

then, and then only, darts off on its homeward flight. Throw the same bird again, in the same locality, and if a good intelligent bird there is no wheeling round, but, the road being known, he is off instantly.

"I know I shall be met by the fact that no bird can see two hundred miles, to say nothing of five hundred. In that I perfectly agree; but no bird will return home two hundred miles, or even one hundred, without he has been trained by stages on the road. Few persons have any idea of the extent of vision from an elevated point of view. Mr. Glaisher stated some time since that at half a mile elevation in his balloon he saw the whole course of the Thames, from the Nore to Richmond, in one view. And I may remark that as the earth's surface on a dead level curves eight inches in a mile, and as the curve increases as the square of the distance, it is very easy to calculate the range of vision from any altitude. Thus, at a height of a little above four hundred feet, the extent of vision, even if the surface were a perfect level, as that of the sea, would be twenty-five miles on every side. But in every land view there are prominent objects that can be seen at much greater distances; and no one who has ever flown his pigeons but must have observed them looking on all sides, turning the head as they wheel round and round, until they discern some familiar object. In all questions that do not offer a ready solution there is a disposition to refer the effect to some mysterious agency beyond human ken. It is much easier to cut short the question of the homing faculty of pigeons, and call it instinct, than to investigate the facts of the phenomena."

In addition to the Smerles or Liége birds other varieties are extensively employed in Belgium, so that the flying pigeons of that country may be regarded as a very mixed breed. M. André Coopers, Secretary of one of the Belgian societies, gives the date of origin of the Pigeon Voyageur of Belgium as about fifty years since, and attributes it to the crossing of the Cumulet of Antwerp with the Smerle of Liége. The Cumulet he describes as being of Flemish origin, with white eyes, and as having the habit of flying so high as to be lost to sight for several hours.

The Smerle he states to be of Walloon origin, and having the same dimensions as the Cumulet, only a little shorter, but with a short beak, and having several recurved feathers on the throat. In flight he states that it neither rises so high nor flies so long as the Cumulet, but that it is more rapid. Several years after the date above mentioned, pigeons were brought to Belgium from England; these were distinguished by their beauty, extreme strength, and large eyes with a white flesh around the eyes and beak. In Belgium, these were called Bec-Anglais, a name they still retain in that country. They are evidently the birds known in England as Dragons. By judicious crossing of these three varieties, writes M. A. Coopers, products were obtained which were stronger and better organized than the typical races, and the present Homing bird was thus formed.

This cross was first carried out at Antwerp and Brussels. At Liége and Namur, for several years preference was given to the pure races. But it was not until

after this crossed breed had been originated that the long distances now so commonly passed over were flown.

To produce good birds, and to continue the race, judicious crossing, continued to the right point, is requisite. M. Coopers recommends crossing first a Bec-Anglais or Dragon with a Smerle or a Cumulet; and the products of the cross with the Smerle, when a year old, to be crossed with a Cumulet; or the cross-bred Cumulet and Bec-Anglais to be crossed with a Smerle.

The half-bred Bec-Anglais with Smerle or Cumulet, is called a Demi-bec. The following generation, bred again from a Smerle or Cumulet, is called a Quart-bec. The Demi-bec is strong enough to make voyages, but not of any very great distance. The Quart-bec, though smaller, is a more excellent long-distance flyer, and may with success be crossed again with Smerles or Cumulets. Although many amateurs breed birds having a little more of the character of one or other of these original varieties named, or of a particular colour, these variations do not affect the good qualities of the race.

M. Coopers says that it is not desirable to hatch flying birds after the end of August, as the young pigeons do not make their full and regular moult, consequently cannot be trained the same year; and have not, during the following year, the value of young that are more timely bred.

On the other hand, young birds hatched before April suffer from cold before being perfectly fledged, and want of food during the long nights when the parents cannot feed them.

During many years, writes M. Coopers, people have believed that pigeons always direct their flight towards the north, but experience has demonstrated the contrary, for they come back with as much ease from north to south as in the opposite direction. The circumstances that have given rise to this supposition are, that pigeons trained at first for journeys from the south, have been suddenly sent to great distances towards the north, and the greater part of them have been lost; but, prepared in the same manner in the north as in the south, they come back equally well from a similar distance. Journeys made from London, Birmingham, and Hull, to Brussels and Antwerp, have demonstrated this.

It is well known that pigeons direct themselves by sight to the houses where they were reared. The Homing pigeons of Belgium, when liberated from the baskets in which they are forwarded great distances from home, fly round together; of those which take a wrong direction, a certain part return to the spot the next day, and are captured there, proving that they recognize even a new locality in an instant.

The Cumulets of M. A. Coopers are also known as Volants or Highflyers: of these birds Mr. Kenrick, of Bruges, informs me:—"The true-bred Volants are either black, white, or white with a little red on their necks and bodies. They have even whiter pearl eyes than Tumblers, and the black pupil of the eye is extremely small. They are most extraordinary birds to fly high, and have been known to keep on wing nine, ten, and eleven hours at a stretch. Their heads are not what is termed 'mouse,' but are more elegantly shaped than Tumblers.

The best are clean-legged birds, but occasionally they are to be seen with feathered legs; but these are probably cross-bred. Two birds will fly together as well as a flock, which I do not think is generally the case with Tumblers."

Dr. Chappuis, a Belgian physician, has published a long treatise on the management, rearing, and training of the Homing pigeons that are flown so extensively in Belgium. The treatise contains much information that is valuable alike to the naturalist and to the pigeon fancier.

The following is an abstract of the chapter on the training of these birds. It will be seen that the methods adopted by the Belgian fanciers differ from those followed in England, the training being more sudden and severe. All experienced amateurs agree with Dr. Chappuis in the desirability of not overworking the birds when young, and of using the old birds only for long flights :—

"In training young pigeons to fill up the vacancies left by the loss or death of the old ones, it is desirable to allow them to make several trial flights. Though a pigeon at first sight may appear good, it may, nevertheless, have some defect which renders it unfitted for the purpose for which it is designed. By observation we can tell whether the wings of a young pigeon are well formed, but we cannot thus learn whether it has good sight, or whether its faculties are well developed; whereas the first trial to which the bird is subjected will satisfy us on these points.

"A pigeon two or three months old, counting from the time when it leaves the nest, may be able to perform the journeys; but it is preferable to wait till it is five or six months old; and, in practice, it is the pigeons hatched in March, April, and May which are subjected to these trials, which take place towards the end of August, or in September. A first flight of five to eight miles is flown; the second, three or four days after, will be double the length. In this manner, in five or six trials, a distance varying from 150 to 180 miles will be arrived at as the length of the flight.

"These trials are amply sufficient, for the incapable pigeons will be lost on the road. The best will have shown their rapidity and excellence. A bird in training, which even in good condition has allowed itself to be constantly distanced, ought not to be kept, although it is possible that it may improve; as it happens sometimes that a pigeon for several years does not distinguish itself, and all at once gains several successes. A good deal is often said about these exceptions, but in general the best birds may be chosen after the early trials. A very good pigeon shows its superiority as well in its youth as at a more advanced age. In preserving very ordinary pigeons, the race is not being perfected.

"In certain localities young pigeons are more severely exercised in trials which commence from the month of July; these increase progressively in difficulty, till at last the pigeons are made to fly from 300 to 400 miles. That this manner of acting, by multiplying the number of contests, augments the pleasure, is incontestable; but that the breed becomes the better for it is very doubtful. A pigeon does not come to full strength till it is three years old. If in its youth it has been

subjected to too severe exertions, it becomes easily exhausted; and at the age of four or five years, when it ought to possess its greatest vigour, it begins to decline, a journey of moderate length tires it, and if it does not remain on the road, it can scarcely follow even the last of those in the flight.

"I much prefer the system of those amateurs who the first year submit their young pigeons to only short trials, allow them to form and develop during the second, and not until the third year permit them to make a journey of 300 to 400 miles. Thus they always possess good birds, which can with advantage take part in the contests where long distances are flown.

"Though various plans are followed with regard to the training of the young pigeons of the year in the different societies, it is not so with regard to the old ones; that is to say, the pigeons of four or five years old, which it is proposed to employ in the contests. It is an almost universal rule that these last, after three or four daily trials, should make the journey from Paris to Belgium before being sent to any more distant place. This rule is not, however, without exception, and some experienced amateurs omit the flight from Paris from their training. When the weather is favourable this journey is mere play for the pigeons, but if the wind is contrary, or circumstances are unfavourable, it fatigues them much, and may be prejudicial to them when the day of the contest comes—a day on which each bird ought to possess all its physical strength.

"This consideration leads us to inquire into the conditions under which a pigeon is best fitted to take part in the contests.

"As the great races take place in the second half of the month of July, it is desirable that the moulting of the birds should be retarded as much as possible. Indeed, at this time one frequently sees many pigeons which have only three or four of the largest winged feathers to lose. This condition is to be lamented on two grounds: first, the absence of a large feather is more unfavourable than that of a small one, the long feathers increase in length from the inner to the outer ones, so that the second is more important than the third, and so on; in the second place, when the pigeon has arrived at the stage of its moult that there are only three or four feathers left, it is on the point of losing its scalpulary feathers and its wing coverts; the fall of these last constantly takes place in a rapid manner, and it may be so much accelerated by the short imprisonment of the birds in the baskets in which they are carried, that when they are set at liberty they may be found entirely deprived of an important instrument of flight. By chance a bird far in advance in its moult may succeed in gaining a victory, but such cases are exceptional, and will occur more rarely the more laborious the flight. A pigeon which has only commenced its moult, and has lost but three or four of its feathers, possesses a wing without gaps, and is in more favourable condition.

"The majority of fanciers have more confidence in male than in female birds; ordinarily, three-fourths of the birds employed in a flight are males—not that females are less faithful or less rapid than males, but because they are less often

in good condition. For example, it is known that at the approach of the time of laying, and also during the two or three days which follow it, it is dangerous to employ a female. If she lays her two eggs in the basket in which she is carried, the state of weakness in which she arrives will cause her to fail, or, at least, will not allow of her taking a brilliant part in the contest. In the same way the female, being more employed in hatching than the male, perceives sooner the movements of the young pigeon in the egg; she feels that the time of coming out of the egg draws near, and prepares in consequence; the glands of the crop swell and secrete the milk which she gives to her little ones in the first days after their birth. If at this moment she is taken away from her maternal cares, to be shut up for several days in a basket, she will become ill, will cease to eat, and in all probability will be unable to regain her home. This last circumstance is also unfavourable in the case of the male bird, because he disgorges the same kind of milk for his little ones.

"It is also necessary to watch that the pigeons should not exhaust themselves in rearing too many young; as a rule, only one young pigeon should be allowed to those parents that are about to take long flights.

"Thus, during the two or three days which precede or follow laying, and also the hatching out of the young, the female must not be employed; nor must the male during the three or four days which follow the hatching. It is often in the power of the amateur to defer the occurrence of these unfavourable circumstances. As the day of departure is known a long time beforehand, he may, by taking away the young, accelerate the period of a new laying, and also, a day or two before the hatching out, he may place a young pigeon of three or four days old in the nest, so that the parents may disgorge the soft food which fills their crops.

"Besides the times indicated above, the question has been much agitated whether pigeons ought to be flown while they are sitting, or when they have young ones less than eight days old.

"At last the great day arrives; the pigeons intended for the struggle must be caught in order to be sent to the society, where they are to receive the marks indicating their engagement. This operation of taking the pigeons in a closed pigeon-house appears very simple, and ordinary people would not imagine that it could be made an object of discussion. There is a plan employed which consists in catching the pigeons in their flight by means of a small net; the Belgian pigeon-houses are too small to allow of the use of this instrument, and even if they were larger it might not be generally adopted.

"As a general rule more can be got from animals by affection than by cruelty, and pigeons are no exception to this. When an amateur takes care of his birds himself, when he never frightens them by abrupt and hurried movements, the pigeons know him, and will allow themselves to be taken with the greatest facility. We have even seen the master's dog go into the pigeon-house without a single pigeon manifesting the least uneasiness.

"But all amateurs have not the talent or the leisure to tame their flying birds to

as great an extent. To catch the birds easily some have divided their pigeon-house by a movable partition; they bring their pigeons into the narrow space shut in by this partition, and in a few minutes their choice is made. Others shut out the light from the pigeon-house in such a manner as to produce darkness so great that the pigeons remain motionless. It is possible then to catch them without risk of pulling out any feathers, or even of ruffling them.

"Too many precautions cannot be employed during this operation, for a pigeon is rendered unfit for the contest simply by breaking one or two of the important flight-feathers.

"When the competitors are shut up in a basket, it is well to pass them in review, and to make sure of the state of their wings. Attention should also be directed to the feet, in order to free them from any hardened dirt which may adhere to them. The feet, particularly those of large pigeons, often collect dung, which becomes hard in the pigeon-house. We can understand that this weight may overload a pigeon in its flight, and therefore attentive amateurs pass the finger, soaked in oil, over the lower surface of the bird's foot, so that excrements may not adhere to it."

The chapter descriptive of the present state of the pigeon societies in Belgium is very interesting. Dr. Chappuis remarks that the increase of railways has greatly extended the number of pigeon matches. Numerous societies have been established, and in some districts of Belgium there is scarcely a village that does not possess one.

Since the formation of the first societies, when pigeons were carried on the back in a basket divided into compartments, considerable improvements have been made in their conveyance; and great care has been taken in the construction of the boxes and baskets in which the pigeons are carried.

The baskets are generally between four and five feet long, three feet wide, and about twelve inches high, and an opening about a foot long, shut by a movable door, is placed in the middle of one of the long sides. The bottom of the basket is covered with a thick coarse cloth; the baskets are made of stout willows stripped of the bark; these are placed at a distance of about one inch and a half from each other, so that they are wide enough apart for the pigeons to put their heads through to drink, but so close that no one can put in his hand to steal the birds. Before the birds are placed in the baskets the bottom is covered with a thin layer of perfectly dry tan; sometimes chopped straw or long straw is used instead, but the latter does not answer well, as the dung does not dry quickly, and the pigeons soon get very dirty. The chopped straw is too light, and it readily accumulates in one corner, leaving the remainder of the basket without litter; consequently the tan is much to be preferred, as it adheres to the cloth at the bottom, and dries the damp dung.

In other provinces of Belgium baskets of another kind are used; they are not made of openwork, but of closely-woven willows, with square openings on one side, through which the pigeons can drink out of a vessel fastened to the outside.

These latter baskets have the great advantage of being perfectly closed, and of lessening the liability to the loss of the birds from feline and other depredators. But they are heavy, and their carriage is more cumbrous and expensive.

At Liége, the birds which are flown from a distance are always accompanied on the railway by a skilful person, who looks after them on the road, and supplies them with food and water. In other places the boxes are addressed to the station-master or to the mayor of the town which has been selected as the commencement of the return flight; a label is fixed to the baskets requesting the railway authorities to supply water to the birds and to give them some of the grain sent in a bag for that purpose.

The cost of sending a man with the pigeons is considerable, his expenses averaging six shillings per day, in addition to his railway fare and the percentage he receives on the value of the prizes flown for. All these items on an average amount to nearly £30 for each society every season.

These expenses are avoided by the second system—that followed in the provinces of Flanders and Brabant. The transport of pigeons is also made in a more rapid manner, for they are sent by express trains; while, in Liége, the ordinary trains are employed, in order to save expenses in the journey of the man who is sent with the pigeons. Another advantage is, that two or three amateurs can, if they wish it, join to have a supplementary flight of their birds; whereas, if they employ a man, the matter would be more difficult to organize, and the expense would be too much increased.

Thus, by the one system we can have cheapness and rapidity, and by the other we secure care being taken of the pigeons both during their journey and at the time of letting them fly.

After making trial of both plans, and weighing the advantages and drawbacks of each, the balance, at least in Belgium, seems to be in favour of the plan of employing a man to take charge of the birds. When the pigeons are addressed to the care of the station-master it is a rare thing for them to be flown at the time desired; a delay of several hours makes the amateur who expects them impatient—the pleasure which he promised himself becomes a source of annoyance to him. The baskets with the birds may remain neglected in the station; if rain comes on the pigeons become wet; the dung which covers the bottom of the baskets dirties their plumage, and may clog their wings to so great an extent that half of the birds may find it impossible to perform their flight.

On certain Sundays, in a favourable season, three or four hundred baskets may arrive at the same station; this overwhelming amount of responsibility puts the railway people in a bad temper; the baskets are tossed about; if they fall they are allowed to remain on one end, and the poor pigeons are heaped up in a corner one upon the other. This is not the only inconvenience of this overcrowding; some baskets may be intended for a more distant place, yet they pass unperceived and are discharged with the others. Occasionally baskets of pigeons have been entirely sent wrong and lost. The proprietor desires to recover their value; but

in his efforts to do so he is sent from pillar to post, till the intentional slowness of administrative forms makes him lose heart, and he prefers to suffer his loss rather than pursue a restitution surrounded with so many difficulties.

The expense occasioned by employing a man to look after the birds will not be useless, so long as the means of transport by the railways remain so uncertain.

As a remedy for these evils Dr. Chappuis suggests that an agency be established, with correspondents in the distant towns in the south of France, to whom the pigeons might be consigned, and, when received, fed and liberated at the desired hour.

It may be of interest to learn the exact details of the training of the birds for a long homing match, and, therefore, we have much pleasure in quoting the following from a letter from Mr. Kenrick, who, writing from Bruges, states:—"There is a society here that fly pigeons every year for prizes. The longest fly last year was from Bayonne, on the borders of Spain: twenty-one pigeons were despatched off; three only returned after some days. This year they are to be let off at Bordeaux, 567 miles from Bruges. The following are the stages, and the dates on which the birds are to be let off: Thourout, 11 miles from Bruges, is the first stage; the birds are to be thrown on May 7. The next stage is Rumbeke, 21 miles, date May 10. Then follow in order, Korbryke, 32 miles, May 14; Douai, 69 miles, May 20; Amiens, 123 miles, May 27: Paris, 204 miles, June 3; Blois, 317 miles, June 16; Angouleme, 484 miles, June 29; Bordeaux, 567 miles, date not fixed. These are the stages for mature birds. The young birds bred this year will not be put in training until July, and be only flown as far as from Paris."

It appears that this programme is strong evidence in favour of the theory that birds return by observation. If instinct guides the birds, why is it requisite to train them by short stages of ten miles at first, the distances being rapidly increased, as their observation and intelligence are developed? Surely no bird, guided by the so-called unerring power of instinct, would require to be practised three stages before it could be trusted to return home sixty-nine miles.

Again, of the twenty-one birds that were despatched last season from Bayonne, how is it that only three returned to Bruges? Were the others deficient in instinct?—a power that, as we know, does not vary in individuals of the same species.

In 1865 a pigeon match was flown from Liverpool to Ghent, or Gand, in Belgium; the distance in a straight line, as measured roughly on the map, is over 300 miles. Thirty birds competed in the race. They were all let off together at half-past five in the morning. The first arrived at Ghent at ten minutes to six the same evening, having flown the distance in twelve hours and twenty minutes, being at the average rate of twenty-five miles an hour, supposing the bird to have lost no time in starting, and to have flown in a straight line. The second arrived an hour after the first, and six more returned the same evening. Eventually twenty-two of the birds returned to Ghent; eight of the thirty were lost. The

certainty with which these birds passed over England is a convincing proof of the fallacy of the assertion made by the English fanciers that the inferior powers of the English homing birds are due to the climate or weather of this country. The true explanation is evidently that they are inferior either in intelligence or power of flight, or in both, or that their training is not properly conducted.

That shrewd practical naturalist, the late Mr. Wheelwright, better known by his *nom de plume* of "The Old Bushman," writing on the subject, states :—

"I may first remark that my opinion is that this homing faculty in the pigeon is totally distinct from, and clearly conducted upon different principles from those which guide the swallow, the stork, and our other migratory birds over trackless plains and across wide seas, even on the darkest nights, to their breeding homes of the preceding year. This is clearly instinctive, and their flight is guided by an invisible hand and an intuitive knowledge for which it will ever baffle man's ingenuity to account. The swallow requires no previous training for its journey from the south of Europe to Lapland; the homeward flight of the pigeon from any distance is learned by education, and I fancy that no education or training would ever enable the best Antwerp that was ever bred to accomplish the journey which the stork or even the little swallow makes every spring and autumn without any human assistance. I am fully of opinion that no pair of pigeons bred in an aviary, and never let out of that aviary till they were strong on the wing, and then carried a hundred miles away and tossed, would ever find their way home. Still, I do not think that this homing faculty is altogether perceptive, although I fully agree with all Mr. Tegetmeier says about the acute vision of birds. He very properly observes that long instinctive flights are quite unknown to the fanciers who fly matches. I well recollect, in my day—and I suppose the custom is not much altered—that when we began to train our young birds we never tossed one until it had been out some little time with the flight, and had become well accustomed to the sight of adjacent objects. I rarely tossed the young bird for the first half-dozen times at a greater distance than one or two miles from home; and although I did not always use the same place, I always chose an elevated situation for the 'chuck.' I then used to go as far as four or six miles, quickly increasing the distance; and when the bird could come, under favourable circumstances, forty to fifty miles within the two hours, I considered its education complete for any length that I ever used to fly my birds. But of course, if I changed the bird's route, I gave it three or four flights in the direction from which it was to come, before I sent it down for its last flight. This used to be my method; but I may add that I never had a bird come home more than seventy miles to my loft.

"All this, I think, is conclusive evidence that the flying pigeon trusts mainly on its power of vision to carry it home; and as I can well believe that for sixty or perhaps even one hundred miles a pigeon high in air can discern some familiar distant object for which it at once makes, there is little wonder that at that distance the well-trained bird comes home. But birds are frequently flown at a greater distance. Take, for instance, the flight from London to Antwerp—I believe

about one hundred and eighty miles, and across the sea, where there are no landmarks; and, unless we can allow the power of vision in the pigeon to extend so far, we can hardly, I think, depend entirely upon that to bring it home. If we put instinct entirely on one side and trust altogether to vision, the only way I can account for the bird finding its way home is this, that it keeps soaring round and round in wide circles and beating about, till at length it distinguishes in the distance some familiar object or other, which it makes for at once, and when on the right track has little difficulty in finding its way home; and this may very probably be the case, for the flight of the pigeon home is often as nothing compared with that of some other birds, and hardly so quick as might be supposed from a bird possessing the properties of the true Antwerp. But this is only my supposition, and I have nothing upon which to ground my arguments.

"I recollect many years ago—I believe it was about the first time that these Antwerp birds (or, as the fanciers of the day styled them, the 'Twerps') ever were seen in England—that one hundred and ten of them were brought over to London to fly back to Antwerp, for a prize given by the Columbarian Society there, and a bye-bet, the conditions of the match being that the first bird was to reach Antwerp in five hours. At that time my old friend Frank Redmond (who then stood high in the pigeon fancy) kept a public-house in the Borough. It was to his house that the birds were brought, and from there they were tossed. It is now more than thirty years since; and as I write from memory I may make a mistake in some of the minor details of this extraordinary match, but in the main particulars I am right. In the first place, I believe that not one of these hundred and ten birds had ever been up the Thames—I do not think ever before on British land, although doubtless they had been tossed at sea. They came over shut up in large close baskets. They arrived in London on the Saturday afternoon, and were all directly turned out loose into a long room at Redmond's. Of course on the Sunday these little strangers had numerous levées of the London fanciers to visit them, and were scrutinized by the humble partisans of pigeon-flying with as much curiosity as the first favourite for the Derby is by his most aristocratic friends as he strips for that great event. I remember the impression against them was unfavourable, for they had very little in common with the heavy English Horseman. But two properties struck all—the extraordinary length of the flight-feathers, and the snake-like look of the head and neck. The principal colours were blue and chequered, although there were a few mealies among them. They were tossed on the Monday morning, and as the Borough clock boomed out the hour of eight the whole lot went up. The morning was bright and clear, and the wind, which was but moderate, blowing down stream. The birds rose in the air in a compact body, went right over the river, gradually rising higher and higher as they swept above the city, and when they were lost to view appeared to be heading down the northern bank of the river. Several flights were out that morning floating in the air, but these little hardy Dutch adventurers took not the slightest notice of the English birds; and the shrillest whistle and 'whoop strays'—which no one but a true London fancier can

give—would not have called one of them down, or delayed them one minute, when starting on that perilous journey. The match was lost by five minutes, the first bird reaching Antwerp at, I believe, five minutes after one, thus having done the 180 miles in five hours and five minutes. Stragglers kept dropping in at intervals during the whole afternoon, and ten or twelve were lost at sea.

"I can hardly believe that the above-mentioned birds found their way from London to Antwerp with no other assistance than the power of vision alone, although I certainly do agree with Mr. Tegetmeier, that the very fact of the pigeon requiring instruction at the hands of man before it can accomplish even a short distance, proves that it is not gifted with the natural instinct of the wild migratory bird.

"I do not think there is a cleaner-made bird than the pigeon, whether we watch the common dove-house bird, toying with his mate on the ridge of the dovecote in all the purity of his white or mottled blue plumage, or as we gaze in astonishment on the majestic proportions of the Pouter, or the exquisitely beautiful plumage of the almond Tumbler—a beauty which the finest bed of tulips can never rival. The keeping of pigeons entails but little expense, and the lover of these birds has this satisfaction, which no other bird fancier can feel—for he knows that his little favourites do enjoy a certain state of freedom, which the poor caged song-bird too often pines for in vain.

"'And pray, sir, are you in the fancy now?' perhaps the reader may ask. 'No, sir; I have given up pigeons, and taken to eagle owls.'"

Among the false statements which find their way into print respecting the homing birds, none ever exceeded in absurdity the paragraph which announced the return of two pigeons from the Arctic regions. This statement, as quoted by the Rev. E. S. Dixon in his "Dovecote and Aviary," is as follows:—

"It appears that Miss Dunlop, of Annan Hill, presented Sir John Ross, on his leaving Ayr on his chivalrous expedition, with two pairs of Carrier pigeons, an old pair and a young one. It was arranged that he should despatch the young birds when he had fixed himself in winter quarters, and the old ones when he fell in with his missing friend Sir John Franklin, in search of whom he was about to expose himself to Arctic dangers. The gift was kindly meant, but very foolish; the lady had much better have presented the voyager and his crew with an enormous and well-seasoned pigeon-pie to eat, and a barrel of good Scotch ale to drink, on first coming in sight of the ice; for hope deferred maketh the heart sick, both with friends at home and with sailors abroad. On Sunday, the 13th of November, 1850, two strange pigeons were observed flying about the dovecote at Annan Hill, which, being under repair at the time, was unfortunately shut. Suspicion was excited, and on next Thursday they were traced to the seat of a neighbouring gentleman, and one was secured.

"The fact of their being captured *elsewhere*, proves that they were only a pair of stray pigeons, in search of a home they knew not where, and not Miss Dunlop's pigeons come back again.

"The account stated that 'the bird's feathers were ruffled and somewhat torn, showing, very probably, that the despatch attached to it had worn off in the long and weary flight of somewhere about 2,000 miles. Unfortunately, therefore, there is no written intelligence from the explorers. The other bird has not been caught. We remember no similar feat being performed by a pigeon,' &c., &c.

"In the 'Manchester Guardian,' Mr. J. Galloway throws discredit on the whole affair, in the following very sensible remarks :—'Those who know anything of the habits of pigeons, or the careful training requisite to enable them to accomplish long flights, will not easily be led astray by the clumsy invention of some ignorant wag, desirous of practising on the credulity of the public. Two pigeons were said to have been seen at a considerable distance from their cot, because it was shut up. This would be contrary to their habits; *they would remain at their old habitation until nearly famished with hunger*. Again: one of them had the feathers ruffled or disordered under the wing, as if a letter had been fastened there. Now an express flier of pigeons would just as soon think of tying a letter to a bird's tail, as under its wing. The practice is to roll some fine tissue paper neatly round the leg, secured with a thread of silk; and thus the bird can travel, without the paper causing resistance or impediment to its flight. Then, more marvellous still, the creature must have flown 2,000 miles!—a considerable distance of which must have been over snowy or frozen regions. In modern times, no such distance as 2,000 miles has been accomplished by any trained pigeon. The merchants and manufacturers of Belgium have done more to test the capabilities of pigeons than any other people. Their annual pigeon-races produce an excitement almost equal to our horse-races. In 1844 one of the greatest races took place, from St. Sebastian, in Spain, to Vervier. The distance would be about 600 miles. Two hundred trained pigeons, of the best breed in the world, were sent to St. Sebastian, and only 70 returned. In another race to Bordeaux, 86 pigeons were sent, and 20 returned. A strange and mistaken notion prevails that it is only necessary to send a flying pigeon away from home and that its instinct will invariably lead it back. Let any one try the experiment, and send the best bred birds at once from Manchester to Birmingham, and I venture to assert that not one will return to Manchester without previous training, viz., taking them short distances at a time and then increasing by degrees. It has been asserted that pigeons are guided on their return home from long distances by instinct. Instinct is said to be unerring; not so the pigeon's flight. If instinct be the guide, why not fly through foggy weather with equal speed and facility as in clear sunshine? This, it is notorious, they cannot accomplish. When the ground is covered with snow, pigeons seem to miss their points of guidance, and are lost. This would seem to favour the opinion that they travel by sight, and are less indebted to instinct than is generally imagined. Homing pigeons do not fly at night; they settle down if they cannot reach their home by the dusk of evening, and renew their flight at daylight next morning."

In a letter subsequently published, Mr. Galloway writes the following sensible remarks on the subject, which are valuable as coming from a person who is practically acquainted with the subject on which he is writing:—

"Instinct being a primary condition, an unalterable law, uncertainty, hesitation, or mistakes can form no part of a perfect and unimprovable endowment. Instinct is intended as a ready substitute for reason, practice, or experience. The building of a bird's nest is an instinctive operation; the first built is no less perfect than the last. The young of the Carnivora are directed by instinct at once to their natural food; and had they to wait the slow teaching of experience, they must inevitably perish. These are the natural operations of instinct, and are, consequently, independent of all teaching, training, or instruction.

"How then, can it be supposed that pigeons will fly hundreds of miles and return home solely under the guidance of instinct? How can fogs, snow, or mountains effect an unerring faculty? and unless it be unerring it is not instinct.

"It is by no means necessary that pigeons flying by sight should form 'private charts' of a country to find their way home; it is evident they must require points of observation, or why train them by degrees? Did they possess either 'a natural affinity, or attraction,' why should not the whole number flown be operated on in a similar manner? So this process of affinity or attraction will not work, or all should arrive at the same destination. Those persons having most practical experience are tolerably well in agreement on the subject, and the visions of theorists will not alter their practice; knowing they can depend on nothing but sight and a good breed of birds with strong home attachment, they steadily pursue the plan pointed out by Belgian amateurs, and never expect success without offering their birds frequent views of the country, with the necessary accompaniment, a clear atmosphere. By pursuing this method, they do not expect them either to feel their way or be drawn by attraction, but simply hope they may be enabled to see it.

"Is there one advocate of the theory of flight by instinct who will venture to send his birds eighty miles from home without previous training? This would test his theory, though those who believe solely in sight know well beforehand the certain result of the proposed experiment."

The editor's experience of the habits and management of these Homing birds dates from a distant day, and as a description of the modes of racing prevalent some thirty years since, among a certain class of the London fanciers, may not be without interest, he inserts the following account of his first pigeon race, which was originally published in "The Savage Club Papers," returning his thanks to Messrs. Tinsley for their permission to reproduce the article and the illustration by which it was accompanied.

MY FIRST PIGEON RACE.

BY W. B. TEGETMEIER.

The desire for the practical study of natural history, which has been a ruling passion with me from my early youth, was sadly interfered with during many of the years of my boyhood by a long-continued residence in the metropolis. Nevertheless, even under the disadvantages of a London life, I followed my favourite science with a zeal and devotion that might have furnished Professor Craik, had he but known me, with the subject of an additional chapter in his work on *The Pursuit of Knowledge under Difficulties.*

As I could not study the objects of my delightful pursuit in their native haunts, I sought them in the bird-shops of Seven Dials and the purlieus of Westminster. The front area of my father's house was covered with a cord netting of my own making, for wire netting was then unknown; and a choice collection of thrushes and other hardy British birds gladdened the neighbourhood with their song. The possession of pigeons, however,—the objects of my most absorbing passion,—was forbidden. The decoration of the paternal roof with a "dormer," an "area," "traps," and all the appurtenances of pigeon-flying, so familiar to those persons who travel by the Great Eastern Railway, and from their high pre-eminence look down on the Spitalfields weavers and their birds, was not to be thought of on the residence of a respectable surgeon in the Royal Navy within a hundred yards of St. James's Street. But "where there's a will there's a way." Our "doctor's boy" lived in Westminster, over against Tothill Fields Prison. I knew the place well; for with childish curiosity I had on several occasions followed the long string of prisoners, men, women, and even children, that, handcuffed to a chain, and under the charge of two red-waistcoated officers, passed our house every afternoon on their way from Marlborough Street Police Court to the prison. There were no police-vans with drivers in mock military uniforms in those days.

Our boy was a pigeon-fancier, and had a good flight of homing birds, many

of which had "done Gravesend," and some had flown back from the Nore. Here was an opportunity that could not be allowed to escape. I at once entered into a solemn league and covenant with him, paid one shilling weekly as my share of the rent of the loft, and became the possessor of birds of my own.

At times, when John was supposed to be delivering the drugs that were to assuage the sufferings of my father's patients, we were ransacking the regions of Kent Street, Borough, or Brick Lane, Spitalfields, in search of a "blue-beard hen," "grizzled dragon cock," or "mealy skinnum," that was required to complete my stud.

The birds kept by the class of pigeon-fanciers with whom I had become connected were those employed in flying-matches; and I need hardly state that ere long my great ambition was to become the winner of a pigeon race. To attain this end, my young birds, as soon as they were old enough, were entered in a match at a neighbouring public-house. The birds taking part in these contests are entered soon after they are able to fly—the quill or flight-feathers of the wing being stamped with the distinguishing mark of the particular race, and a fixed sum contributed weekly by the owners towards the prize which is to be competed for.

As soon as the young birds can fly strongly their training commences. They are taken day after day to gradually increasing distances from home, and then liberated. In this manner both their observation and power of flight are exercised, until at last they know their way accurately, and can fly back long journeys without loss of time.

In the days I am now writing about, railways were unknown, and many and many are the long walks I have taken with a couple of birds in a brown-paper bag, with a few holes to give them air, and a little straw in the bottom to keep out the sides. On arriving at my destination the birds were set free, when they would rise in the air, and circling in gradually increasing spirals, gaze around until they descried those familiar objects that constituted the landmarks by which they directed their homeward flight.

There are few subjects connected with the habits of animals about which more misconception prevails than respecting this homing faculty of pigeons. Authors and artists seem to have conspired to misrepresent the truth. The first tell us that pigeons return home by a peculiar instinct, and not by sight; whereas every pigeon-fancier knows that if, on their first essays, he takes his young birds long distances, so that they cannot discern any familiar objects, they will only return by chance. The writers on this subject do not bear in mind the fact that the sight of birds is infinitely more acute than that of man; and that they possess a formation of the eyes by which they are able to adjust their sight to near or far-distant objects at will. Nor do they seem aware that a bird raised 130 yards in the air commands a panoramic view, the horizon of which is distant twenty-five miles, even when the surface is a perfect plain.

But the artists are as much to be blamed as the writers. We are all familiar

with the pretty pictures of doves flying into the bosoms of their mistresses with large packets tied under their wings. These pictures have no foundation in nature. Like the German philosopher's idea of a camel, they are evolved out of the inner consciousness of the artists. A pigeon could not fly encumbered with a letter; and when a bird is employed for conveying a message, a narrow slip of paper is written on, rolled round its leg, and secured by a thread. As the leg and foot during flight are drawn up into the soft feathers, the paper so attached offers no impediment to the speed of the bird.

But to return to the pigeon match. The birds entered and trained for the match are, on the day appointed, taken to some distant place, either previously fixed on, or the direction of which may be decided by lot on the morning of the race. The birds competing are then set free; and if well trained and conversant with the road, they return home with wondrous rapidity. Thus, in a match which annually takes place from Southampton to London, the winning birds always perform the journey in less than an hour's time. The competing bird, on alighting at the house of its owner, is instantly captured in one of the traps or in the "area," to which I have before alluded. A fixed time is permitted each owner to convey his bird to the rendezvous, usually the public-house where the "fly" has been organized. This time of course varies with the distance. After securing the "voyageur," the owner loses not an instant in conveying it to the goal. Not unfrequently relays of one or two quick runners are arranged, and the bird is passed from hand to hand with the greatest celerity.

Well do I recollect my first race. The fly was from Gravesend—a favourite spot in that pre-railway time, as being easy of access by steamers. There were ten competitors. The birds had been sent down the river by the first boat in the morning, in charge of three or four persons to see fair play. John was up in the loft on the look-out to catch my bird (the best "grizzle skinnum" I had bred that year) as soon as he pitched. The rendezvous was about a quarter of a mile off; and he was to run with the bird half the distance, whilst I was waiting to convey it the remainder. From the corner where I stood I could see the loft of another competitor. As I was waiting, I anxiously scanned his flight of birds that were being driven up by him with a long light pole as they tried to settle to feed; for, to get them to come into the area directly the racing bird had joined them on his return, they had been kept without food all day. At last I saw his head disappear in the "dormer;" his flight settled. I saw his blue dragon that had returned from Gravesend. The birds all ran into the area for the handful of tares he had thrown in; the trap-door of the area closed. I knew he had caught his bird, and that in ten seconds he would burst from the door of the house, and be first at the Blue Lion. And where was my bird? At that instant John turned the corner, running as though dear life itself depended on his speed. My skinnum was in his hand. Hurrah! the prize was mine; for, living farther from the rendezvous, I was allowed a minute and a half more time than my dreaded competitor, whom I had just seen catch his bird. Before John reached me, my rival rushed from his

door, and with a shout of triumph as he saw me waiting, darted like an arrow on his way. In a few seconds, that seemed to me an eternity, John rushed to me with my bird. I snatched it from his hands, and ran as I never ran before or since, for there was not a moment to be lost. Still, with great speed I was sure of the prize; and I need not say I did my very best. I reached the corner of the street in which the Blue Lion stood, and leaned inwards, like a horse in a circus, as I turned the angle at my utmost speed. But, alas for the vanity of human hopes! An old woman, with a basket of apples suspended from her waist by a strap, was just round the corner; and I came full tilt against her. I am not very heavy; but impetus is the result of weight and velocity conjoined, and what I wanted in one was made up by the other; the consequence of the collision was that the old woman went over backwards, and I went over the old woman. Where the apples went I do not know; but I believe some of the boys round about could tell better than any other persons. My best mealy skinnum, that had virtually won the race, escaped in the collision, and went home again. I picked myself up without loss of time, and looked towards the Blue Lion—only to see my detested competitor and the landlord laughing at the unlucky chance which had robbed me of the prize.

CHAPTER X.

THE COMMON TUMBLER.

THE title of Tumbler, as the word implies, was originally applied to those pigeons that showed an hereditary disposition to turn or tumble over backwards during their flight. These breeds were noticed by Willughby, who wrote in the seventeenth century. He described them as being "small and of divers colours," and stated: "They have strange motions, turning themselves backward over their heads, and show like footballs in the air." All varieties of pigeons, when in good health and high condition, appear to possess an excess of animal spirits that they permit to find vent in some energetic muscular exertion. The quick-flying birds, that formed the subject of the last chapter, dart off in rapid flight, and dash about in the air in eccentric courses, evidently only that they may experience the delight of energetic muscular movement. The birds known as Rollers ascend to a great height in the air, and roll over during their flight from side to side with great rapidity. Pouters and other breeds smite their wings forcibly whilst flying, and so on.

Although the Tumblers, strictly so called, namely, the tumbling birds, those that throw themselves over backwards during flight, have been known for a very long period, the fancy races are of comparatively recent introduction. Even Moore, in his "Columbarium," published in 1735, omits all notice of many of the varieties that have been since highly esteemed by fanciers, and describes Tumblers not so much with reference to their structural peculiarities as to their singular actions during flight. His, the first detailed English account of this breed, is as follows:—

"THE TUMBLER.—This bird is so called from an innate faculty peculiar to this species, which is their tumbling in the air, and which they effect by throwing themselves over backward, after the same manner that the most expert artists in tumbling perform what they call the back spring.

"A Tumbler is a very small pigeon, short-bodied, full-breasted, thin-necked, spindle-beaked, and a short button head, and the irides of the eye of a bright pearl colour.

"The Dutch Tumbler is much of the same make, but larger; often feather-legged, and more jowlter-headed, with a thin flesh or skin round the eye, not unlike a very sheer Dragoon. Some people don't esteem them on this account, though I have known very good ones of the Dutch breed, not any ways inferior to

what they call the English. Others have remarked that they are apt to tumble too much, and to lose ground, that is, sink beneath the rest of the flight, which is a very great fault; but I have observed the same by the English, and am apt to believe that most of the extraordinary feathers have been produced by mixing with the Dutch breed; for it is generally observed that the English Tumblers are chiefly black, blue, or white.

"This pigeon affords a very great variety of colours in its plumage, as blacks, blues, whites, reds, yellows, duns, silvers, and, in short, a pleasant mixture of all these colours with the white. But, amongst all, there is a mixture of three colours, vulgarly called an Almond, perhaps from the quantity of almond-coloured feathers that are found in the hackle: others call it an ermine, I suppose from the black spots that are generally in it; however, I am sensible the name is not compatible to the term so called in heraldry, which is only white spotted with black; yet as the gentlemen of the fancy have assigned this name to this motley colour, I shan't quarrel with them about a term; if the three colours run through the feathers of the flight and tail, it is reckoned a very good almond, or ermine, and is much valued.

"An Ermine Tumbler never comes to the full beauty of its feather till it has twice molted off, and when it grows very old will decline till it runs away to a down-right mottle or other colour.

"These pigeons by their flight afford an admirable satisfaction to those gentlemen of the fancy that have time to attend them and make their observations; for, besides the pleasure they afford by their tumbling, which is very considerable, they will rise to an immense height in the air, so that sometimes the eye can scarcely follow them. I have frequently lost sight of them, though they have been almost perpendicular over my head, and the day has been very clear and serene; yet by a fixed regard of the place where I lost them (for they never ramble far like the Horseman, and, if good, when they are used to each other, a flight of a dozen will keep so close together that you may cover them all with a large handkerchief), I have at length perceived them, but so small that they appeared no bigger than a sparrow.

"At this height they will keep two, three, four, and sometimes five hours together; nay, I have heard it frequently asserted that there have been pigeons of this breed which have flown nine hours when they are up at their pitch. The better sort seldom or never tumble, choosing rather to afford you that diversion when they are more in sight, tumbling very often at the first beginning to rise, and again when they are coming down to pitch.

"I now come to the method of raising a flight of Tumblers; and, in the first place, they ought, if you have the convenience, to be kept in a loft by themselves, not having any acquaintance, if possible, with your other pigeons; for if they are used to fly with others, it will make them sink their flight when they observe others skimming in the air below them.

"Secondly, they ought to be turned out and put upon flight only once a day at

most, and that by themselves, after being well acquainted with your house. The morning is the best time for this diversion; and, after they are come down, throw them a little hempseed, or rape and canary, to entice them in, and so keep them confined until the next day.

"Thirdly, if possible, get one or two that have been used to flying high, for they will train your young ones up the sooner.

"Besides these things, the fanciers have observed particular seasons when a Tumbler will make a more extravagant flight than ordinary, as, for instance, when she sits upon eggs, and a few days after having fed off the soft meat. I can't find any philosophical reason to be given for this, yet, as it is confirmed by observation, I thought it worth taking notice of.

"Another time, when they will make a very extraordinary flight, is when you observe ravens, crows, or any other birds wantonly playing at a great height in the air. This may be very easily accounted for, there being at such a time something in the temperament of the air suitable to the genius of those birds, that delight in the upper regions of the atmosphere.

"Here I must advise the fancier not to turn out his Tumblers when there appear any signs of a rising fog, for by this means the sight of their habitation is intercepted, and many a good flight lost for ever.

"A high wind will likewise drive them too far from home, so that if they are not entirely lost, they may lie out all night, and so be exposed to the cats or various other accidents.

"Lastly, never turn out your hen Tumbler when she is with egg, for besides that she is at that time sick and unfit to fly, so likewise by her long flight she may drop her egg, an instance of which I have known, and so prevent the increase of your breed."

The author of the anonymous "Treatise" of 1765 repeats this account, copying from Moore, as usual, without any acknowledgment, and he adds: "The bald-pated Tumblers, which are of various colours in their body, as blacks, blues, &c., with a clean white head, a pearl eye, white flight and white tail, are esteemed good flyers, and are very pretty, even when flying in the air, for the contrast of the feather appears at that distance, when the weather is clear and fine; but the blue ones are reputed to rise higher than any other colour. There are also some called blue or black-bearded, that is, either of those colours having a long white spot from the under jaw and cheek, a little way down the throat, and regularly shaped, which has a pretty effect as an ornament; and if they run clean in the flight and tail, as before mentioned in the bald-pated ones, they are accounted handsome."

The "Treatise" also contains an original article on the Almond Tumbler, which, at the date of its publication, had evidently arrived at the dignity of being regarded as a valuable high-class variety.

The Rev. E. S. Dixon, in "The Dovecote and the Aviary," in his usually pleasant and lively style, thus describes the habits of the ordinary flying Tumbler:—

"Of all the Doves that cleave the air, give me, *in its unsophisticated and vulgarly bred state*, the pretty little Tumbler. Birds at two or three shillings the pair are better than those at two or three guineas, in spite of the 'Treatise;' the learned author of which we may magnanimously gainsay, without fear of contradiction, as he is long since quiet in his grave. The Tumbler, whether you Frenchify it as the *Pigeon Culbutant*, or Latinize it as the *Columba gyratrix*, is sure to attract notice for its intrinsic excellencies. Do you want a bird to eat? It is as good as any; a merit, though a humble one. It breeds as freely, and with as little trouble; and there is nothing so neat and trim as it is among domestic birds, not even the most perfect of the Sebright Bantams. With its little round head and patting red feet, it is exactly a feathered Goody Two-shoes. And then, its performances in the air! beating all the *Cordes Volantes*, or Tight-rope Diavoli, into disgraceful inferiority. It is decidedly the most accomplished member of the aërial ballet. Pirouettes, capers, *tours de force*, and *pas d'agilité*, all come alike in turn. Other pigeons certainly can take any course in the air, from a straight line, that would satisfy Euclid as being the shortest distance between two points, to circles and ellipses that remind us of the choreal orbits of the planets round the sun; but the Tumbler, while it is rapidly wheeling past some sharp corner in a tightly compressed parabola, seems occasionally to tie a knot in the air through mere fun; and in its descents from aloft, to weave some intricate braid, or whip-lash. This latter performance, I suspect, is quite a *leger-de-vol*, or sleight of wing; the bird does now and then tumble heels over head, and perform somersets, which the best clown at Astley's would be unwilling to risk at the same altitude above *terra firma*—for example, on the tip of a cathedral spire, or in the car of a balloon—but many of these intricate weavings are the result of some trick, best known to the performer, the real solution of which may be suspected to be the non-coincidence of the apparent centre of gravity of the bird with its real one. The Indian jugglers have a similar feat, in throwing a ball in a *spiral* course instead of in an acute parabola, more or less approaching to a vertical straight line; and the laws of motion would assure us that, with a *homogeneous* ball, such a feat is impossible, under the existing circumstances of the universe. But take a large *hollow* spherical shell, heavily loaded internally at *one* point of its circumference with lead, so that the centre of gravity of the mass is by no means in the centre of the hollow sphere, and a clever juggler, by a dexterous twist, will make it play strange freaks. Just so the wings and tail of the Tumbler are made to follow the impulse which themselves have given, and to revolve round the solid body of the bird, in seemingly the most unaccountable fashion.

"Our birds have all been shut up over night, so to-day let us have a morning performance, by special desire. Terpsichore, the saltatory Muse, belongs as much to air as to earth. House-tops, or better, tree-tops, shall be the boards of our rustic opera-stage; clouds shall be the wings; the blue sky, the flies; the rising sun shall do his best to fill the place of the gas in the footlights; the orchestra

are selected from the *élite* of Cocks and Hens, Ducks and Geese, with China Geese for the wind instruments and ophicleides, Thrushes and Larks for first fiddles, and the Cow and the Pig for a pedal bass,—though the threshing-machine in the distance best represents *that*. The audience is composed of yourself, your wife, three or four boys and girls, the nursemaid with the little one, the woman who is hanging out the week's washing in the orchard, and the gardener who is come with a wheelbarrow to fetch some columbine guano for his melon-bed. This fresh breeze is better than the smell of orange-peel; that hedge of sweet-briar is more fragrant, though less powerful, than a leaky gas-pipe. The word is given; *open sesame* falls the trap; the performers appear on their little platform, for all the world like the strolling actors in front of a show at a fair, cooing, bowing, advancing, retiring, in this their *divertissement*. They plunge into their air-bath like truant schoolboys into a brook during the dog-days. The respectable aldermanic Pouter swells his portly paunch to the utmost, claps his wings smartly, and sails about in circles: it seems marvellous that *he* should be able to fly at all! But that darling little Cinnamon Tumbler, what a height it is! And now, seven times, I thought I counted, it went over; but whether it was over, or under, or roundabout, it would be difficult to say. Does your neck ache? Pray do not complain of it; greater folks than us, when the Hawk and the Heron were trying to over-reach each other, had to strain their eyes and necks a great deal more to enjoy the sport, and had a chance too of scratching out the one, or breaking the other, by riding into a bramble-bush or a pit—a danger we are not likely to incur on this pleasant grass-plot.

"Tumbling in the air, on the part of good unsophisticated Tumblers, is to themselves an act of pleasure. They never do it unless they are in good health and spirits: their best performances are after being let out from a short confinement. The young Tumbler, as soon as it has gained sufficient strength of wing, finds out by some chance that it *can* tumble; it is delighted at the discovery, and goes on practising, till at last it executes the revolution with satisfaction to itself —a feat the French have not performed of late years. Often and often the young Tumbler may be seen trying to get over, but cannot nicely; the same firmness of muscle and decision of mind are required to execute that *coup*, which empower the leading men at Astley's to throw their fortieth or fiftieth somerset backwards, and enable the *première danseuse* at the opera to drop from the air, and stand for a second or two in an impossible attitude on tiptoe. Beginners are incapable of such excellence."

At the present time there are in this country two very different classes of birds known as Tumblers, although there is no strict line of demarcation between them, as they verge into one another by insensible gradations. These are the ordinary flying Tumbler, such as described by Moore and alluded to in the extract from Dixon, and the short-faced or high-class Tumbler, which is perhaps the most artificial of any of the numerous varieties of domesticated pigeons.

These two races bear the same relation one to another that the ordinary field

spaniel (the intelligent sporting dog) does to the short-faced Blenheim spaniel, one being valued for its useful properties, and the other for its shortness of face, small size, enormous ears, and extreme departure from the normal character of its progenitors.

As we observe every gradation of size and structure between the sporting dog and the Blenheim, so may the same series of steps be traced between the common flying Tumbler and the short-faced breed.

The characters of the commoner birds are so varied and so loosely defined, that it is difficult to describe them. The late Mr. B. P. Brent, who was well acquainted with the old English and Continental varieties, thus described them in some articles published originally in the *Poultry Chronicle*:—

"The varieties of this breed that now come under our notice are very numerous; their soaring flight and their aërial gymnastics will call forth much admiration, and are, I conceive, well calculated to enlist the sympathies of the student of nature. The Tumbler pigeons are well known in most of the countries of Europe; in France they are called 'Voltigeurs,' or 'Culbutants;' in Germany, 'Burzel,' 'Umschlager,' or 'Tummler-Tauben.' Their name is derived from their throwing a summersault while flying, which they sometimes perform three or four times at a single spring, clapping their wings together over their back, then suddenly bringing them down with force, they throw themselves back on their tails, but fearing to go over, and some are a long time before they overcome their fears. This is called 'backing.' When young birds fly well and back much without going over (a great defect), I have found it useful to pull out the middle of their tail, so that the next time they back they often fall over, and from that learn to tumble well. Some tumble too much at a time, and thereby lose the flight, or cause the others to come down after them, which is very objectionable. The Tumblers should be kept in a house by themselves, and only let out once a day; the best time is in the morning before the sun is very hot; and when they have had their fly they should be shut up for the rest of the day, and not allowed to associate with other pigeons, or they will contract a habit of low flying, which would spoil them. They should be kept in a commodious house, and in constant daily exercise, or they become lazy. Their house should be provided with plenty of food, clean water, and grit; a 'salt cat' will be found very useful, made of old mortar, coarse sand, clay, and a little salt; nor should green meat be omitted, such as lettuce, cabbage, &c., and an occasional bath is very beneficial.

"They are excellent breeders, and do not require so much attention as most fancy pigeons. Keep them clean and in exercise, give them good food and water, and materials to build with, and they will do well. Although their young are small, they are excellent in pies, and are produced in abundance, provided they are not cramped for room.

"The Tumbler should have a nice round head, a pearl eye, a short beak, a full chest, and a consequential deportment; they assimilate to the Almond Short-faced in properties, but if intended for the Flying Fancy, must be stouter and of

stronger constitution—in fact, not so high bred. They may be met with of various grades of goodness, like most other fancy articles. Their plumage is the most varied of all pigeons: there are whole colours, of black, blue, white, red, yellow or buff, silver, dun, ash-coloured, and kite, also mottles of all these. There are two kinds of mottles, dark and light; the dark have only a few feathers of white about head and shoulders; the white mottles must have the whole of the flight and tail dark, the rest of the body white, interspersed with a few coloured feathers. Then there are the pieds; first, the Magpie Tumbler, black, blue, red, or yellow, with white wings, breast, thighs, and vent, evenly marked without one coloured feather, the rest of the body being dark without any white. I have also seen reds and yellows with quite white shoulders like shields. The Germans have a large variety of Tumblers, which fly well and tumble very nicely; they are of various colours, either whole coloured, or dark with white flight and tails, often with a small beard, and their feet are covered with very long white feathers, many of the feathers on the toes measuring four or five inches in length. I kept a flight of them when in Germany, and was agreeably surprised to find them excellent high flyers and very prolific; but, to my great discomfiture, when I had got them almost to perfection in flying, a large hawk made a daily descent upon them, and so reduced their numbers that I was obliged to leave off flying them. These rough-footed Tumblers I found very plentiful in and about Coblentz, on the Rhine. In other parts of Germany they have many clean-footed Tumblers of various colours, as Magpies, Helmets, and Beards; but their Beards have only a white beard and flight-feathers, the rest of the body being dark, of various colours. Respecting Rolling Tumblers, I am not able satisfactorily to answer; but from all that I can learn, they are only those birds that tumble very much, and known as Dutch Tumblers, but are not much esteemed by the flying fanciers on account of their falling so much that they bring down the flights."

In a subsequent letter Mr. Brent continued,—"The old-fashioned high-flying Tumbler pigeons, that tumbled regularly, though not much, that were pleasant-faced, and flew high and long in a compact flight, are now, I fear, to be reckoned as birds of the past, the nearest approach to them being the Belgian Volants; but these do not tumble. The high-flying Tumblers of the present day seem to me to be generally coarse birds, often patchy-coloured: some of these, however, roll or tumble well, and others fly for four or five hours at a time when in proper training and condition. There is also a large variety of feather-footed Tumblers, known as Rollers. Mine of this breed are kites, blacks, kite-mottles, black-mottles, and red-mottles; they are large for Tumblers, and heavily feather-footed, and all tumble a great deal. Now and then one will roll till it touches the ground. I had one that could not fly down, but always descended by a roll, and as he frequently hurt himself by such proceedings, I found it necessary to keep him confined. There are also clean-legged Rollers which roll very much. I have several cocks that I am afraid to let out because they roll till they touch the ground, and I fear they may injure themselves, yet they are first-rate to breed from; while others roll or spin,

so as to revolve two, three, or four times at one throw; and I have bred some that I have counted roll sixteen times in a minute."

The homing instinct is well developed in the ordinary flying Tumblers; we have had in our possession birds of this variety that have repeatedly returned home forty or fifty miles. At the present time some of the lower class of pigeon fanciers, especially those residing at the East End of London, have devoted much attention to the raising of what are termed by them the "Long-faced Beards;" these are birds possessing the markings of the Bearded Tumbler, conjoined with a long slender beak. They are admirable homing pigeons, though not able to perform the long journeys that are effected by the Belgian "Voyageurs."

New York. Mar. 1. 1884, p. 135.

Scientific American.

Tumbler Pigeons.

The tumbling of the pigeon is a habit which, if seen in a wild bird, would certainly have been called instinctive; more especially if, as has been asserted, it aids these birds in escaping from hawks. There must have been some physical cause which induced the first tumbler to spend its activity in a manner unlike that of any other bird in the world. The behavior of the ground tumbler or Lotan, of India, renders it highly probable that in this sub-breed the tumbling is due to some affection of the brain, which has been transmitted from before the year 1600 to the present day. It is only necessary gently to shake these birds, or, in the case of the Kalmi Lotan, to touch them on the neck with a wand, in order to make them begin rolling over backward on the ground. This they continue to do with extraordinary rapidity until they are utterly exhausted, or even, as some say, until they die, unless they are taken up, held in the hands, and soothed; and then they recover. It is well known that certain lesions of the brain, or internal parasites, cause animals to turn incessantly round and round, either to the right or left, sometimes accompanied by a backward movement; and Mr. W. J. Moore (*Indian Medical Gazette*, Jan. and Feb., 1873) gives an account of the somewhat analogous result which followed from pricking the brain of a pigeon with a needle. Birds thus treated roll over backward in convulsions, in exactly the same manner as do the ground tumblers; and the same effect is produced by giving them hydrocyanic acid with strychnine. One pigeon which had its brain thus pricked recovered perfectly, but continued ever afterward to perform somersaults like a tumbler, though not belonging to any tumbling breed.

The movement appears to be of the nature of a recurrent spasm or convulsion, which throws the bird backward, as in tetanus; it then recovers its balance, and is again thrown backward. Whether this tendency originated from some accidental injury, or, as seems more probable, from some morbid affection of the brain, cannot be told; but at the present time the affection can hardly be called morbid in the case of common tumblers, as these birds are perfectly healthy and seem to enjoy performing their feats, or as an old writer expresses it, "showing like footballs in the air." The habit apparently can be controlled to a certain extent by the will. But what more particularly concerns us is that it is strictly inherited. Young birds in an aviary which have never seen a pigeon tumble take to it when first let free. The habit also varies much in degree in different individuals and in different sub-breeds; and it can be greatly augmented by continued selection, as seen in the house tumblers, which can hardly rise more than a foot or two above the ground without going head over heels in the air.—*Charles Darwin.*

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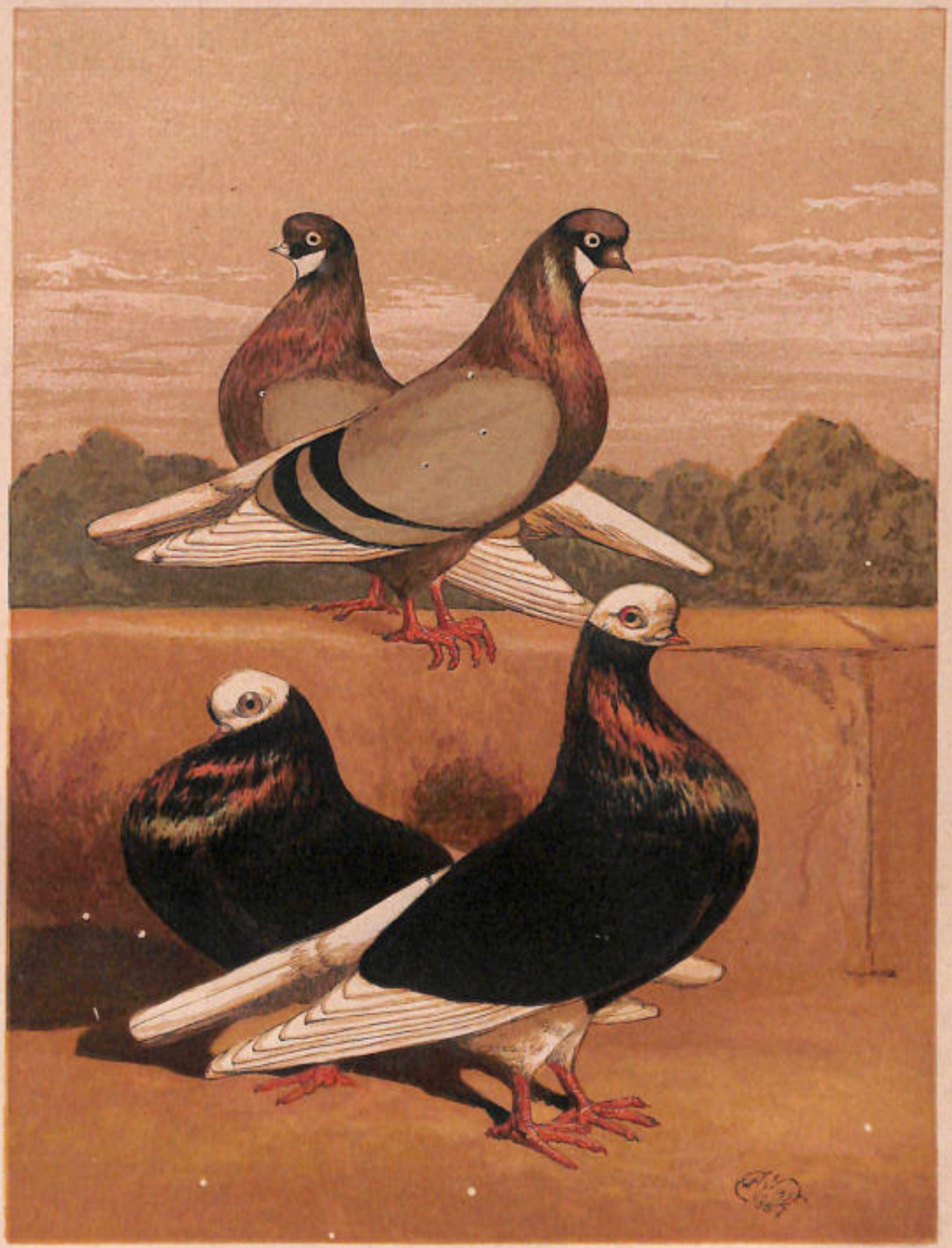


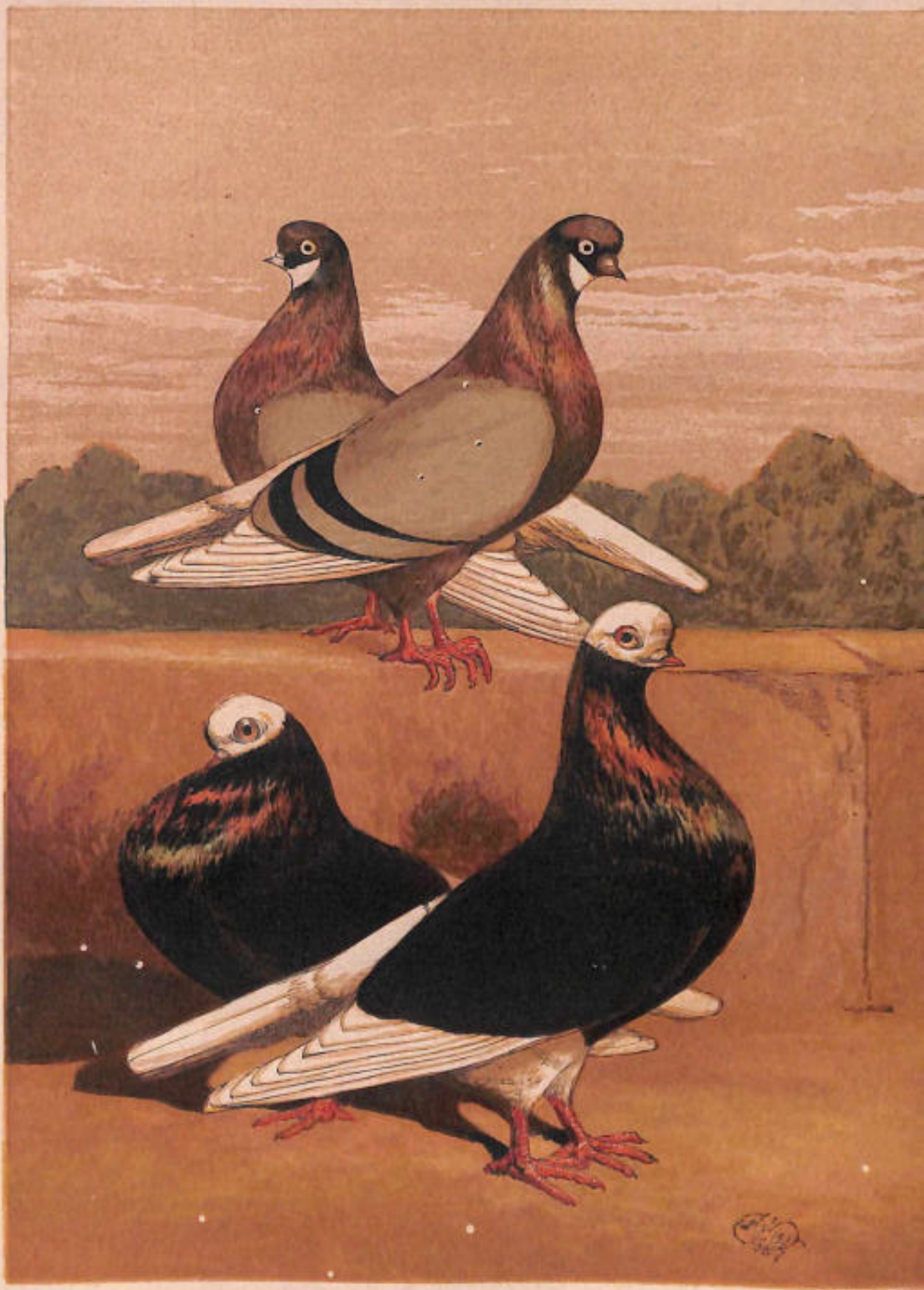
BEARDS AND BALDHEADS.

CHAPTER XI.

THE SHORT-FACED TUMBLER.

FOR many years, certainly for more than a century, pigeon fanciers have endeavoured to modify the structure and form of the Tumbler pigeon. Their object has been to obtain, by the most careful selection of brood-stock, a variety in which the characters of the breed should be developed to the highest degree. They have aimed at obtaining birds of very small size with a peculiar carriage or form, globular heads, and diminutive beaks.

In this pursuit they have been most successful: perhaps there is not a more artificial breed of animal existing than a Short-faced Tumbler, nor one which departs more widely from the original type. In consequence of this extreme variation from the natural standard, these birds are estimated very differently, as they are regarded from different points of view. "Fanciers," as is truly said by the enthusiastic Eaton, "do not esteem a medium standard, but admire extremes," and, therefore, we are not surprised to find the author writing, "To my fancy, I am not aware there is anything under the sun, or that you could imagine or conceive, that is so truly beautiful and elegant in its proportions or symmetry of style as the shape or carriage of the Almond Tumbler." Lovers of nature in her unadorned beauty, on the other hand, view them with dislike. The author of "The Dovecote" says, "The great wonderment about Tumblers is their form. The whole thing, however, is very simple. The common Tumbler, *au naturel*, has a compact little body, with a round head, a short beak, and neat little feet. But this did not content the fanciers. By pairing together birds in which these qualities were the most exaggerated, they got bodies still more compact, heads yet rounder, beaks shorter, and feet neater. It was the breeder's art carried to the uttermost. As to the beaks, do what the fancier would, they still were not small enough, and then the penknife was brought into use, to pare them down *below* the standard. The young of the birds so operated on had not, perhaps, smaller beaks than those originally possessed by their parents, any more than a wooden-legged man is necessarily the father of a wooden-legged family; but still they sold, and that was enough. And by coupling the most monstrous individuals of a race, a family of monsters are kept in existence for a time. Tumblers have been bred with their beaks so small that they cannot feed their own young, and with their frames so compact that they cannot fly to the top of their breeder's bedstead. They are called Tumblers only because if they *could* fly they *would* tumble. The



BEARDS AND BALDHEADS.

streak of white, from whence they derive their name. In blue-beards, as in blue bald-heads, the black bars on the wing and end of the tail should be present, and as well defined and dark as possible. As Mr. Brent has justly observed, "The

THE SHORT-FACED BEARD TUMBLER.

Blue-bearded Tumblers are not now often seen of accurate markings, more attention being paid to breed them delicate and short-faced than to maintain a clear breast, clean thighs, flight and rump, a fact which I much regret. A small delicate bird looks well in a show-pen, but very few of them are strong enough to take a lofty flight. I am aware that the head and beak fanciers consider that everything must give way, but those gentlemen that admire the Short-faced Tumblers will, while they enjoy their fancy, allow others to enjoy theirs, and not exclude, as some seem to wish, the flying birds from all exhibitions, for birds with such short beaks that they cannot rear their own young, or so delicate that they cannot be trusted out, and certainly not fitted for lofty flights."

Among the most valued of the Short-faced Tumblers are those termed Mottles, or Mottled Tumblers. These have a dark ground, black, red, or yellow, and occasionally dun, slightly mottled with white on the wings, and sometimes also on the back. When Short-faced Mottles approach the standard of merit laid down by the breeders, they are of very considerable value. The birds should have the head, beak, eye, and carriage of the best-bred Almonds. The ground-colour of the body should be uniform and sound, either a deep lustrous black, a bright red or brilliant yellow, as the case may be. The tail and flight-feathers, like those of the head and body, should be free from white, and the wing only mottled with white; though some amateurs desire to see a few white marks on the back between the wings. It is hardly necessary to say that birds possessing all these properties conjoined are very difficult to breed, and their value is proportionally high.

Leaving the Short-faced Tumblers of other colours, we now come to the consideration of the most valued pets of the fanciers — the celebrated Almond

LEIGHTON, BROTHERS.

BLACK MOTTLED TUMBLERS.

Tumblers. Many discussions have arisen as to the origin of this name. Moore, the earliest writer who notices the breed, speaks of it as "the Ermine Tumbler, vulgarly called the Almond." We cannot but think this a mistake, as the markings on the bird show no resemblance whatever to what is known as ermine, either in the animal so called, which is white and black, or in heraldry. Possibly the term may have arisen from the comparison of the general ground-colour of the bird with that of the shell of an almond; but even the author of the "Treatise," who gave the first good description of the breed, says he is at a loss to explain the meaning of the name.

In treating of this breed, we do so with some considerable anxiety, hardly daring to hope that our statements will meet with general assent amongst fanciers, who are divided amongst themselves as to what constitutes the greatest merit in the breed; some estimating the closest approach in the form of the head and beak to the ideal standard of perfection, as the highest merit, whilst others think that the perfection of the singular feather is the more important desideratum. Under these conflicting circumstances, we think it will be desirable to present our readers with the opposite views, as stated by some of the most celebrated of their respective champions. Mr. F. Esquilant, for a long period the Honorary Secretary of the Philoperisteron Society, and well known as one of the most successful breeders of Almonds, writes as follows:—

"The Almond Tumbler is, I believe, acknowledged to be the most artificial and least understood of all the varieties of fancy pigeons. By the general consent of fanciers, five properties are accorded to it, namely—1. Feather; 2. Carriage; 3. Eye; 4. Beak; 5. Head. These I have arranged in what I conceive to be their relative importance.

"1. Feather.—The first property, the colour and markings of the feather, from which the bird derives its name, will, I think, be at once conceded as the most difficult, not only to attain, but also to maintain.

"In this property alone there are no fewer than five points indispensable, firstly, a yellow ground on the whole body of the bird. The term 'yellow' I use for want of any other name to apply to it; perhaps the term 'almond-yellow' would be its more correct denomination. There is much difference of opinion on this most important feature. My view is, that the colour we have to attain resembles that on the outside of the shell of the almond nut—the brighter the better.

"This ground should be well broken or spangled throughout with black. The whole of the feathers of the flight and tail should be, at their base, of the same colour as the body feather, with a black or yellow quill, and broken at their extremities with a clear black and white. The feathers of the Almond should be covered with a metallic lustre or gloss, similar to that seen on the hackle of the bird; but this cannot be expected in so great a degree.

"This feather, so difficult to attain, should, I consider, when approximating to the desired standard, rank as equal to three of the other properties in estimating

the value of the bird. Such a feather, in conjunction with the other four properties, is to be obtained by judicious matching.

"2. CARRIAGE.—This important feature is considered by many as distinct from the shape of the bird. I shall treat them as one, considering that a bird of good carriage cannot be a bad shape; and if of a bad shape, it is impossible for it to be of a good carriage.

"The neck of the Almond should be short, and widening to its base, so as to become, imperceptibly as it were, part of its body. The chest should be broad and prominent; the legs short, and placed in the centre of the body; the bird in its whole character presenting a series of curves flowing easily and gracefully one into the other, so that it is not readily perceived where the one ends and the other begins.

"The wings should droop on the ground, a position which adds much to their beauty, as it displays the markings of the flight-feathers.

"3. EYE.—The eye should be large, circular, and prominent, placed in the centre of the profile of the head, and not close to the top of it, as it appears in the Carrier. Its pupils should be black, and the irides pearl-white—hence the denomination of pearl-eyed. I may remark that this property is one of the very earliest that is lost, when breeding very high in feather, or where the birds are very closely 'bred in,' and require 'crossing.'

"4. BEAK.—The beak should be short, fine, and straight, similar to a grain of the oat, cut across the centre and placed horizontally in front of the head. In colour it should be white, or nearly so. This beak, which I designate the corn-beak, I consider preferable to the goldfinch beak, it not being so likely to shoot out in length as the other, or become twisted and misshapen. In conjunction with the beak (of which it is generally considered a part) is the wattle at its base; this, while serving as a nostril, should be merely large enough to conceal the appearance of the roots of the feathers immediately in front of the head; it should appear to spring from the head, and be partly buried under the feathers, not standing out in strong relief, as if challenging attention instead of having to be looked for to be seen.

"5. HEAD.—I now come to that much-vaunted property—the head; upon this I have but little to observe.

"Setting aside the remarks so frequently saluting you at the meetings of brother fanciers, as—What a stop! What a breadth! Splendid front! &c. &c., I shall describe it as perfectly circular in form, planted firmly and shortly on the neck, varying in size in the cock and hen, but attaining a circumference of three inches and three-quarters in a well-proportioned cock bird.

"I have thus endeavoured to give my idea of what the Almond Tumbler should be, and what I hope to see it—not in isolated cases, but as a whole.

"When possessing the foregoing properties in a fair degree of perfection, it is by the varied splendour of its plumage, the beauty of its carriage, the brightness of its eye, the delicate fineness of its beak, and the uniqueness of its head, added to

its activity and docility, one of the most, if not *the* most, fascinating of our fancy pigeons."

The late Mr. B. T. Brent, writing in the *Poultry Chronicle*, states :—

"The Almond Tumblers were obtained by careful breeding, selecting, and crossing colours from the commoner kind of Tumblers, and after a long series of years, by drafting and breeding in and in, as much as it was prudent, have they been brought to the state of perfection in which they are now to be seen. I am inclined to think the name of 'Almond' originated in their ground-colour being formerly that of the well-known 'Almond nut,' though they are now bred of a much brighter colour. The colour of the Almond Tumbler is a mixture of yellow, red, black, and white, well broken and intermixed. Their points of excellence may be enumerated under the five following properties of head, beak, eye, shape, and feather:—The head must be round, broad, and high, rising abruptly from the beak, and the fuller and more projecting the forehead the more it is valued. The beak should be short, small, straight, and tapering, measuring, from the eye to the end of the quick of the beak, from five-eighths to three-quarters of an inch in length, the shorter the better; nor must the nostrils be large, but only slightly developed. The eye should be prominent, round, bright, and of a clear pearl colour, without streak or mud-marks, and also free from sere. In shape, the neck should be short and thin, the head carried rather backwards, the neck slightly bending, the chest full and well thrown out, the back short, the body round and as small as possible, the flight and tail short, their feet small, and the bird standing on its toes, the ball of the foot often slightly raised from the ground. Feather is considered the last property; not but that good plumage adds great beauty to the bird, and much enhances the value of an otherwise good specimen. The more an Almond has of bright yellow, and the clearer and more decided the black, so much the more is it admired. Yellow, black, and white are the primary colours, and the more these are intermixed the more they are prized. Blue is considered very objectionable. In and in breeding (that is coupling relations) is of considerable use in reducing their size and making them fine and delicate; but caution is required not to carry this process too far, or they will become so weakly and degenerate that scarcely any offspring will be raised—and these few worthless. The finer and more delicate they are, the more they are admired; consequently they exist in an artificial state. From their weakness, they are rarely allowed to enjoy their liberty, though on account of their high breeding and good living they breed freely, but are very apt to leave their young and go to nest again before the squabs are capable of keeping themselves warm. To prevent these dying, they are shifted to a pair of feeders that have hatched later, so as to secure them more attention and a fresh supply of soft meat. These feeders must, however, be small pigeons with small beaks, or the nurslings may be injured, or have their tender beaks twisted or broken in feeding. I don't know if it has ever been tried, but fancy the Collared Turtle-doves would make good nurses

for these tiny pets. If the young Tumblers are very fine, or the weather cold, it may be necessary to shift them several times; thus, several pairs may be shifted in rotation, the Almonds themselves taking an elder pair of some of their companions. Their loft should be kept scrupulously clean. They are fond of bathing; their water must be kept clean and sweet, and their food be of the best quality. Each pair should be provided with a separate breeding-pen, so constructed that it can be closed at pleasure, either to keep in a troublesome gent, or to prevent others annoying a weakly one. Earthen pans should be provided for nests, placed on a shelf in the pen, and short straw or fine heath twigs for building materials. A great deal of care and attention is necessary to insure success. No one will, therefore, wonder at the high prices paid for good birds."

In quoting the several authorities on this highly valued breed, we must not omit reference to the two distinct works which have been published on this favourite variety.

The first was entitled "A New and Compleat Treatise on the Art of Breeding and Managing the Almond Tumbler, etc. By an old Fancier and a Member of the Columbarian Society, held at the Queen's Head Tavern, Holborn. London, Alex. Hogg & Co., 16, Paternoster Row." 104 pages, 8vo. There is no date on the title-page, but the dedication to the gentlemen of the Columbarian Society is dated "London, March, 1802." This book is very scarce and difficult to obtain.

The second work was "A Treatise on the Art of Breeding and Managing the Almond Tumbler. By John Mathews Eaton, 1851." This includes a very large proportion of the work published in 1802, with many valuable and peculiarly original remarks by Mr. Eaton, and was afterwards published as part of that writer's larger Treatise on Pigeons, 1858.

It is exceedingly interesting to trace the gradual establishment of a variety which has been so recently produced as the Almond Tumbler. We have already noted that Moore, writing in 1735, barely alluded to the breed. The author of the "Treatise" of 1765 devoted a few pages to its consideration. Alluding to the breed as being recently established, and not even then well understood, he also describes the mode in which the variety was obtained by matching birds of different colours together, intermixing the feather, viz., blacks, black grizzles, yellows, whites, duns, &c., and says Almonds are always attainable if you are endowed with patience sufficient for the tedious process, which requires a length of time.

The "Old Fancier," writing in 1802, gives the following as the characters of the breed as then established:—

"Feather.—The first thing that strikes the eye on looking at the Almond Tumbler in the area is the feather; or perhaps the shape may strike some, if that should happen to be very good; but as I think feather ought to have the preference, I will take that first.

"The ground of the feather should be, strictly speaking, yellow, but that, with

submission, I think is not attainable; we must therefore be content with having the ground of a bright almond colour (approaching as much as possible to yellow), well spangled, and broken with black and white, particularly in the flight and tail; and the more these feathers resemble the broken colours of the tulip, the nearer they approach perfection.

"The hackle, or neck-feathers, should be bright, and well broken with the same colours, and should resemble the delicate touches of the pencil of a fine artist.

"SHAPE.—The bird should stand low, with a fine prominent and full, or, as the fanciers term it, a square chest, which is thrown up considerably by the bird's elevating himself on tiptoe, and thereby depressing his tail, so that the point of it touches the flooring of the area, pen, or whatever place he stands upon; the neck should be short and thin, and curved under the throat, and thrown back. If the bird is naturally of a good shape, it is more particularly conspicuous when he is driving his hen to nest, and then he shows himself in his greatest beauty and to the best advantage.

"EYE.—The next property which seems to demand our attention, without taking the bird in hand, is the eye. The iris should be of a silvery white, or pearl colour, all round the pupil, and the brighter and more silvery this is the better, and should be fixed in the centre of the head; the outside or eyelid should not be fleshy, but feathered close to the edge of the eye, which should be prominent.

"HEAD.—The next property is the head, which, although it should be very good, does not strike a young fancier forcibly till he handles the bird. (Here I must digress a little, which I trust the reader will pardon, as it is absolutely necessary for him to know how to hold the bird, before he can examine its head, beak, and eye. This is done by placing the bird in his left hand, putting its legs between his first and second fingers; the flight and tail will by that means lie over his forefinger; then put the thumb down on the lower part of the bird's back, till the point of the thumb comes in contact with the forefinger, which secures the bird and prevents its struggling, and it may then be examined at pleasure, which is to be done by laying hold of the throat gently with the thumb and forefinger of the right hand, and turning the head which way the holder pleases, by which means he will obtain a complete and distinct view of the head, beak, and eye of the bird, in every direction.) To return to the head—this should be lofty and round, and as near as may be semicircular, the eye directly in the centre; and to add to the greater beauty and finish of the head, the feathers under the eye and about the lower jaw should be full, and a little curved upwards, which is called muffy. The feathers forming the front of the head should stop well, and not run out in a point into the wattle on the beak.

"BEAK.—I now come to the last, but by no means the least, beautiful property—the beak. This should be very fine and pointed, and run in a straight line from the head; it should not exceed seven-eighths of an inch from the point to the iris,

or inner circle of the eye. Before these birds were brought to the perfection they now are, it was necessary to limit the length of the beak, which frequently exceeded seven-eighths of an inch, but they are now so much within that length that the rule is scarcely necessary. And in addition to this, the eye of a good fancier is now so correct, and so much accustomed to see birds whose beaks are scarce six-eighths, that he could tell with half an eye if it was more than the rule allowed, without having recourse to a gauge or measure. The wart or wattle on the beak should be fine, and as little of it as possible.

"N.B.—The hen is by no means inferior to the cock in any of the above properties, except feather; and it is with these birds, as with most others, that the male is generally more beautiful in this respect. Great allowances should therefore be made for the Almond hen in that particular property."

Mr. J. M. Eaton, in his valuable work, adds the characters as insisted on at the present day. Feather he regards as inferior in value to shape or carriage, and he notices the fact that in many high-bred birds the primary or flight-feathers of the wing are only nine instead of the normal number of ten. He is also enthusiastic in praise of a good head, which he defines as being as broad, lofty, and round as possible, with the front part overhanging, as it were, the beak, and constituting a good stop, and not slanting into the beak. The beak itself, he states, should not exceed five-eighths of an inch in length, measured from the iris to the end. It will be gathered from these remarks that Mr. Eaton is what he himself would term a "head and beak fancier," as distinguished from those whom, like Mr. Esquilant and the author of the "New and Compleat Treatise on the Almond Tumbler," he would term "feather fanciers."

Having given the opinions of all the most celebrated authorities who have written on this breed, we have now to speak of the variations which occur in the plumage of Almond-bred birds. One of the most common varieties of plumage is that termed "kite-feathered." In the language of the Almond breeders, a "Kite" is a black bird, having the inner webs of the quill-feathers passing into red or yellow. Many of these birds have a very brilliant metallic lustre on their plumage, and in the form of the head and beak are equal, or even superior, to the best Almonds; a fact which was noticed even so long ago as 1765, the author of the "Treatise" stating, "I have observed that a black one bred from Almonds generally runs better in the head and beak than the Almonds themselves, and the flight and tail are oftentimes strongly tinged with yellow. Such a one matched to an Almond is most likely to breed a good bird."

Kites, though seldom regarded as exhibition birds, are exceedingly valuable as breeding stock. If two Kites are matched together, they rarely produce any other young except those of their own colour; but an Almond and a Kite will often produce an Almond and a Kite in each nest.

Almond birds often throw young of other colours, as duns, reds, yellows, sometimes whole or self-colour, and at other times mottled or splashed irregularly, as in what are termed Agates and Splashed birds. These, though not show birds, are

most valuable as brood stock, if they possess the requisite properties of head, beak, eye, and carriage.

Matching the birds properly is one of the most important points in breeding Almonds, and the knowledge how to effect this is only to be acquired by long experience. It is impossible to state in many cases what colours will be produced by any particular pair, even when their origin can be traced through several generations. The "Old Fancier" gives the following very practical directions on matching or pairing:—

"Of Matching or Pairing.—The middle or latter end of February, if the weather is open, is the proper time for matching the birds, rather than a later period, as they will at first lay thin-shelled eggs, match them as late as you please, and the first or second round seldom produces anything, so that it is a saving of time, and a means of getting the birds steady and in good breeding condition by the time the weather has become a little warmer, after which all difficulty of that sort is over, and they then go on kindly.

"Having got the loft and pens clean, and in good condition, and being provided with nest-pans, hoppers, fountains, and all other requisites, the fancier must proceed to match or pair his birds, which is unquestionably the greatest art in the system of pigeon fancying, consequently considerable attention is now necessary to be paid by him; and for his assistance and instruction I shall endeavour to lay down a few rules, which ought invariably to be adhered to, if he has choice enough in his loft to admit of them; if not, it is much better to buy a bird to match one that he cannot properly match from his own stud, rather than put two birds together that are not a match, thereby strengthening the bad properties which it is his business to lessen, and if possible entirely to subdue.

"The grand art of matching birds, in my opinion, is to endeavour to counteract every bad property or imperfection in the birds that are to be put together, by taking care that the bird intended for the mate of the one possesses the good properties or perfections, in an eminent degree, which the other is deficient in; as, for example, the cock bird shall have a brilliant feather and good head and beak, but shall be deficient in the eye and shape, consequently, the hen must be particularly good in those properties in which he fails, viz., eye and shape; but if she is good all the way through, the more desirable; and as no one ever yet apprehended breeding too good a bird, I recommend putting birds of equal good properties together, as much as possible, rather than birds whose properties must be assisted by counteraction, but the strength of the loft will seldom admit of this, in which case he has no alternative.

"Great care should be taken not to match birds too fine, as it is called, that is, so that they do not throw a sufficient height of feather. If this is not guarded against, he will produce none but light-grounded birds, which will take him a great length of time to strengthen and get the better of, therefore good Kites are necessary to maintain strength of feather; also good thorough-bred reds or yellow-mottled birds are very proper for this purpose; but I prefer a well-bred red or red-

mottled to a yellow, being of opinion that a red generally throws a brighter feather than a yellow; however, this may be matter of opinion more than actual conviction, and the young fancier will in due time be able to determine this point for himself. In choosing Kites, I recommend particular attention to be paid to the quality of the black; it should be of a glossy jet, richly stained with yellow through the flight and tail, without the least shade of bloom or slate-colour pervading any part of the bird, particularly the rump. The same rule should be observed in the choice of reds and yellows, as to the ashy rump, &c.

"Some fanciers are very partial to duns, but I confess I am no great advocate for them in general. If the young fancier makes use of one, I advise him to be satisfied that it is clear bred, that is, bred from two Almonds, and that they have no ash or dun about their rumps, and no shade of bloom running over them; but a well-bred dun is sometimes necessary to soften down a hard-feathered Almond, and is frequently of great service in this particular.

"Splashes, if well bred, are very useful, particularly if they are hens, as they are easily matched and very likely to break or spangle the feather, which is a great perfection. It is no easy matter to lay down certain rules for matching Splashes, or, indeed, any other coloured birds, for much must depend upon the way in which they are bred; or else, generally speaking, a splashed cock may be matched to a Kite, a red, a yellow, or a full-grounded Almond hen, and a splashed hen to the like sort of cock birds, having an eye at the same time to the points necessary to produce a good bird in other respects.

"The birds being paired, the next care must be to make them well acquainted with their respective pens, and for this purpose they should be penned up for a few days, or longer if necessary, in the pens designed for them, during which time they will match strong, and become well acquainted with their habitations. The fancier should then begin by opening two of the pens, that are most remote from each other, and the birds, finding no entrance to any other, will readily learn to know the places they came out of. When these two pair are well acquainted with their pens, they should be fastened up again, and two other pair let out, remembering to let out such as are most distant from each other, by which means they will be less liable to mistake each other's home; and so he must proceed, till the whole are well acquainted with their respective abodes. Great care should be taken to prevent a cock getting master of two pens, for if once he gets a habit of going into another bird's pen, be assured he will never rest till he has driven that cock and hen from their house, and spoilt their eggs or killed their young ones. When this is become very troublesome, the only remedy is to put him and his hen into another room, for it is almost impossible to break him of this trick, if once he gets master. Thus the advantage of dividing the loft is clearly shown, for without this convenience he must be under the necessity of keeping that pair of birds constantly penned up, which would be very prejudicial to their health, and fill them with vermin. During this period, the young fancier must bestow a little time in watching them, and putting them a few times into their own pens,

if they are at a loss to find them. By attending to these rules, the birds will soon become steady and settled. Particular care should also be taken always to give the cock the same habitation he had last year; if not, he will get master of two pens, and occasion the difficulty just mentioned. The same care is not necessary with regard to the hens: they will always follow their cocks, when thoroughly matched.

"In a week from pairing or matching, some of the hens will be near laying, which will be plainly discovered by the anxiety of the cock in continually driving his hen from place to place, till she goes on the nest; and the nearer she is to laying, the greater is his anxiety. It is also discernible by the hen's sitting on a heap, with her feathers set up, as if she was cold and unwell, and by a great protuberance on the rump, and a depression or hanging of the tail. When these symptoms are perceived, care should be taken to make them a good nest of soft straw, well rubbed with the hands (for they seldom make a proper one themselves). If the cock should be very impetuous in driving his hen, the best way will be to pen them till she has laid her first egg, or she may probably drop it on the floor, from the constant worrying she sustains by the cock's driving her. They may be let out again when she has laid it, to stretch their wings, and penned up again on the third day, when she will lay her second egg. They sometimes drop them the day before the proper day for laying, and then they are without shell, and what are called lush eggs. So that if the cock is too violent, it may be as well to keep them penned up till the hen has safely deposited both her eggs. This should also be done with all weakly hens, who are much more likely to drop their eggs about the loft than lay them in the places provided for them.

"The hen mostly lays two eggs, missing one day between the first and second. Sometimes, though rarely, she will lay three; at others only one. When she lays but one, I think it is a sign of weakness or great delicacy; but this seldom happens except in the spring, in the first or second round. After having laid her first egg, which is invariably between five and six o'clock in the afternoon, she and the cock alternately stand over it till the second is laid, which is usually at one o'clock or soon after, on the third day, when they commence incubation in the following manner: as soon as the second egg is laid, the cock, who is generally at hand waiting the event, sends the hen off, both for the purpose of recruiting herself after the pain and fatigue of laying, and to take the proper refreshment necessary to enable her to resume her sitting for the night, which she does between four and five the same afternoon, and sits till about ten o'clock the next day, when the cock relieves guard, and sits again till four in the afternoon, and so alternately till the seventeenth day from the laying the last egg, when the incubation is complete, and the eggs will be chipped, and in general hatched in the course of that day, if they hatch at all; and this regularity, and alternate relief, is maintained during the feeding as well as the sitting.

"It is also very common for them in the spring to lay thin-shelled eggs, which

are very liable to be broken by the pressure of sitting on, and frequently stick to their breasts and prevent them sitting any longer; when this happens, their breasts must be thoroughly cleansed from the adhesive quality of the broken egg, and another egg given them immediately; and if the cock is put on to it, he will in general sit very kindly, and the hen, coming to seek for him, and finding him sitting, will take her turn, as if nothing had happened. At the expiration of their time for sitting, they must be provided with a young one to feed off their soft meat.

"The Almond Tumblers will, if in good health, breed from the time of pairing them till the months of October or November, but I think they should be parted in October, as soon as they can feed off the young ones they then have to bring up; for the fancier will find great difficulty in raising any of them after this time, as the weather gets very cold, and the nights long, so that they are frequently deserted and left to the severity of the weather, not sufficiently fed, by which a cold will come on, with a running at the nose, or roop, and baffle all the fancier's art to get the better of, and the bird will die. If he should happen to raise any of this description, the chances are greatly against their surviving the winter, and if they do, they will most likely be such weakly birds that the fancier will repent having bestowed so much time and trouble upon them.

"On the seventeenth day from the hen's having laid her last egg, and the young ones begin to hatch, much attention is now necessary to be paid by him, and a little judicious assistance is sometimes requisite to assist the young bird in extricating itself from its prison-house, and particularly in the spring, when the young ones, even in the shell, are more delicate and weakly than they are at a later period of the season, and consequently less able to disengage themselves. If an egg does not spring or chip by the time it ought—viz., in the course of the seventeenth day—the fancier should hold it to his ear, and if the young one makes a crackling kind of noise, and that pretty briskly, he may conclude it will soon chip; when it has so chipped, if the young one should not proceed in its endeavours to break the shell as much as the fancier thinks it ought to have done in the time, and does not continue to make so brisk a noise, it is a sure sign that the young one is weakly, and almost exhausted, and requires immediate assistance. In that case, he should gently dent his thumb or finger-nail, or the head of a pin, in a circle round the egg, in the same manner as if it had been done from within by the beak of the young one itself, remembering to let in a little air, which may be safely done at the part where the bird first springs the shell, that being the part where its beak lies, and no blood will issue from it, by which means it will be greatly assisted in extricating itself, and many a valuable bird may be thus saved. Particular care should be taken not to pick a hole in any other part of the shell than above mentioned, or make it bleed, as the least effusion of blood will be fatal to the fœtus; but if it has been moving about in the shell so long as to have absorbed all the moisture or blood, and has, by its circuitous motion, rolled up the little caul or membrane in which it is enveloped whilst in the egg,

it may safely be set at liberty, taking care to expose it to the air as short a time as possible. When it is disengaged from the shell, a portion of the yolk will be seen attached to its navel, which will nourish it for a day or two, if the old ones should not happen to feed it immediately; and this is by degrees absorbed or taken up into the intestines of the young bird, by which time it will want feeding, which must be attended to by the fancier. It is by the yolk's being thus taken into the abdomen of the fœtus, that it is nourished during the latter stage of its confinement in the egg. If the young one should be a long time disengaging itself, after having chipped the shell, there will be less of the yolk to be seen, from its having absorbed a part of it for its support; and it will be hatched perfectly dry, and the navel will be well closed.

"The fancier should always mark the day of the month when the hen lays her last egg, in chalk or pencil, somewhere about the pen, that he may ascertain the day on which she ought to hatch.

"Shifting is a matter that is essentially necessary to be attended to, in order to raise a promising young bird. I have before hinted how early the old birds begin to decline sitting on their young; this is more particularly the case with the Almond Tumblers, who will rarely bring up their own young, except in the height of summer, by reason of their quitting them sooner, to go to nest again. They begin to get restless as early as the eighth day, and the ninth, or tenth, they will be off the nest for an hour or more at a time, and get calling to nest again; by which the young ones are left exposed to the air before they have a feather upon them, and die of cold, with their crops full. To obviate this, he should shift them under another pair that have not hatched so long, and kill the young ones he takes away from such other pair: in doing which, he gets these shifted young ones an additional supply of warmth from being sat on, and of soft meat, from the fresh pair got having hatched or fed so long, and consequently their soft meat not being exhausted.

"It is better to get a pair or two of common Tumblers for feeders or nurses, such as Baldheads or Beards; and by killing their young, which he will do without reluctance, he may be certain of bringing up his young Almonds; and if he is judicious, he may always, or for the most part, have a succession of feeders, by taking away the hens of his feeders, and confining them awhile: and when any of his best Almonds are within a day or two of laying, turn the feeder-hen to her mate, and they will go to nest immediately, and lay in a week or less after the others, by which means he will get a certain shift for his young Almonds, at the distance of six, seven, or eight days, which is just the time the old ones begin to desert them, and thus bring up a pair of good birds, which, without such feeders, he probably would have lost. He should let the common birds feed their own young a day or two after hatching, to bring on their soft meat.

"Drafting the young ones into another loft is very desirable, provided the fancier is not straitened for room. As soon as the young ones can feed themselves, they should be taken into the loft provided for them, and have plenty of

gravel and mortar; and their area should be kept thoroughly clean, where they will pick themselves and bask in the sun, and thrive prodigiously.

"Their food should be the best tares; or if sound beans could be procured that are small enough, I should prefer them; but it will be better to let them have both, as I do not think tares alone a wholesome diet, being apt to make them scour.

"I am a great advocate for parting the birds after the breeding season, having found my account in it, and thence been thoroughly convinced of its beneficial effects, great utility, and convenience; and I shall endeavour to convince the young fancier also of the propriety and advantage of this plan, by a few observations to that point.

"In the first place, a great deal of plague and trouble is saved to the fancier, by the impossibility of the birds continuing to go to nest, which they will do, if not parted, in spite of all his efforts to prevent them; he is then under the necessity of continuing them another round, as the fanciers term it (though he is convinced of the impropriety of it, at that late season of the year), to the great detriment of his hens, and without a chance of bringing up what they may happen to hatch.

"And further, as few fanciers match their birds in the manner they were matched the preceding season, from the number of young ones they may have bred, which by the following season are become matchable, and occasion the necessity of altering the old matches, and from other causes, the advantage of parting the birds in the winter is here, I think, particularly conspicuous; it will enable him to cross-match all his birds without the least difficulty, as they will cross-match ten times more readily when they have been asunder two or three months, than when they have been kept together.

"When I have had occasion to cross-match two or three pair of birds in the height of the breeding season, on account of their produce not pleasing me, I have frequently had great difficulty in obtaining my point, from the strong recollection the birds have had of each other; and though I have at last succeeded, the moment the hens have been turned into the loft they have flown to their former pens and mates, and it was a considerable time before they were reconciled to their new mates and abodes. To prevent this, the new-matched pair should be fastened into their own pen, taking care that the cock has the same pen he had before. This evil will be completely remedied by parting the loft, as the fanciers may then put a pair or two of the cross-matched birds into the contrary side to which they have been accustomed, and by this means avoid the intercourse that must necessarily take place between the new-matched birds and their former mates.

"Another thing is necessary to be attended to by the fancier, in cross-matching, viz.—he should have two or three matching pens in some other part of his house, if not too inconvenient, in order that the birds he is about to cross-match may be out of the hearing of their former mates, and of the other birds in the loft,

which will greatly facilitate their speedy matching to their new mates. They will frequently be a very long time in matching in the loft, where they can both see and hear each other, and sometimes will not match at all.

"If they continue obstinate, a handful of rape or hemp seed should be given them occasionally; and if the cock is very violent, and fights his hen, an open lath partition should be put across the pen, to separate them, so that they may only see each other, and they will soon match by this method, which will be ascertained by the hen's sweeping her tail, nodding her head, &c., which is called showing."

These very practical directions from "The Old Fancier" on the management of this most artificial and delicate breed, include all that need be said upon the subject, with the exception of the treatment of their diseases; but as their disorders are similar to those affecting the other varieties, it will be more desirable to consider them in the chapter specially relating to the diseases of pigeons.

It may be of interest to state that Columbarian societies, for the encouragement of this particular breed, have existed in London for above a hundred years, and that the rules and standards, as laid down by them, still exist. Mr. Eaton reprints the rules published, with an engraving, in 1764. They are as follow:—

ORDINANCES ESTABLISHED BY THE COLUMBARIAN SOCIETY,

AT THE GLOBE TAVERN, FLEET STREET,

RESPECTING THE

PERFECTIONS OR IMPERFECTIONS OF ALMOND OR ERMIN TUMBLERS.

1764.

PERFECTIONS.	IMPERFECTIONS
I. *Feather.*	I. *Feather.*
Consists of three colours, viz., Black, White, and Yellow, intermixed, or variously and richly displayed. Ground, the best Yellow. The Ramp, Yellow and Spangled. Tail, the most Yellow and striped.	Ash Colour, or Blue, Barr'd on the Flight.
II. *Head.*	II. *Head.*
To be Round and Small. The Forehead, High. The Beak, Short and Small. The Eye, a bright pearl colour round the Pupil.	Thin, Long Snouted. Beak, Long and Thick. Eye, all Black or Red, or broken colour.
III. *Shape.*	III. *Shape.*
A Small Body, Prominent Chest, and Good Symetry.	Long Body. Large, with Small Chest.

IMPERFECTIONS INADMISSIBLE AT A SHEW FOR THE PRIZE.

Blue Ermins, Ermins with entire blue tails, and Ash coloured Ermins.

In commenting on this table, Mr. Eaton remarks that, on looking at the portrait which accompanies the ordinances as a frontispiece, he thought it was the same plate that accompanies the Treatise of 1635; but that careful examination showed him there were slight differences.

Respecting the birds represented, he justly remarks that, as compared with

the Almonds of the present time, they have "only neat heads, down beaks, not straight, with long legs;" and he adds, "if the two engravings were faithful likenesses of what the Ermines, or Almonds, were in 1764 or 1765, all I can say, they were nothing to boast of."

We have thus traced the gradual development of this most artificial breed, from the first attempts of the fanciers of Moore's time, 1735, through the successive stages, as recorded in the Treatise of 1765, and that of 1802, to Mr. Eaton's work of 1851, and from thence down to the present time.

CHAPTER XII.

THE LOWTAN OR GROUND TUMBLERS OF INDIA.—HOUSE TUMBLERS, &c.

THE propensity to the performance of eccentric movements which distinguishes the breeds known as Tumblers and Rollers, is carried to an extreme degree in some varieties. There are breeds of pigeons that are, from this cause, quite incapable of flight, rolling or tumbling over and over on the least attempt to employ their wings. Such a condition obviously depends on some abnormal development or undue irritability of the brain; but, as far as we are aware, no anatomical investigation of the structure or condition of this organ has been made in these birds, nor has the writer had any opportunities of making any such investigation.

To these extreme varieties belong the breeds known as House Tumblers—so named because they tumble in the house. From their excessive tumbling they are not good flyers—not because they are unable to use their wings, for as young birds they fly well; but as they attain maturity they tumble too much, and if forced to fly are apt to be blown away. If they are suddenly caused to fly when at rest, they will spring up, turn over once or twice, and settle again. Some of these birds are quite incapable of flight from their constancy in tumbling; and when this is done regularly, close to the ground, and with ease and command of themselves, they are very highly valued.

House Tumblers should not be tumbled too much at a time, nor too often, or they will acquire a dislike to it, and will endeavour to conceal themselves by running into a corner on the owner going into the room where they are kept.

The late Mr. Brent, describing this breed and other extreme varieties, writes:—

"My House Tumblers, when they tumble to perfection, lose the power of flight, for at every attempt to rise they turn over. They may be tossed in a handkerchief held by the corners, and each time they feel the cloth descend they will turn over. There are a few that really cannot fly for tumbling; but many can fly about from house to house. Then I have among my Rollers some that, if suddenly startled, will roll along the ground like a hoop or wheel; but this display is not frequent, and they always seem to get up very much astonished at their own performance. I like to see a bird rise up a foot or fifteen inches, and, turning a clean somersault, settle again on its feet without striking its head. I have a cock that does this to perfection, and I consider him a very valuable pigeon.

"Air Tumblers, too, I have that, in flying along, will turn over many times in

succession. This is done in a line right ahead, turning over clean once in every five or six yards. I bred one white cock that turned forty-five times in a minute, and would keep it up for several minutes in succession, but could not fly long at a time; while other Rollers will spin in the air like a ball or a wheel, falling all the time they roll; but such are very apt to injure, if not kill themselves, by rolling to the ground or striking against some hard substance.

"To witness the performance of Air Tumblers in perfection, one must see them on the wing, though, from their excessive tumbling, they do not fly much. There is a difference in the performance of young ones, even from the best breeds; now and then one will roll, but, as a rule, each tumble or turn over is done clear and distinct, without dropping or falling from their onward course. Some that do not tumble much will fly for an hour, and tumble very nicely by fits and starts, from seven to twenty times in a minute; others continue to progress in one continued string of somersaults, or as if they were tying knots in their line of flight, and are speedily obliged to settle, good birds often turning over from twenty-five to forty times in a minute. In colour mine are mostly reds, with some white, red-mottled, and black-grizzles. I have also some whites with dark eyes. The greatest number of somersaults I have ever known done was performed by a cock of this last breed, which turned forty-five in a minute.

"It will be unnecessary for me to state that these birds require more attention than common sorts, as it is always unadvisable to let them out in stormy or windy weather, as, from their continuous tumbling, they cannot fly long or battle with the storm, consequently get blown away from their home."

In commenting on this interesting communication from Mr. Brent, Mr. James Paton, of Stewarton, N.B., from whom Mr. Brent originally obtained his birds, writes respecting the number of times an Air Tumbler will turn, that forty-five turns in a minute "is good, but not extra tumbling, as some of this sort can turn sixty times in a minute, but cannot fly much longer than that time. I had a hen," continues Mr. Paton, "that has turned over forty-seven times in forty-five seconds. In order to make them tumble, it is best to take them the distance they can fly from their loft and let them fly back to it."

With regard to the colour of these birds, Mr. Paton states that it varies greatly, as there are "Reds, Blacks, Yellows, Blues, Kites, Agates, and Mottles."

In respect to the hereditary transmission of this remarkable peculiarity, the same breeder remarks:—"There is one thing that I must mention with regard to the House Tumbler, namely, that it does not breed true. My experience of them is that not more than one of six of their young will turn out to be house tumbling birds, but those that do not do so sometimes produce the best birds."

This reversion to the habits of the grand parents is a point of very great interest when regarded from a physiological point of view.

The most extreme instance of these irregular movements occurs in the birds termed Lowtans in India. Of these there have never been, as far as we are aware, any examples in England, where they are scarcely known even by name; and

we have to express our obligations to two correspondents for the following graphic accounts of these breeds. The first gentleman, writing from Madras, under the *nom de plume* of "Smooth-Bore," states :—

"It may interest some of your readers to hear of a very peculiar pigeon, much valued by the Mussulmans of this country. It is called *Lotan* in Hindustanee, and its peculiarity consists in its tumbling on the ground instead of in the air. When required to tumble, they are taken in the hand, the head slightly rubbed or 'filliped' with the finger, and then they are put on the ground, where they continue to tumble until taken up. I have not seen them left on the ground until their tumblings are completed, being invariably taken up after they have tumbled about a dozen times. I should imagine they might injure or exhaust themselves if left longer. The pigeons are always white, and although the wings are long and pointed, they seem to have but small powers of flight. It is only lately I have heard of these pigeons, although seven years in India; but, on inquiry, they seem to be not uncommon."

In a subsequent letter our correspondent adds :—

"Two days ago I got a pair of Lowtans from Madras. They are pure white in colour; the cock is smaller than a common pigeon; the bill in front seven-eighths of an inch long (the bill of a common white pigeon being only three-quarters of an inch). The upper mandible appears to be more hooked at the extremity than the same part in the common pigeon. The bill is of a very delicate, translucent-looking flesh colour. The eyes far back, round, and full. The head is very long and flat in profile—in this, as well as I can remember, differing very much from the 'model tumbler.' On the neck the feathers turn upwards, forming a crest, which comes barely above the level of the top of the head: on the lower part of the neck, from the point where the crest rises, the feathers turn downwards and sideways for a short distance, so that there is a point on the neck where the feathers turn in three directions. The legs are deep red; tarsus naked on the back from the joint; middle toe one and seven-eighths inches long, the same length as that of the common pigeon. The wings are of the same length, comparatively, as those of a common pigeon; the cock carries his above the tail. The tail is about as broad, and carried as I would expect in a common pigeon, with a slight touch of a bad fantail. The neck and breast appear narrower and less rounded than in the common pigeon. This may be more conspicuous from the long head. What would be the hackle in a cock is a little rough all round the front and sides of throat. The hen is much smaller than the cock; she carries her wings below the tail, and her toes are slightly feathered. If I have left anything of importance out in the above description, I shall be happy to supply the information requested.

"None of my people, although I have several Mussulmans in my service, know anything about these pigeons except the name. I therefore ordered somebody to be brought to me who did. A Mussulman policeman was soon produced, and at once recognized them as Lowtans. I told him to make them tumble. So, having

caught one, by placing his hand on the back, he put his first and second fingers on either side of the neck, and shook the bird four or five times horizontally, holding it in one hand only; he then put it on the ground, and it tumbled backwards so quickly that the eye could not follow it. After what I judged to be a dozen tumbles, he took it up and breathed on its head (why, I do not know), and put it on the ground, when it appeared as well as possible, and picked about. The same process, with the same result, was gone through with the hen. The birds, whilst tumbling, appeared as if in a fit and unable to control their motions. I then asked the man why he did not tap them on the head, as I had before seen done to Lowtans, and he said, 'these pigeons were not high caste enough for that.' I made him try, however, but without any result.

"I have made a great many inquiries about the origin of the Lowtan. It appears that Abool Furjool, Prime Minister of Achbar Khan, and author of 'Aneen Achbar,' or 'Annals of Achbar,' about the year 1596, wrote a treatise on pigeons, of which birds his master, Achbar, was very fond. Darwin alludes to this in his 'Origin of Species,' but, singularly enough, does not say a word about the Lowtan. However, Abool Furjool is said to give a full description of them in his book, and says there are two sorts—first, 'Kulmee Lowtan,' or pigeons which, when 'touched,' tumble; and secondly, 'Sadhee Lowtan,' or common Lowtan.

"I have been informed that all Lowtans would go on tumbling until they died, and that they not unfrequently die whilst tumbling, although apparently taken up in good time. The matter seems to me well worthy of being pursued, and any new facts noted which would show how this very curious faculty has been acquired, or whether it is only a disease which has become hereditary.

"The pair I have have had several pairs of young ones; the peculiarities of the old birds, such as the slight ruff on the head, have been faithfully reproduced in the young ones. The tumbling propensity is hereditary, as I tried the young ones when fifty days old, and they tumbled just as the old ones do.

"I have not seen the Kulmee Lowtan, as all that were at Cuddapah were purchased for some petty rajah, at 25 rupees (£2 10*s.*) per pair. The Kulmee Lowtan tumbles on being slightly struck on the head with the finger. The Sadhee Lowtans are pure white, with a small ruff of feathers turned forwards at the crown and down the neck.

"I am afraid the word 'Tumbler' has led to a misapprehension; 'Roller' would be more correct. Indeed, Lowtan is from the Hindustani 'lotna,' to roll on the ground.

"On taking the bird in the hand, with the head between the first two fingers, shaking the bird horizontally five or six times, and then putting it down, it rolls backwards with outstretched wings, apparently in a fit, and goes on rolling in a zigzag course as long as you leave it, all volition apparently suspended. The natives say if you leave them they will roll until they die. I have never left them long enough to prove if this is correct. "SMOOTH-BORE."

Another correspondent, who employs the *nom de plume* of "Gunga Gee,"

writing from Rohilcund, in the North West Provinces, gives a description of the Lowtan from that part of India, which is also of much interest.

"Lowtans are not uncommon about here, and I have kept them for more than two years.

"I never heard of them in England; but I had concluded that they must be known, at any rate by name.

"The Lowtan is a strong hardy pigeon, and rears its young well. I have now some seven or eight pairs. All are pure white, and I believe white to be the proper colour, though I hear that Lowtans of other colours are to be met with. The Lowtan has a turncrown, and except that it is all white, I think it pretty closely resembles the Nun in appearance: it has a dark eye. I write from recollection, as I have not seen a Nun for years, and having now been away from my station for a month, I have not looked at the Lowtans before writing.

"The Lowtan is not a tumbler, and does not resemble the Tumbler in a single point. It ought rather to be called a roller than a tumbler, as otherwise it may be supposed to be a variety of the Tumbler. Roller is, too, a better translation of the vernacular name, and gives a better idea of the Lowtan's motion. Lowtan is from 'lotna,' to roll, a word never used in describing the motion of a Tumbler pigeon.

"The curious point about these pigeons is that they never roll of themselves, and yet I do not think any Lowtan ever fails to roll on being shaken in the proper way.

"The bird is taken in one hand, the head coming up between the first and second fingers, and is then moved from side to side rather quickly, by a motion from the wrist. The bird is then placed on the ground, when it immediately commences rolling over and over, apparently without any control over its movements. On being taken up the bird quickly recovers.

"I am sorry I cannot say how long a Lowtan will continue to roll, as I have always taken them up before they stopped of themselves. I hardly ever make my Lowtans roll, as it is not a pleasant sight, and when one has seen it once there is no variety about it.

"Natives say that if allowed to roll too long the birds are likely to injure themselves. Except when taken in the hand and shaken, Lowtans never roll, or show any inclination for rolling, but fly about like other pigeons.

"I am describing the common Lowtan, as I have never seen the other breed, spoken of as the 'high caste' Lowtan. I have, however, often heard of them, and I expect to receive a pair in a few weeks. I hear that in colour and form they exactly resemble the common breed, the only difference being that the common Lowtan has to be shaken from side to side, while the other is said to roll on the head being lightly touched. About here they are known as the *Choteen* Lowtan, because they are said to roll on the turncrown (*chotee*) being touched; the Choteen Lowtans are said sometimes to commence rolling on accidentally knocking their heads against anything, but I hardly believe this."

"*January* 26*th*, 1867. "GUNGA JEE."

"Since writing my last letter I have tried to procure some Kulmee Lowtans. I was so often disappointed that I began to have doubts as to the existence of the Kulmee Lowtan in this part of the world. I have, however, in the last week or two procured four pigeons, all of which roll on the head being touched with the forefinger. They are not all well bred, as I think three out of the four are mongrels, though they all roll well.

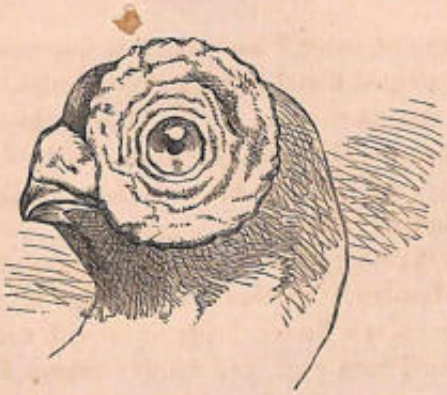
"One is exactly like my other Lowtans in appearance, and I think this is probably a Kulmee Lowtan. Another is exactly like my common Lowtans, except that in colour it resembles a Turbit, being white with dark shoulders. This is the only coloured Lowtan I have seen, and for this reason I think it probably cross-bred. The other two are a pair of squeakers; they are white, but their turncrown is not nearly as well developed as in the other Lowtans, and they have great long legs feathered to the toes. I think these must be a cross between a Kulmee Lowtan and a pigeon here called 'Paeemoya' (stocking-footed). I have tried all these pigeons, and each rolls on the back of the head being struck with the fore-finger. They were brought to me by a poultry-dealer, and I could not ascertain anything as to their parentage.

"I had been told by natives that a Lowtan would continue to roll until it died. I tried two a few mornings ago, and found that they soon stopped, quite exhausted. They lay on their backs with the wings stretched out, not having strength to turn over again. They were all right again in a minute or two.

"GUNGA JEE."

We should imagine that this habit of rolling when shaken from side to side would be easily acquired. It would be very interesting to ascertain whether or not any of the common Rolling pigeons or the House or Air Tumblers would execute this performance if treated in the same manner as that by which the Indian Lowtans are made to roll along the ground.

These eccentric movements, which obviously depend on an extra irritability of the nervous system, are not strictly confined to the breeds now under notice. The tremulous motion in the neck of the Fantail is apparently of the same character, and appears partially involuntary, being often carried to an extreme degree, and continued for a considerable length of time, when the animal has been excited.



HEAD OF BARB.

CHAPTER XIII.

THE BARB.

THE Barb, or Barbary pigeon, is one of those varieties whose history can be traced back for a considerable period: it was certainly well known in England during the sixteenth century, for Shakspeare, in *As You Like It*, which was entered at Stationers' Hall in 1600, makes Rosalind, when disguised as a youth, say, "I will be more jealous of thee than a Barbary cock-pigeon over his hen,"—Act iv. Scene 1. Our intercourse with the north of Africa was at that period not unfrequent, and many of the domestic animals of the district had been imported into this country. Shakspeare frequently alludes to Barbary horses; and in the second part of *King Henry IV.*, Act. ii. Scene 4, makes Falstaff say, "He's no swaggerer, hostess; . . . . . he'll not swagger with a Barbary hen, if her feathers turn back with any show of resistance." This allusion was most probably to a Frizzled fowl.

Willughby, in his "Ornithology," published in 1678 by the celebrated naturalist John Ray, describes the Barbary pigeons. He says of them, "A broad circle of naked tuberous white flesh compasses the eyes, as in the Carrier; the irides of the eyes are white. My worthy friend Mr. Phillip Skippon, in a letter to me concerning tame pigeons, writes that the eyes of this kind are red. Perchance the colour may vary in several birds."

The engraving in Willughby's "Ornithology," which is given as that of a Barb, represents an ordinary-looking pigeon, with a small eye-wattle and slight turn-crown at the back of the head.

Moore, in his "Columbarium," calls this variety *Columba Numidica*, the Barb, or Barbary pigeon, and describes it as follows:—

"This pigeon is in size somewhat larger than a Jacobine; it is called a Barb for shortness, instead of the Barbary pigeon, being originally brought from that

country. It has a very short beak, like a bullfinch, with a very small wattle, and a naked circle of tuberous red flesh round the eyes, whose irides are of a pearle colour; the broader and redder the flesh is, the more the bird is valued, though it is very narrow when the bird is young, and does not come to its full growth till they are four years old. Some of them have a tuft of feathers on the hinder part of the head, somewhat like a Finnikin, and others not.

"Mr. Willughby, in his description of this bird, is guilty of a very great mistake, in imagining the tuberous flesh to be white in some birds of this kind, which it never is, though it will grow pale when the bird is sick; but when it recovers, always reassumes its wonted redness.

"Their original colour is either black or dun, though there are Pieds of both these feathers; but they are bred from the Barb and Mahomet, and are not so much valued."

The compiler of the Treatise of 1765 copies Moore in his account of the Barb almost verbatim, and, as usual, without any acknowledgment, adding nothing of his own except that some Barbs are splashed, and that he has seen one that was an Almond.

Mr. Brent's account of the origin of the breed is very loose: he says that he has read that they are to be found wild in Barbary, and also that they are much prized in India. The first statement is certainly destitute of the slightest foundation, as the Barb is an artificial variation, existing only in a state of domestication.

The Rev. E. S. Dixon merely repeats the account of previous authors.

For the following admirable account of the properties of the birds of this breed, we are indebted to the kindness of Mr. P. Jones, one of the most enthusiastic admirers and successful breeders of the variety. He writes as follows:—

"Without pretending to much knowledge of the ancient history of the Barb, it may pretty confidently be affirmed that it has always held a high place among fancy or toy pigeons; indeed, among the numerous varieties comprised in the catalogue of toys, it is not assuming too much for the Barb to say that it holds the very first rank in that very interesting group, and may fairly be classed as next in importance to the high-caste Almonds, Carriers, and Pouters: and it requires as much patience, as great an amount of skill and experience, or (what after all may have more to do with the result than many breeders like to acknowledge) as great a share of good luck, to produce a perfect pair of Barbs as it does any of the highly-prized varieties just named; and for intrinsic value among fanciers they are not far behind any others, as £10 and upwards is not an unusual price to be obtained for a first-class bird.

"A few years ago, some very first-rate Barbs were imported, by one of the principal metropolitan dealers, from the south of France, from some of the ports on the coast of the Mediterranean, the progenitors of which had probably at some time or other come from the opposite African shore—at least the belief prevails that from thence came our first Barbs. From these imported kinds just spoken

of may be traced the descent of most of the best birds at present in existence, though it must be confessed that as a rule they do not appear to have been much improved by the English breeders, and a good leaven of newly imported birds, with good first-class properties, would doubtless be welcomed by most of our Barb breeders of the present time.

"In describing the properties of the Barb, as recognized at the present day, one of the first things to be determined is their size. In this respect I am aware that considerable difference of opinion exists among breeders; but for my own part, I must strongly maintain that Barbs should be small by comparison with the larger breeds—by which I mean that Barbs of a small size, possessing equal properties in other respects, are to be valued above larger birds. I am fully aware that it is much easier to breed large coarse birds with many good properties, than it is to produce small ones; and I believe that many breeders are fain to accept the inevitable, and take 'the good the gods provide,' in lieu of that which they would get if they could. Having said so much about size, it is desirable to lay down a rule or standard, and I do not hesitate to say that a first-class cock Barb should not weigh over 1 lb., while one of 12 oz. is to be much preferred. Hens average from ½ oz. to 1 oz. less than cocks.

"The principal properties or characteristics of the Barb are in the head, though shape and carriage are also very important items, and must on no account be lost sight of; the flight-feathers are rather longer than in most other varieties, and serve to carry off the somewhat bulky appearance of the body of the bird. With regard to colour, Barbs are usually self coloured, and the prevailing hues are black, white, yellow, red, and dun. Splashed and mottled birds are sometimes produced, and may be useful for crossing, but as yet they have done nothing in the show-pen. In value, I should estimate the colours in the following order:—1st black; 2nd yellow; 3rd white; 4th red; and 5th dun.

"The beak in the Barb is short and thick, not shaped like that of the parrot, but with the upper and lower mandibles meeting, as in the bullfinch—the thicker the lower mandible the better. The beak should be furnished above and below with a neatly shaped fine wattle, of a white or very pale colour. The iris of the eye in the Barb should be white or pearl-coloured in all the dark-feathered varieties, though many otherwise good birds have yellow or gravel eyes. The eye-wattle is of a brilliant red or coral colour, and should be large and well defined, standing out boldly from the cheeks and evenly distributed round the eye; a deficiency of wattle at the back is the prevailing fault. The texture should be fine and velvety. There should be no vacant space or distance between the eye and beak-wattles: they should meet, but not be crowded together. The skull is broad, square, and flat on the top; the profile, from top of skull, between the eyes, to tip of beak, should be an unbroken line or curve, without break or indentation at the insertion of the beak or its junction with the skull. The chest is full, round, and prominent; the neck small at the intersection of the head, gradually and gracefully swelling to the fully developed shoulders; and the bird

altogether plump and fleshy. Barbs are hardy birds, and good breeders when at liberty, though apt to neglect their young at an early age when in confinement. They do not care to fly much when at large, rarely leaving the roofs of houses or making more than very short flights.

"The following weights and measurements of good birds of this breed are taken from specimens in the writer's possession :—

Cock.—Weight, 11½ oz.; length, 12½ inches; length of beak, ½ inch; width of skull, 1 inch; eye wattle, ⅞ths.

Hen.—Weight, 11 oz.; length, 12 inches; length of beak, $\frac{9}{16}$ths; width of skull, ⅞ths; eye-wattle, full ¾ inch.

"The properties of the Barbs may be thus summarized :—

Head—The skull should be very broad and square, the face as short as possible.

Beak—The beak should be very short and thick, and pale in colour.

Eye—The iris of the eye should be of a pearl white.

Eye wattle—The wattle around the eye should be as large and round as possible—of an even and regular shape and fine texture, free from projections and spouts, and of a bright red or coral colour.

Beak-wattle and Jewing—The wattle should be large and white, and very fine in texture.

Size—The weight of a Barb should not exceed one pound.

Shape and Carriage—Barbs should be broad and full-chested, round and plump in hand, with the neck moderate in length, and tapering rather suddenly to the head. The carriage should be graceful and easy, with the head well back, but not borne like that of an Almond Tumbler.

"White Barbs at present have only been seen with the dark or bull eye. But there is a probability of the pearl eye being worked into them, which I think will be a great improvement.

"With regard to breeding Barbs for colour, I have seldom found that, when birds of one colour have been matched together, foul-feathered birds have resulted, excepting occasionally in the case of reds, which, when matched together, have sometimes produced young birds with one or two white feathers in the tail or on top of the rump, and now and then a pure yellow. A black and a dun mated together will most frequently produce blacks, though sometimes a young dun will appear. Black and red do well together; I have bred some capital reds from this cross. Two yellows mated together will, unless one or other of the birds is very strong in colour, often throw birds which are pale or washy in the flight-feathers. A red cock and yellow hen is a good cross for breeding yellows, and a soft-coloured dun hen to a yellow cock is also likely to prove successful in producing good yellows. I have a very excellent pair of good sound-coloured young yellows, bred this season from an old white cock and yellow hen. I do not, however, recommend this union of colours; indeed, on several occasions

BLUE OWLS.

BARBS.

the only kinds I have got from white and yellow, or white and dun, have been bad-coloured black birds, with dark india-rubber-looking beaks.

"When recommending the above modes of breeding for colour, it must not be expected that the results will always be the same. Indeed, as a notable instance of the uncertainty of producing any given colour by matching together differently coloured parents, I may state that last season, from a red cock and dun hen, I produced and reared every known colour in Barbs, viz., two whites, two blacks, one red, two yellows, and one dun. The cock was from a very pure strain of reds, which I have had for several years, and the hen from a yellow and dun. From a splashed cock and yellow hen I have now a young bird as nearly blue as possible. To sum up these remarks on breeding for colour, I may say that, for breeding purposes at any rate, a good Barb, like a good horse, 'is never of a bad colour,' and, with the exception of whites, I should have no hesitation in putting together a pair of birds of any two colours provided they were a suitable match in other properties."

These valuable remarks of Mr. P. Jones so fully exhaust the subject, that there remains but little to be added.

The engraving of the Barb in Willughby's "Ornithology" represents a bird with a turn-crown at the back of the head; many Barbs at the present time still retain this peculiarity of plumage, but as a general rule they are much inferior to the plain-headed birds. Nevertheless, we have seen some very good turned-crown Barbs; but the present fashion is decidedly opposed to chignons—at least in this variety of dove.

The old authors describe a breed known as the Mahomet, or Mawmet, but of which little is known beyond the fact that it closely resembled the Barb, except in colour.

The writers themselves did not agree as to its character. Willughby is the first to allude to it, and he merely states, "Mawmets, called as I take it from Mahomet, perchance because brought out of Turkey, are notable for their great black eyes, else like the Barbaries."

Moore writes:—"This pigeon is no more in reality than a white Barb, which makes the red tuberous flesh around the eyes look very beautiful." He then proceeds to give the legend that it was called the Mahomet because the author of the Alkoran had taught a tame bird of this breed to feed out of his ear.

The writer of "The Treatise" of 1765, gives us on this occasion, a paragraph of original matter, and states:—

"I think Mr. Moore has extremely well accounted for its being so called; but it is the opinion of many fanciers that the bird called a Mahomet is nearly a cream-coloured, with bars across the wings as black as ebony, the feathers very particular, being of two colours; the upper part or surface of them appearing of a cream, and underneath a kind of sooty colour, nearly approaching to black; as are likewise the flue-feathers, and even the skin, which I never observed in any other pigeon but these; its size much like that of a Turbit, with a fine gullet, and in

lieu of a frill, the feathers rather appear like a seam: the head is short and inclined to be thick; hath an orange eye, and a small naked circle of black flesh round the same, and a beak resembling that of a bullfinch, with a small black wattle upon it."

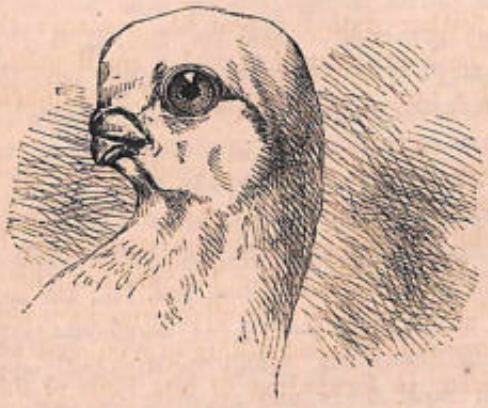
From this very circumstantial account, it would appear that there really existed, a hundred years since, a barb-like breed with black skin and wattles and dark under-down to the white plumage. In these respects the birds would resemble somewhat the black-skinned silky fowl. The proof of their continued existence would be of great interest to those naturalists who have studied the varieties of species, and the Editor would be most willing to reimburse any reasonable expense his readers might incur in forwarding to him birds of this breed, should they be sufficiently fortunate to meet with them in any part of the world.

Mr. Brent, writing in the "Poultry Chronicle," Vol. II. page 202, says:—

"This is one of the varieties of Fancy Pigeons with which I have but a very slight acquaintance, having only once seen a pair at a London dealer's, and their appearance gave me the idea of a cross between an Owl and a Barb pigeon; nevertheless, their seam and black wattle, sere and skin, I consider sufficient distinctive peculiarities to give them a place among Fancy Pigeons as a separate variety."

We should be very doubtful whether the birds thus cursorily seen by Mr. Brent possessed the black skin and wattle described by the older authors. Certainly a cross between an Owl and a Barb would not give rise to such a character.

Before concluding the history of the Barb, the Editor may state one fact for the benefit of such of his readers as are Barb fanciers:—Some years since, he possessed some very superior birds of this variety; wishing to try some experiment in increasing the size of the eye-wattle, he obtained one of the largest-eyed Carrier hens ever seen,—her eye was so large, that when flattened out, a half-crown laid upon it did not quite cover it. This hen was well known as being formerly the property of the late Mr. Southwood, and as the parent of many of Mr. Hayne's best birds. She was mated to a very short-faced Barb cock, and reared three birds one season—not one of which, strange to say, possessed an eye-wattle of even moderate goodness: as far as the experiment was conducted, it was an entire failure.



HEAD OF THE OWL.

CHAPTER XIV.

THE OWL.

UNDER the title of the Owl—or, as old Moore Latinized the name, *Columba Bubo Nominata*—a breed of fancy pigeons has been long known to English fanciers. Moore's description is very brief. He only states: "This is in make and shape like the former (the Turbit), except that the upper chap of its beak is hooked over, like an owl's, from whence it has its name; its plumage is always entirely white, blue, or black." The author of the Treatise of 1765 adds very little to this. He states that, "The Owl is, according to Mr. Moore, a small pigeon, very little larger than a Jacobine, which might be their size in his time, but at present they are brought to such perfection, that they are hardly, if anything, larger than a very small Tumbler."

This statement of the writer is erroneous, for Mr. Moore says nothing whatever of the size of the Owl, but makes the assertion quoted concerning the Turbit.

"Its beak," continues the writer in the Treatise, "is very short, and hooked over at the end, like an owl's, from whence it takes its name; the shorter it is the better; it has a very round button head and a gravel eye. The feathers on the breast open, and reflect both ways, expanding itself something like a rose, which is called the purle by some, and by others the frill, and the more the bird has of that the better, with a gullet reaching down from the beak to the frill. Its plumage is always of one entire colour, as white, a fine sky-blue, black, and yellow, &c., except some that are chequered. The blue ones should have black bars across the wings; and the lighter they are in colour, particularly in the hackle, the more they are valued.

"These birds should have their breeding places made so that they may sit in private, for they are very wild, like the Carrier, and apt to fly off their eggs if in the least disturbed."

The work ascribed to Girton merely gives the same facts as those of the Treatise, condensed into a short paragraph. And the Rev. E. S. Dixon, being unable to see any distinction, except colour, between the Owls and the Turbits, described the latter only, and hesitated to give the Owls any paragraph to themselves.

The only birds known as Owls until a very recent period, were birds of moderate size, characterized by their short hooked beaks, round heads, with prominent eyes and well-developed frill, or purle, on the breast. In colour they were generally either blue or silver, though black, white, and yellow birds were not uncommon. The blue birds were of a very peculiar hue, and had the neck feathers sprinkled with a lighter colour, which gave them a very handsome appearance, and led to the name of "Powdered-blue Owls," which was frequently applied to them. These birds were active and rapid flyers, and amongst the most beautiful of the more natural varieties.

Recently, a new variety has come upon the scene. At one of the shows held at the Crystal Palace, some eight or ten years since, a pair of exquisitely beautiful birds of a white colour, and very small in size, were shown in the variety class as Booz pigeons, from Tunis. They were exhibited by Mr. Vernon Harcourt, the gentleman who imported them into this country. The slightest inspection showed them to be white Owls of the most diminutive size, and possessing the properties or characters of the breed to a degree far surpassing the larger English specimens.

Strictly speaking, perhaps these birds should not have been noticed in the class in which they were exhibited, as they ought to have been shown in the class for white Owls; but no fancier could be found to object to the award of the first prize which was bestowed on them by Messrs. Cottle and Bellamy. This was the first introduction of African Owls into England; since that time numerous importations of white, blue, and black specimens have taken place.

One great character of African Owls is extreme diminutiveness. A pair, though in perfect health and good condition, will weigh less than one pound, first-class birds being as small as to weigh only seven ounces each. The length of a very good specimen may be stated at eleven inches, measured from the tip of the beak to the end of the tail, when the neck is extended; and the length of the beak, measured in the usual manner from the front of the eye, is less than three-quarters of an inch. The plumage is soft and delicate, the inner flight-feathers being carried rather high on the back when the wing is closed. The rose or purle on the breast should be regular and open, but the chief peculiarities are in the head. This should be small and round, and should gradually merge, as it were, into the short hooked beak. The eye should be very large, full, and expressive; the iris dark. In many of the imported specimens the head is flat at the top; this gives a longer appearance to the beak, and detracts very much from the beauty of the bird.

It is almost impossible to imagine any more beautiful birds than these exquisite little toys; their small size, the beauty of their form, their exceeding gracefulness, the purity of the colour in the white, and regularity of markings in the blue,

render them most attractive; so that when they come into competition with the old-fashioned larger English Owls, they never fail to secure the prizes. This, perhaps, is a circumstance to be regretted, as the old powdered-blue and silver Owls are birds of extreme beauty, and should not be suffered to pass away. But whether distinct classes for English and foreign Owls are desirable or not is a moot point with committees and exhibitors. But it appears that if separate prizes for each were offered, the breeder of the English birds would improve them by crossing with the African, and it would then be impossible to draw the line between them.

These small African Owls breed freely, but, as might be expected from their recent introduction from so warm a climate as the north of Africa, they are delicate birds, and in winter suffer from the cold of our ungenial climate. It would be interesting to know more respecting their history, but beyond the facts above stated we can give no further information.

Following the plan laid down in the "Standard of Excellence," authorized by the Poultry Club,* it has been suggested that the points of excellence in these birds should be as follows, so as to keep the total to the same number—fifteen—for all varieties of poultry and pigeons. The old number of five points for each variety is too small, and too incapable of subdivision to be of service for all varieties.

Head, 2; eye, 2; beak, 3; gullet, 2; colour, 2; size, 2; frill, 2—Total, 15.

Since the first introduction of these small foreign Owls, a variety with a singular modification of plumage has been imported. In these birds the tail is dark, the remainder of the plumage being perfectly white. It is doubtful whether this breed has been established for any great length of time, as the birds do not always breed true to markings, or even colour.

* The "Standard of Excellence in Exhibition Birds" is reprinted as an Appendix to the POULTRY BOOK. By W. B. Tegetmeier. London: G. Routledge & Sons, 1867.

CHAPTER XV.

THE TURBIT.

THE Turbit is a variety closely resembling the Owl in many respects; it has, however, been distinguished as a separate breed for many years. Willughby, in his "Ornithology," 1678, writes as follows respecting this race:—

"Turbits, of the meaning and original of which name I must confess myself to be ignorant, have a very short thick bill, like a bullfinch; the crown of their head is flat and depressed; the feathers in the breast reflected both ways. They are about the bigness of Jacobines, or a little bigger. I take these to be the Candy or Indian Doves of Aldrovandus, the Low Dutch Cortbeke."

Moore, in the "Columbarium," gives the following short account of the breed:—

"The reason why this pigeon is named by the English I cannot by any means account for; the Low Dutch call it cort-beke, or short-bill, upon account of the shortness of its beak. It is a small pigeon, very little bigger than a Jacobine; its beak is very short, like a partridge, and the shorter the better; it has a round button head, and the feathers on the breast open and reflect both ways, standing out almost like fringe or the frill of a modern shirt; this is called the purle, and the more of it the bird has, the more it is admired. As for the feather, their tail and the back of the wings ought to be of one entire colour, as blue, black, red, yellow, dun, and chequered; the flight-feathers and all the rest of the body should be white. They are a very pretty light pigeon, and if used to fly when young, some of them make very good flyers. I have seen a flight of them kept by one Girton, that would mount almost as high as Tumblers. There are of this sort all white, black, and blue, which by a mistake are often called and taken for Owls."

This description by the compiler of the Treatise is almost literally the same as that of Moore, but he adds that the Turbit should have a head "with a gullet," and that in the red and yellow birds, the tails should not match the shoulders in colour, but be white.

In the work nominally written by Girton, the account is again a close copy of Moore; and it is interesting to note, that the flight of Turbits, which Moore, writing in 1735, says "were kept by one Girton," in Girton's book, which was certainly published between sixty and seventy years after the date of Moore, is

thus alluded to : "A veteran fancier of some note has informed us that he trained a flight of these birds, which for their lofty soaring seemed to dispute the palm with his Tumblers."

Eaton adds nothing of his own on the birds of this breed. The late Mr. Brent, in his communication to the defunct "Poultry Chronicle," gives a good account of this variety, which he had ample opportunities of seeing during his residence in Germany, where they are favourites. His account is as follows :—

"The Germans call them 'Moven-Tauben,' under which name both the Turbit and Owl pigeons are included. The Turbit is separately known as 'Schildchen,' or 'Lutticher-Schildchen,' or 'Brief-trager,' which means the little shield of Liége, or Liége Letter-carrier, which latter designation is equally applicable to the Owl pigeon. As I did not meet with any of this variety in France, I do not know their French name.

"The Turbits are a very pretty variety of fancy pigeons; they are small plump compact-made birds, of rounded form and engaging appearance; their beaks are short and thick, their eyes large and prominent, of a very dark brown or black colour; their heads broad and rather angular: they are usually smooth-crowned, though some are point-headed, and others have tolerable hoods; beneath the beak the skin is slightly extended, and a little resembling the dewlap of the bull, taking off the abrupt or angular junction between the beak and the neck, this is called the gullet; on the lower part of the neck and crop a seam of feathers stands up and turns various ways—this is called the purle, and the more the bird has of it the better; their feet are clean, and the tail is carried rather elevated. Their plumage is a beautiful white, relieved by dark wing shoulders, of various colours, from which they are called blue-shouldered or black-shouldered Turbits, as the colour indicates. To be perfect in colour, the whole of that part of the wing should be coloured, without any white feathers, including the epaulet or scapular feathers; the flight-feathers of the wings and the whole of the other parts being an unspotted white.

"The old fanciers admired the black, blue, and dun-shouldered Turbits most, when they had tails of the same colour as their shoulders; but such birds are now rarely seen, though some fanciers prize them highly, on account of their great scarcity, the other colours being invariably found to have white tails, which are now more general with all. Canterbury was, a few years back, noted for its Turbit pigeons; they were bred there in the highest perfection; the colours of their shoulders are various, as yellow, red, copper, black, chequered, blue, silver, mealy, and dun. They are good flyers, light and active, as may be supposed from their German name of Liége postmen. I have flown a few with my Tumblers, with which they would soar: they are very good breeders and nurses, if not bred too high, which, however, is often the case, as smallness is considered a great beauty. Some eminent writers on natural history consider this variety as one of our purest races of pigeons."

The occurrence of dark-tailed birds amongst the Owls has already been

described. This variation occasionally takes place amongst the Turbits also, though at the present time they are generally bred with white tails.

The Turbit, as represented in the engraving in the Treatise, is plain headed; at the present date these birds are seldom if ever seen, preference being given to a point of feathers at the back, or to such an amount of turn-crown as forms a shell. It is almost needless to say, that to be successful at an exhibition, the pair of birds must match in the head as well as in colour of shoulder.

The general character and properties of the breed have been so fully described by the authors quoted, that it is unnecessary to go into further detail. One very pretty variety of the breed has, however, escaped the notice of former writers: it is that in which the black bars of the blue-shouldered bird are superseded by white bars. We have had some exceedingly delicate and beautiful birds of this variety, which, like most white-barred breeds, are, we believe, of German origin.

One other point requires notice in reference to this breed. Temminck, in his "Histoire Naturelle Générale des Pigeons," published at Amsterdam in 1813, gives a description of the Turbit or "Pigeon à Cravate," Vol. I., page 198, in which he expresses his belief that the Turbit is not derived from the Rock dove; this opinion being founded on the excessively short, thick, and hard beak, and on the supposed sterility of the Turbit when mated with the Rock dove, or breeds closely resembling that wild race. We mention this opinion merely to state that it is based on imperfect evidence. The shortness of the beak is no mark of specific difference, and the Turbit is perfectly fertile when mated with any and every other variety of pigeon. The opinion is so destitute of any foundation, that it would hardly be worth contradicting, were it not that it has found its way into books and been accepted as a fact.

In our experiments on flying pigeons, we have tested the homing powers of both Turbits and Owls. The former we have lost within half a mile of their home, whereas the stout blue English Owls, if well trained, make excellent homing birds.

TURBITS.

JACOBINES.

HEAD OF JACOBINE.

CHAPTER XVI.

THE JACOBINE.

THE Jacobine pigeon is one of the oldest breeds of which we have any special record. The striking character of its plumage attracted the notice of the old artists and naturalists, and consequently it is frequently to be seen figured in the engravings of some two hundred years since. Willughby, in his "Ornithology," published in 1678, gives a drawing of a short-beaked Jacobine with a fair-sized hood and long narrow chain, the feet being rather heavily feathered, and he furnishes us with the following account of the breed:—

"Jacobines are called by the Low Dutch, Cappers, because in the hinder part of the head, or nape of the neck, certain feathers reflected upward encompass the head behind, almost after the fashion of a monk's hood, when he puts it back to uncover his head. These are called Cyprus pigeons by Aldrovand, and some of them are rough-footed. Aldrovandus hath set forth three or four either species or accidental varieties of this kind. Their bill is short; the irides of their eyes of a pearl colour, and the head (as Mr. Cope told us) in all white."

The next author who describes them is Moore, who, in his "Columbarium," gives separate paragraphs descriptive of the "accidental varieties" alluded to by Aldrovandus and Willughby. Respecting the Jacobine, Moore writes as follows:—

"The Jacobine, or as it is vulgarly called for shortness, the Jack, is, if true, the smallest of all pigeons, and the smaller still the better. It has a range of feathers inverted quite over the hinder part of the head, and reaching down on each side of the neck to the shoulders of the wings, which forms a kind of a fryer's hood; from hence this pigeon has its name Jacobine, because the fathers of that order all wear hoods to cover their bald crowns; hence the upper part of this range of feathers is called the hood, and the more compact these feathers are, and the closer to the head, so much the more this bird is esteemed. The lower part of this range of feathers is called by us the chain, but the Dutch call it the cravat; the feathers of this chain ought to be long and close, so that if you strain the neck a little, by taking hold of the bill, the two sides will lap over each other in some of the best; but there are but very few now to be found in England compleat.

"The Jacobine ought to have a very short bill, the shorter the better, and a clean pearle eye. As for the feather, there are reds, yellows, blues, blacks, and mottles; but be the feather what it will, they ought to have a clean white head, white flight, and white tail. Of these pigeons some are feather-legged and footed, others are not, and both sorts are equally esteemed, according to the various inclination of different fanciers."

Under the title of the Capuchine, Moore alludes to a breed which is evidently nothing more than an inferior or cross-bred Jacobine. He says:—

"This pigeon is in shape and make very like the Jacobine, and has its name, like the former, from another set of hooded ecclesiastics. It is something larger in body than the Jack, its beak longer; it has a tolerable hood, but no chain; it is in feather and other properties the same. Some will assert it to be a distinct species, but I am more inclinable to imagine it to be only a bastard breed from a Jacobine and another pigeon; however, thus far I am sure, that a Jack and another will breed a bird so like it, as will puzzle the authors of this assertion to distinguish it from what they call their separate species."

Moore also describes, under the name of the Ruff, a larger and coarser breed, of which he states:—

"This pigeon is larger than the true original Jacobine, though in shape and make much the same. It has a longer beak, the irides of the eyes in some are of a pearl colour, in others of a gravel colour; the feathers of its hood and chain are much longer, though the chain does not come down so low to the shoulders of the wings, neither are they near so compact and close as the others, but are apt to blow about with every blast of wind, fall more backward off the head, and lie in a rough confused manner, whence the pigeon has its name. The strain of Jacobines has been much vitiated by matching them to this pigeon, in order to improve their chain by the length of the Ruff's feathers, but instead of this, the Jack is bred larger, longer beaked, looser in its hood and chain, and in short, worsted in all its original properties."

The compiler of the Treatise of 1765, writing of the Jacobine, borrows, as usual, from Moore, without acknowledging the obligation, and adds the following:—

"The Jacobine, or as it is more commonly called for shortness, the Jack, is a remarkably pleasing bird; but it is difficult to obtain any that are really good, the breed of them having suffered much, in my opinion, in general, by a wrong method of propagating them, viz., that of intermixing the breed of the Ruff with them, in order to improve their chain by lengthening the feathers thereof, whereby the chain is considerably detrimented, by being looser and not so closely connected as it otherwise would have been, had the Jack and the Ruff been entirely kept separate. It has likewise caused the Jack to be bred larger, a longer beak, and looser in its hood than it was originally; for the true Jack is a small bird, very little larger than a Tumbler, and the smaller it is the better.

"The pigeon dealers have a method of coaxing the hood and chain of this bird (as the term is), which they perform by clipping the feathers at the back part of the head and neck, and continually stroking the hood and chain forwards, which makes them advance further than they otherwise would; and sometimes they cut a piece of skin out between the throat and the chest, and sew it up again, by which means the chain is drawn closer. It should have a very small head, with a quick rise, &c., and spindle beak, the shorter the better, like that of a Tumbler, and a pearl eye."

The late Mr. B. T. Brent, who, from his long residence in Germany, was well acquainted with the varieties reared in that country, gave a very good description of the Jacobine and its allied varieties in the *Poultry Chronicle*. He states:—

"The common Jacobine pigeons are well known on the Continent; the Germans call them 'Zopf,' 'Perucken,' or 'Schleier-Tauben,' as also 'Kapuziner.' The French know them by the name of 'Pigeon Capucin.' They should have a rather short stout beak and a pearl eye; the feathers at the back of the head and sides of the neck are reversed in their position, and form a compact hood and chain, reaching down to the bend of the wings; the more even and closer setting they are, the more is the breed esteemed. The hood and chain constitute the chief characteristics of the breed, and give the bird an interesting appearance, forming a frill round the head, in resemblance of Queen Bess. At the lower part of the chain the feathers turn out all round and expose a centre spot of white down. Their colour is usually red or black, bald-headed, that is, with a red or black body, the head, tail, flight, rump, thighs, and vent white; and to be perfect there should be no intermixture of colours, as dark feathers where they should be light, or *vice versâ*, which would be considered a blemish, as also a bull (*i.e.* black) eye; there are also yellow and blue baldheaded Jacks, and some that are mottled on the wings, and I once saw a dun baldheaded Jack. Quite white are not uncommon, and the Germans have some quite black; they are mostly clean-legged, but some are feather-footed.

"The various names of this kind of pigeon, as 'Jacobin,' 'Nonnain,' 'Kapuziner,' &c., are traceable to the resemblance of the white head of the

bird enveloped in the dark hood, to the shaven crown of those ecclesiastics partially covered by the cowl. The high-bred Jacks are tender, and not the best of nurses, consequently the young should be raised under other sorts, like many other of the different kinds of Fancy Pigeons; their greater value being ample remuneration for the extra trouble. The commoner sorts are very fair breeders, but not being good flyers, are not adapted to procure their living abroad, nor are they suited to contend for food among the other inhabitants of the poultry yard, as, from the hood and chain obstructing the backward vision, they are frequently pounced upon unawares by any malicious enemy. The Fancy demand pearl eyes in white, as well as Jacks of any other colour. The so-called Jacobines of the present time are comparatively but degenerate examples of the beautiful short-faced Jacks of former writers; and if any one wishes to excel in the reproduction of exquisite Jacobines, they must, by careful matching and in-and-in breeding, reduce the best of the present Jacks to the former standard of excellence; a small pigeon, short beak, and close compact hood, with a chain reaching to the shoulders (perhaps a slight admixture with a clean-marked short-faced Baldheaded Tumbler, if judiciously used, would be advantageous in this matter); but as the in-and-in breeding, if carried to any extent, will weaken the birds and reduce their prolificness, the advantage derived must be in the enhanced value of the produce."

Mr. Esquilant, the Secretary of the Philoperisteron Society, has long been a very great admirer and successful breeder of this very beautiful variety. He has most kindly favoured us with the following notes on the characters of the breed, as existing at present:—

"The Jacobine pigeon—really good specimens of which are now so scarce—has always, from its exceeding elegance, been a favourite of mine; it is therefore with much regret I have observed, during the last ten years, that it has been so much neglected.

"The most important points and properties of the Jacobine I consider to be the hood, the mane, and the chain.

"The hood consists of a number of closely-arranged inverted feathers, of the same colour as the body and shoulders of the bird, and perfectly free from white; these spring from the upper part of the back of the neck of the bird, and should appear almost as if glued down to the top of the head. These feathers are continued down the front of the sides of the neck, forming the chain, and the lower they reach and the closer they come together on the front of the neck and breast, the more valuable the bird; a good test of this important property is to slightly stretch the neck of the bird, when in good specimens the feathers, being slightly curled, will lap over each other in front.

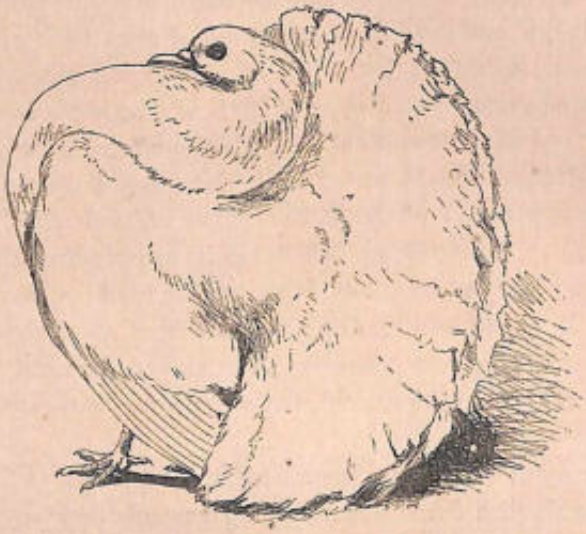
"The mane, which is in reality a most important feature in this bird, seems to be almost lost sight of, and has degenerated, in most specimens, into a succession of frills. I cannot better describe a perfect mane as it should be in the Jacobine, than by designating it a 'hog-mane.'

"By the radiation of the feathers from a central point on the side of the neck,

so as to form the hood, the chain, and the mane, a fourth property—the rose—is produced. This, if well developed, is a point of great beauty; its degree of perfection always corresponds to that of the three preceding properties.

"The Jacobine should have a clean white head, the white being sharply defined or closely cut, and there should not be any white whatever under the beak. The rump, tail, and flight should be perfectly white, but I do not agree with those fanciers who consider the bird should be clean or white-thighed, as when it is so it carries too much of the Baldhead Tumbler in its appearance. The Jacobine should have a bright pearl eye set in a neat finely-shaped head; a fine white beak, with small wattle. It should be a small pigeon, free from coarseness; the weight of a good pair not exceeding twenty-four ounces. The wing should droop slightly, not sufficiently so to drag on the ground, but only to give it the low carriage peculiar to this elegant variety."

Formerly, many of the best birds were feather-footed, but at the present time the standard of the English fanciers imperatively demands that they should be "clean-legged," or free from feathers on both feet and legs. On the Continent feather-footed Jacobines are still esteemed, and they are sometimes shown with tufts over the beaks like the Trumpeter; and entirely black and other self-coloured varieties are also reared.



SIDE VIEW OF FANTAIL.

CHAPTER XVII.

THE FANTAIL.

FANTAILS are a very ancient variety; they were alluded to by Aldrovandus, and described by Willughby under the name of Broad-tailed Shakers, because, as he states, "they do almost constantly shake, or wag their heads and necks up and down; Broad-tailed, from the great number of feathers they have in their tails; they say, not fewer than twenty-six. When they walk up and down, they do for the most part hold their tails erect, like a *hen* or *turkey-cock*. These also vary much in colour."

Moore also terms this variety the Broad-tailed Shaker, and states:—"This pigeon has a beautiful long thin neck, which bends like the neck of a swan, leaning towards the back; it has a frequent tremulous motion, or shaking in the neck, especially when salacious, which is the reason why they are called Shakers. It has a full breast, a very short back, and a tail consisting of a great number of feathers, seldom less than four-and-twenty, which it spreads in a very elegant manner, like the tail of a turkey-cock, and throws it up so much that the head and tail frequently meet.

"They are called by some Fantails, and I once saw one that had six-and-thirty feathers in its tail; but when they have so many feathers it is apt to make them lop their tails, and not let them meet with their head, which is a very great fault.

"They are most commonly all white, though I have seen both black, blue, red, and yellow-pieds, but the white ones have generally the best carriage in their tail

FRILLBACKS.

FANTAILS.

and head; there are two sorts of these Broad-tailed Shakers, the one having a neck much longer and more slender than the other, but the longest neck is the most beautiful and the most esteemed."

The same author also describes an inferior variety under the name of the Narrow-tailed Shaker. He states:—

"This pigeon is reckoned by some a distinct species, though I am apt to believe it is only a bastard breed between the foregoing and some other bird. Its neck is shorter and thicker, its back longer, the feathers of its tail are not so much spread out, but fall, as it were, double, lying over one another, and the tail generally lops very much."

The author of the Treatise copies Moore respecting these varieties, without adding anything of importance, unless it be the statement that he had seen an Almond Narrow-tailed Shaker—a colour which, we may remark, would very readily be obtained by crossing a full-tailed bird with an Almond Tumbler.

Temminck gives a longer description than usual of this breed—which he terms the Peacock pigeon. He writes:—

"The *Pigeon Paon*, or Peacock pigeon, is so named because it has the faculty of erecting and displaying its tail nearly in the same way in which the peacock raises and expands his dorsal feathers. This race might also be called *Pigeons Dindons*, or Turkey pigeons, their caudal feathers being also placed on an erector muscle, capable of contraction and extension at pleasure. When they raise their tail they bring it forward, as they at the same time draw back the head, it touches the tail; and when the bird wishes to look behind itself, it passes its head between the interval of the two planes which compose the tail. They usually tremble during the whole time of this operation, and their body then seems to be agitated by the violent contraction of the muscles. It is generally while making love that they thus display their tail; but they also set themselves off in this way at other times.

"These pigeons are not much sought by amateurs; they seldom quit the precincts of their aviary; apparently the fear of being carried away by the wind (which, acting forcibly upon their broad tail, would infallibly upset them) is the reason why they do not venture far from their domicile, nor undertake long journeys. Lastly, these pigeons, which cannot by their own powers travel far, have been transported to a great distance by man; perhaps, even, they are not natives of our climate, for many doubts arise against their specific identity with the wild Rock dove. Striking characters, such as the number of tail-feathers, do not permit us to consider the wild Rock dove as the type of the Fantail pigeons.

"The Fantails are furnished with a considerable number of caudal plumes; the greater part of indigenous and exotic species of pigeons have generally only twelve tail-feathers, more or less. The majority of the Fantails have thirty-two, and even thirty-four, but such are rare.

"The Shakers, and those which have the tail only partially elevated, are originally of this race."

The conclusions at which Temminck arrived respecting the specific differences between the Fantail and the wild Rock dove were founded on an imperfect knowledge of the subject, and are not accepted by modern naturalists.

The author of "The Dovecote and the Aviary," in his facile and pleasant manner, plays, as usual, round about his subject, without giving us any new or even accurate information respecting it. He states:—

"Fantails are by no means the miserable degraded monsters that many writers would induce us to believe them to be. They may be, and often are, closely kept in cages, or dealers' pens, till they are cramped and out of health. The most robust wild pigeon would become so under the same circumstances. But if fairly used, they are respectably vigorous. It is a mistake to suppose that they are deficient in power of flight, unless their muscles have been enfeebled by long incarceration. Their tail is not so much in their way, and therefore not so unnatural (if hard names be allowed to have any force) as the train of the peacock. It is true, the tail of the Fantail consists, or ought to consist, of thirty-six feathers—three times the number which most other pigeons can boast of; but it is an excellent aërial rudder, notwithstanding.

"When Fantails breed with other pigeons, in the offspring sometimes the fan tail entirely disappears, sometimes a half fan tail remains; and I am cognizant of a case where, by coupling a true Fantail with such a bird as the last mentioned, the pure race was re-established. It is probable (but I am not able to state it) that in this case the true Fantail was a male, and the half-bred of male Fantail parentage. In cross-bred pigeons, as far as my own observations have gone, the male influence is nearly paramount. Similar facts have also occurred in the much larger experience of the London Zoological Society, as I am assured by Mr. James Hunt, their intelligent head keeper. Results with the same tendency have proceeded from crosses in other genera, as is instanced in Lord Derby's wonderful experiment with the common *Colchicus* and *versicolor* pheasants, as detailed in the December number of the *Quarterly Review* for 1850, by which it appears that a solitary male bird may prove competent to introduce his species to Great Britain, by a temporary alliance with a female quite an alien to his own blood. In a letter from Mr. Edward Blythe, dated Calcutta, October 8, 1850, he kindly informs me, 'A native friend of mine has this season bred two fine Hybrids between the male *Pavo muticus* and the common peahen, apparently a male and a female. They take much after the papa, and the male *should* be a splendid bird when he gets his full plumage.' The same is the rule with many quadrupeds. Mules are not greatly in favour with ladies and gentlemen in England, and therefore the less is known about them by educated people; but the humbler class of horse and donkey dealers will tell at once, by the ears and hoofs, *as well as by the temper and disposition*, whether any mule, offered for sale, had a mare or a donkey for its mamma. The mule children of the latter animal are much more valuable, as they exhibit not only the form, but the docility of the horse rather than of the ass.

"Fantails are mostly of a pure snowy white, which, with their peculiar carriage,

gives them some resemblance to miniature swans. Rarely, they are quite black; occasionally, they are seen white, with slate-coloured patches on the shoulders, like Turbits. A singular habit is the trembling motion of the throat, which seems to be caused by excitement in the bird. The same action is observed in the Runts, in a less degree. The iris of the Fantail is of a dark hazel, the pupil black, which gives to the eye a fulness of expression quite different to what is seen in most other birds. I mention this, because Colonel Sykes, in the "Transactions of the Zoological Society," makes the colour of the iris an important guide in determining the affinities or dissimilarities of species, believing it occasionally to manifest even generic distinctions. Now amongst Fancy pigeons the iris varies greatly, and is thought of much consequence, as is known to every amateur. The cere, at the base of the Fantail's bill, looks as if covered with a white powder."

In this short extract there are at least three important errors. Respecting the use of the tail as a medium for directing the bird during its flight, it will be found, by referring to the article on the mechanism of flight in Chapter I., that the tail is never employed for that purpose. The statements respecting the relative value of Mules and Hinnys are entirely opposed to the facts of the case; and the value of the colour of the iris as a distinguishing mark between different species is not acknowledged by either fanciers or naturalists.

Leaving the previous authors who have written on this breed, we may consider the bird as it exists at the present time.

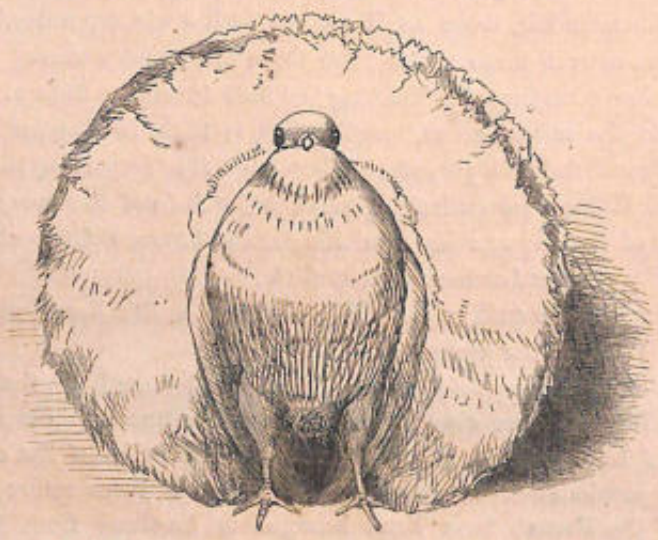
It appears tolerably certain that Fantails originated in the peninsula of Hindostan. Pigeons have always been great favourites with the inhabitants of many parts of India—not only the princes and the ladies of the court, but with the common people also. Even within the last few years many very superior specimens of the Fantail have been brought to England from India. These recently imported specimens usually differ from the English-bred birds by the possession of a slight tuft at the back of the head, resembling that of a Turbit with a pointed crown; and although in the number of the tail feathers they are often superior to birds of the English breed, they are destitute of that elegant, swan-like carriage of the neck, that adds so much grace to our native birds. At their first importation some of our judges refused to award prizes to these tufted birds; but at present they hold their own in competition, and take their fair share of the prizes.

Mr. Harrison Weir states:—"I believe it is only the coarser birds of India that have the tufts. Mine were very elegant. Not all the Indian birds have tufts, as I imported several without, with heads and necks of fine quality. Some were a blue of peculiarly rich colour. Nor do I consider the Indians always superior in tail to the English breed, having had pure English quite as fine as any foreign. The birds with turn-crowns generally lose two points in competition—the head and neck being usually coarse and thick, and the English birds being of better carriage."

The principal property in the Fantail is the extraordinary development of the

quill feathers of the tail, and the mole in which the tail itself is carried. The normal number of feathers in the tail of all the varieties of pigeons is twelve; in the Fantail the number not unfrequently approaches forty, and even as many as forty-two have been known.

In order to constitute a good Fantail, however, the tail must be carried over the back, being brought well forward. If the tail is carried horizontally backwards, the beauty of the bird is entirely lost; on the other hand, it should not be thrown forward so far as to rest upon the body; nor should the head be passed backwards between the feathers of the tail. If the tail is well carried, the fuller the better; but in a show-pen a well-carried tail of twenty-eight to thirty feathers is always



FRONT VIEW OF FANTAIL.

more effective than a badly-carried one of thirty-eight or forty. The best show-birds will be found to have about twenty-eight feathers in the tail.

The tail of the Fantail is often compared with that of the peacock; but in fact it differs from it most essentially. In the latter bird it is the tail-coverts or lower back feathers that are raised and constitute the gaudy appendage of the bird; the true tail-quills, which are few in number, are short and stout, and merely serve as strong props to support the train, when raised. In the Fantail pigeon, however, it is the quills of the tail which are erected.

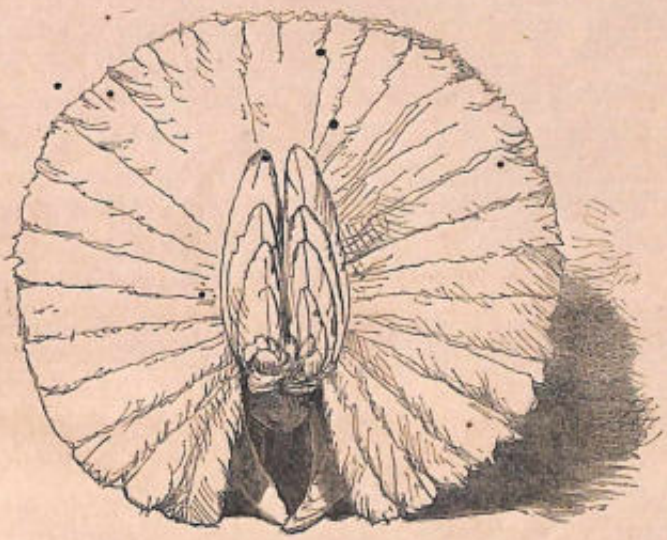
One curious result follows from the multiplication of the quills—namely, the total obliteration of the uropygium, or oil-gland of the tail, with the contents of which birds are generally supposed to oil their feathers. There is another singular effect of this abnormal multiplication of the feathers—the central feather of the tail is frequently double, two shafts, each having a vane on both sides, rising out of one quill.

The neck of the Fantail should be long, slender near the head, and curved in

a graceful swan-like manner. A thickly-feathered neck—such as is found in the tufted Indian birds—is a great drawback to their elegance. The neck is constantly moved in a peculiarly tremulous manner, which gave rise to the old name of "Broad-tailed Shakers," formerly bestowed on the breed.

In size, the Fantail should be small and *petite*.

The colour varies greatly; whites are the most frequent, but very good blacks and blues are not uncommon. Mr. H. Weir states, "There are blacks and blues quite as good as any whites. One of the best Fantail hens I ever saw was a black." By crossing, various colours may be produced. We have possessed some good reds with white tails, and others with slatey tails. Mr. H. Weir states



BACK VIEW OF FANTAIL.

that he has heard of some in India that are white with blue heads. There is no doubt but that some very pretty varieties would reward the fancier who would devote a few years to raising new colours in this breed, as by crossing a very heavily-tailed Fantail with a bird of the desired colour and markings, and carefully selecting the offspring for brood stock, there would be no difficulty in breeding Fantails with any marking that might be desired.

The Germans have self or whole coloured Fantails of the following varieties, namely, black, blue, red, yellow, as well as white. They also possess particoloured birds, as white with black shoulders and tails; but these birds fail to come up to the English standard of excellence in shape and carriage.

A statement is made in some of the works on pigeons that the Fantail is generally incapable of breeding with the Barb, or that the offspring of such a union, if produced, is perfectly sterile. Such a statement has not the slightest foundation in fact. Mr. C. Darwin, in the passage we have quoted in our Third chapter (page 29), describes such a cross; and in the course of some physiological

experiments, we had occasion to mate together several pairs of white Fantails and black Barbs; they bred freely, and the young, when mated together, bred with equal fertility. It may be stated that the colour of the produce of these crosses generally was influenced most strongly by the male bird: a white Fantail cock with black Barb hen gave us birds purely white. On the other hand, black Barb cocks with white Fantail hens always produced broods with more or less colour, varying from pure black or dark-pied birds to such as were slatey in colour; and the mongrels when mated followed the same rule.

LETZ.

TRUMPETERS.

LEIGHTON BROTHERS.

CHAPTER XVIII.

THE TRUMPETER AND THE LAUGHER.

THE earliest notice that we can discover of the Trumpeter is that of Moore, who states:—

"The Trumpeter is a bird much about the size of a Laugher, and very runtishly made; they are generally pearl-eyed, black-mottled, very feather-footed and legged, turn-crowned, like the Nun, and sometimes like the Finikin, but much larger, which I take to be the better sort, as being more melodious; but the best characteristic to know them, is a tuft of feathers growing at the root of the beak, and the larger this tuft is, the more they are esteemed. The reason of their name, is from their imitating the sound of a trumpet after playing; though I once inquired of a German, who brought pigeons over to sell here, the reason of their being so called, and as he told me, he believed, was that they were first brought to Holland by a drummer or trumpeter, and so were called Trumpeters from him. Credat Judæus Appela, let who will swallow this gudgeon.

"The more salacious they are, the more they will trumpet; for which reason, if you have a mind to be often entertained with their melody, you must give them good store of hemp seed; otherwise they will seldom trumpet much, except in spring, when they are naturally more salacious than usual."

The Treatise adds nothing to this account, but the copper-plate engraving is worthy of notice, as showing the character of the breed at the date of its publication, a hundred years since. The figure represents a bird of large size, with black flight and tail-feathers, the rest of the body white, excepting about thirty large black spots on the side. It has a slight tuft or rose, and a small recurved turned crown; the legs are feathered, but the feet are bare.

Girton and Dixon add nothing of importance, but Mr. Brent gives us some useful information respecting the Continental varieties of the breed. He states:—

"This variety of the domestic pigeon came, I believe, originally from Egypt and Arabia; they are distinguished from all others by the prolonged and gurgling coo, from which they derive their name of Trumpeter. In Germany they are called 'Trommel Tauben,' and in France 'Pigeon Tambour,' or 'Glougou,' names all expressive of their peculiar note, which is sustained frequently for several minutes, and somewhat resembles the distant rumbling of a drum, or the gurgling of water; the voice sounds like a combination of the word 'Coo-coo-coo-oo-coo,' rapidly repeated in a deep tone, interrupted by an occasional

inspiratory 'Ah!' Some are, however, more rapid and tremulous in their voice than others. Some naturalists consider them a very pure race, because if at all crossed they lose this distinctive coo. In addition to their coo, they have a peculiar tuft or turn of the feathers over the beak, which spreads in the form of a pink, and the finer and more evenly this spreads, the more they are admired. They are usually turn-crowned, but sometimes only point-headed; they are well-booted, or, as the Shanghae fanciers style it, 'Vulture-hocked,' and their feet are covered with very long feathers; the length of these feathers is also considered a great point; they are stout thick-set birds, what the fanciers call 'runtish' made, of good size, and excellent breeders, but should be kept clean and dry. The long feathers on their feet often incommode their walking on rough ground. Their prevailing plumage is quite white, and of the white there seems to be two varieties, the one rather smaller, with white beak and dark eyes, heavily feathered and excellent vocalists; the other rather larger, with slightly tinged beak, a pearl eye, and better turn over the beak and back of the head. This last, I fancy, is not quite so musical, though generally more esteemed; of the former variety I had some excellent birds bred from stock imported from Egypt, and though they were not quite so handsome as some, I never had but one other that could equal them in trumpeting a prolonged *finale*. The fancy plumage is the black-mottle; these, to be perfect, should have the twelve tail-feathers, and the ten flight-feathers in each wing, perfectly black, the rest of the body being white, regularly mottled with black feathers; the eyes should be of a clear pearl colour, the turn of feathers over the beak and at the back of the head well developed, and the feet well feathered. There are also blacks, blues, and reds. The Germans have some they call 'Bastard-Trommel Tauben,' which are beautifully marked, but which rarely trumpet well, if at all; the German fanciers generally think more of feather than of the other properties, which will account for the numerous varieties of toys which they cultivate. These cross-bred Trumpeters are variously marked, as reds or yellows, with clean white shoulders, also white birds with dark shoulders, like our Turbits, as black, blue, red, or yellow-shouldered, the two former sometimes having white wing-bars; some of these cross-bred birds have no turn-crown, and others have neither turns and yet trumpet very well; these have various provincial names, as 'rauchfuszige,' 'latschige,' 'strausz,' 'Russische,' or 'Altenburgische,' *i.e.* rough-footed, slippered, tufted, Russian or Altenburg pigeons."

For the following account of this breed, good specimens of which are highly esteemed, we have to express our obligations to Mr. P. Jones, formerly one of the most successful breeders and exhibitors of this variety. He states:—

"Trumpeters should certainly hold a high position among Toys, in my estimation ranking at least next to Jacobines in the number and importance of the properties required to constitute a perfect bird.

"The properties of the Trumpeter are very numerous, and may be classed thus:—Crown or Shell, Rose, Feet, Colour, Size, Shape, Carriage, and Trumpeting.

"The crown or shell should be perfectly even and well developed, standing

up boldly at the back of the head, extending widely and down the cheeks on each side.

"The rose should be large and well defined, the feathers spreading in a rose or circular form from a point at the junction of the upper mandible of the beak with the skull; it should lie nearly flat, and in good specimens is sufficiently large to partially obstruct the vision. In some exceptional cases the rose is as large as an old five-shilling piece.

"The feet should be extravagantly feathered, the feathers spreading well outwards from each toe, in first-class birds the longest of these feathers are from four to five inches in length; a good strong quill is desirable. The legs are rather vulture-hocked.

"The prevailing colours in Trumpeters are black, white, yellow, and also black mottles, the latter, when all other points are equal, having the preference, it being a difficult matter to produce a pair of well-mottled birds, most of the so-called mottles having a great preponderance of white, splashed with a few black feathers. A good pair of mottles should approach as nearly as possible to the recognized marking of the short-faced mottled Tumbler. Reds and duns are also occasionally met with.

"Much diversity of opinion prevails among fanciers as to the size of Trumpeters, but, as a rule, large birds are preferred;—a good-sized bird would weigh over a pound.

"The carriage of the Trumpeter is somewhat runtish and squat; the legs being very short, as compared with those of many other varieties.

"The trumpeting is a peculiarity possessed by this breed, and consists in a prolongation of the ordinary *coo* of the male pigeon; in some cases good birds, when nesting, will continue to trumpet without intermission for several minutes.

"Trumpeters are very tame and familiar in their habits, and free from shyness; they are fair breeders and nurses, though from the feathering of the feet liable to break their eggs in the nest; consequently they should be provided with large-sized nest-pans, such as have been recommended for Pouters and the other large breeds. It is hardly necessary to add, that the extreme amount of feather on feet necessitates the most careful cleanliness in their management."

Under the title of "The Laugher," Moore describes a variety that, like the Trumpeter, has a very peculiar voice. He says:—

"This pigeon is about the size of a middling Runt, and much of the same make, and I am informed has a very bright pearl eye, almost white; as for its feather, it is red mottled; and some tell me they have seen blues. They are said to come from the Holy Land near Jerusalem. When a cock plays to his hen he has a hoarse coo, not unlike the gurgling of a bottle of water, when poured out, and then makes a noise which very much imitates a soft laughter, and from thence this bird has its name."

Some few years since, several of these pigeons were imported into England from Arabia, and some of them passed into our possession. In form they were the

shape of the ordinary dove-house pigeon, offering no distinctive peculiarities whatever; their colours were various,—some were blue, others slaty, some were irregularly mottled, whilst others were self-coloured, as red or white. Their voice was very remarkable, being far more irregular and varied than that of the Trumpeter, and so strikingly peculiar, that no person unacquainted with the sound and not seeing the bird, could have imagined it to have emanated from a pigeon. As these birds offered no structural peculiarities that would render them valuable as show birds, they were not much sought after, and we do not know whether the breed has been maintained in its purity even since the date of its last introduction.

NUNS.

SWALLOWS.

LEIGHTON, BROTHERS

CHAPTER XIX.

NUNS, HELMETS, AND SPOTS.

THE Nun is an old and well-known variety, originally described by Moore as—

"A bird somewhat larger than a Jacobine; her plumage is very particular, and she seems entirely to take her name from it, her being as it were covered with a veil. Her body is all white; her head, tail, and six of her flight feathers ought to be entirely black, red, and yellow; and whatever feathers vary from this are said to be foul, though the best of them all will sometimes apt to breed a few foul feathers, and those that are but little so, though not so much valued, will often breed as clean-feathered birds as those that are not. A Nun ought likewise to be pearle-eyed, and to have a white hood or tuft of feathers on the hinder part of the head, which the larger it is, adds a considerable beauty to the bird."

The copyists of Moore, the compilers of the Treatise and of Girton's work, add nothing of any great value to this account. In the Treatise it is stated:—

"The Nun is a bird that attracts the eye greatly, from the contrast in her plumage, which is very particular. Namely, if her head be black, her tail and flight should be black likewise; if her head be red, then her tail and flight should be red; or if her head be yellow, her tail and flight should be also yellow; and are accordingly called either red-headed Nuns, yellow-headed Nuns, &c. Should a black-headed Nun have a white or any other coloured feather in her head, except black, she would be called foul-headed; or a white feather in her flight, she would be called foul-flighted, &c., and the same rule stands good in the red-headed or yellow-headed Nuns."

Mr. Brent, who was very partial to this pretty breed, writes as follows:—

"Of all the toy pigeons the Nun is perhaps the best known and most cultivated in England. It is much admired for its pretty appearance and the contrast of its colours; it is with me a very favourite pet, from the fact of its having been the very first I had to call my own; nevertheless, I regret to see it take precedence, as it sometimes does at our shows, of such birds as Jacobines, Turbits, or Barbs, which have many properties, while the pretty Nun is truly a toy, having but one property, namely, feather. The Nuns are about the size of common dove-house pigeons, but stouter made, and rather more elegantly shaped; the beaks are long and dove-shaped; the eyes should be pearl-coloured, though occasionally gravel, but a black eye is a great fault. They are merry, active, and good breeders; they are clean-footed, and being sharp flyers, are capable of finding a part of their food

in the fields. Their plumage is beautifully white, the extremities only being coloured; the crown of the head, face, and a small portion of the upper part of the throat is dark, and at the back of the head is a nice white turned crown, which gives the bird the appearance of wearing a dark veil and white hood, from which circumstance it derives the name of Nun. The twelve tail feathers, and a few of the tail-coverts, as also from seven to ten flight feathers in each pinion are dark of the same colour as the head, either black, blue, red, or yellow; and they are designated black-headed or yellow-headed Nuns, as the case may be: but black-headed Nuns are by far the most common; the body should be perfectly white, any dark or 'foul' feathers among the white, or white where they should be black, are fatal blemishes; the hood, too, should be perfectly white, so as to contrast well with the dark visage, and not lined with dark feathers, as is sometimes the case. The German Nuns differ from the English in having white flights, and are there called 'Bard Tauben,' or Beard pigeons."

The Rev. E. S. Dixon substantially repeats Moore's account of the birds of this breed, but adds the following paragraph :—

"'The most beautiful specimens,' says Temminck, 'are those which are black, but have the quill feathers and the head white; they are called Nonnains-Maurins.' But the most usual sort—and exceedingly pretty birds they are—are what Buffon styles 'coquille hollandais,' or Dutch shell pigeons, 'because they have, at the back of their head, reversed feathers, which form a sort of shell. They are also of short stature. They have the head black, the tip (the whole?) of the tail and the ends of the wings (quill feathers) also black, and all the rest of the body white. This black-headed variety so strongly resembles the Tern (*hirondelle de mer*) that some persons have given it that name.'"

We have quoted this in order to note the errors it contains, which if uncontradicted might lead to misconception. Temminck does not allude to the variety known as Nuns, but under the title of "Pigeon Nonnain" describes the Jacobine; and the passage which Mr. Dixon quotes is applicable to black Jacobines, and not to Nuns.

Buffon is also in error in stating that the name of Tern, or Sea-swallow, has been given to the Nun, it having been bestowed on a very distinct variety.

Nuns usually constitute a favourite class at the pigeon shows, but from the tendency of the black and white feathers to intermix at the turn-crown, they are generally subject to a certain amount of manipulation before exhibition, which is alluded to in the following communication on this breed, which we have been favoured with by the Rev. A. G. Brooke, one of the most ardent admirers and successful breeders of this variety :—

"'An uncommonly well-trimmed class of Nuns,' used generally to greet my ears at various shows, and, to be candid, as far as mine were concerned, I could but plead guilty to the fact that trimmed they were. How to breed them for exhibition free from foul feathers was a puzzle to me. Having, however, a great partiality for Nuns, about four years ago, as a last resort, from observation rather than from

information received, in order to keep the breed as pure as possible, I disposed of all my other varieties of pigeons, and left a pair of black-headed Nuns the sole occupants of my pigeon-house. Remarkably content and happy they were, and at first bred me mostly foul-feathered birds, but I have gone on breeding in-and-in, and am able to report decided progress, the Nuns I have bred this year being better in their hoods, and far freer from foul feathers than any I have had before; in fact, my nunnery can now boast of Nuns 'Superior.' I have bred almost all my prize birds from a cock with seven black flights in each wing, and a very good hen, but was unable to exhibit her, as she had seven black flights in one wing, and only five in the other. She has bred me twenty-three birds in two years and a half, and only one pair have been, like herself, short in the number of the dark flight feathers. My prize Nuns at Birmingham, in 1865, were bred by her during that year, and they had six flights in each wing, which I believe to be the correct number. The Nuns I won with at Birmingham in 1866, were likewise her progeny; but I have the majority of my birds with more than six dark flights; still, in my opinion, six denote perfection. These flights in the wing, together with the tail, should be jet black; the hood white and full; the eye, though dark at first, becomes pearl with age.

"Cleanliness is very essential to them; mine have a bath twice a week, constructed of a good-sized earthen pan, placed inside a larger tin one, which receives the greater part of the water splashed over, and thereby the floor of the pigeon-house is kept comparatively dry. After the young ones are hatched, I have their nest-pans changed frequently; thus they are kept sweet and clean and free from parasites. The water in their fountains is changed every morning, and the fountains well rinsed out. Their food consists all the year round of white peas and small round Indian corn mixed together, of which they always have a plentiful supply in a pan on the floor; by this means the young ones are never at a loss for food, and arrive sooner at maturity. In one of my prize pens this year, the hen was only three months old. They are particularly fond of rock salt, a lump of which is likewise kept in a pan on the floor. I occasionally give them a grass sod, which they much enjoy, especially when the grass is in seed. My Nuns being always confined to the house, I have the floor covered with dry earth, mixed with coarse gritty sand; this is frequently swept from the floor, and fresh dry earth substituted. I attribute the excellent state of health which my birds have always enjoyed mainly to cleanliness.

"I have often tried to obtain either really good yellow-headed or red-headed Nuns, but in vain; the reds I am afraid are an extinct race. So much more success than I ever anticipated has attended my keeping my Nuns by themselves, and allowing them to mate as they choose, that I can only advise other amateurs to adopt the same method, where it is practicable."

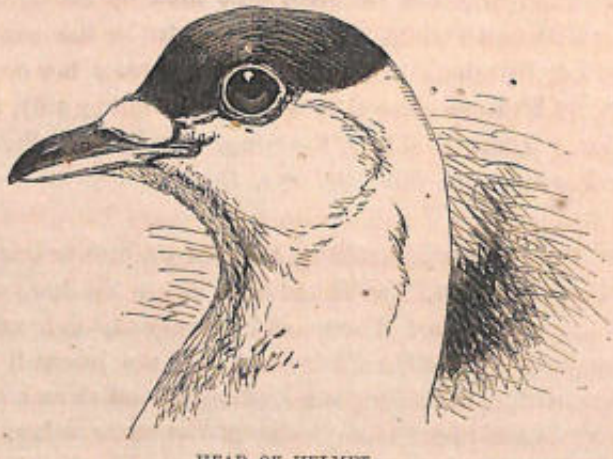
We believe that very good red and yellow-headed Nuns are still to be obtained on the Continent, but it is a long time since any good birds of these colours have been exhibited in England.

Closely allied to the Nun, but differing from it in the absence of the shell or turn-crown, is the breed known under the title of Helmets.

Helmets were, as far as we are aware, first described by Moore, who states :—

"This pigeon is much about the size of a Nun, or somewhat bigger. The head, tail, and flight-feathers of the wings are always of one colour, as black, red, yellow; and I have been informed there are some blue, and all the rest of the body white, so that the chief difference between them and the Nun is, that they have no hood on the hinder part of the head, and are generally gravel-eyed.

"They are called Helmets from their heads being covered with a plumage



HEAD OF HELMET.

which is distinct in colour from the body, and appears somewhat like a helmet to cover the head."

Neither the compiler of the Treatise nor the author of the "Dovecote" furnish any further information on the breed. Mr. Brent, however, writing in the *Poultry Chronicle*, stated :—

"This toy, like the preceding, is evidently descended from a German race, namely, the 'Kappen,' or 'Platten-Tummler,' or 'Burzel taube;' but, like the foregoing, their Tumbler properties have been disregarded, and the birds are rarely much thought of, though their pretty appearance ought to bring them some admirers. The upper mandible is dark, the lower light; the top of the head is coloured, either red or yellow, in a line from the beak through the eye, which gives the appearance of the bird's wearing a cap or helmet, whence the name; the tail also coloured the same as the head, and in those that have feathers on the feet they are likewise coloured: the whole of the remainder of the plumage is spotless white.

"The old-fashioned Helmet pigeon, with dark flights, as described by Mr. Moore, 1735, I have never seen."

As show birds, Helmets must be very correctly marked. Their only properties are those of colour and accuracy of marking: wanting these, they are no better than mere dove-house pigeons.

The Spot is a very old though now rather scarce variety. Willughby mentions it in the following terms:—"Spots, because they have each in their forehead, above their bill, a spot. Their tail is of the same colour with the spot, the rest of the body being white."

Moore writes:—

"This pigeon is about the size of a small Runt, and was first transmitted to us from Holland, but from whence the original of this breed came I cannot as yet learn; they have a spot upon their heads, just above their beak, and from thence take their name; the feathers of the tail are of the same colour with the spot, and the rest of their body is all white. The spot and tail in some of these pigeons is black, in others red, in others yellow; and I have been informed that there are some blue; they look pretty when they spread their tail and fly, and always breed their young ones of the same colour."

Mr. Brent writes:—

"They were frequently to be met with a few years back, but now seem to be getting scarce. They have a coloured spot on the head, over the beak, and the tail is also of the same colour, either black, blue, red, or yellow; the whole of the rest of the plumage is white. They are clean-footed, and occasionally turned-crowned; the upper mandible should be dark and the lower light; they are the size of the common dove-house pigeons. They are active and field well, and are reported always to breed their young ones of the same colour. Their German name is 'Bless' (Spot), or 'Masken-Tauben' (masked pigeons)."

Both Spots and Helmets, though very pretty birds, have so few properties that they are not as highly esteemed as the other more artificial varieties, and but few fanciers breed them to any great extent.

In Germany there is a variety which is unknown in England. It may be described as a Spot with the colours reversed, viz., the body is dark, the spot on the forehead white. Mr. Brent has described this variety as follows:—

"This variety is very scarce in England, but common in Germany, where they are known as 'Die Weiszblessige Taube,' White Spotted Pigeon, or 'Weisz-masken Taube,' White Masked Pigeon. They are rather smaller and lighter made than the common dove-house pigeons, also quicker and more active, and take willingly to the fields to cater for themselves; they are smooth-headed, and generally slightly feathered on the feet; the upper mandible is white, the lower dark; on the head, directly over the beak, is an oval white spot; the tail also is white, the rest of the body being coloured, so that they are exactly opposite to the Spot pigeons last described; some few, however, have white wing bars.

"Herr Gottlob Neumeister enumerates five sub-varieties as follows:—

"1. The Black—white spot, with and without white wing bars, and occasionally with white spangled shoulders.

"2. The Blue—white spot, with the same markings as above.

"3. The Red—white spot, of a fine copper-brown red, without wing bars.

"4. The Yellow—white spot, their colour brown yellow; they also have no wing bars.

"5. The Copper-shouldered—white spots, their ground colour is dark slaty-black, the neck changes to shining olive-green, the shoulders of the wings are deep copper-red, and the under parts of the body light ash grey."

CHAPTER XX.

THE ARCHANGEL.

THIS pigeon was not known to the older fanciers: the author of "The Dovecot and the Aviary" states, that at the date of the publication of his work in 1851, it had not been mentioned in any treatise previously published. The history of its introduction and the description of its characteristic properties are more correctly given in the following valuable account, by Mr. S. Betty, the honorary secretary of the National Columbarian Society, than by any other writer.

Mr Betty states:—

"The Archangel is one of the few artificial or fancy breeds which, without any change of form or structure from that of the wild species, commends itself to the critical fancier by the extreme beauty and the novelty of its colouring, and taxes his skill to the utmost to preserve its peculiar characteristics.

"The introduction of the Archangel into England has been of comparatively recent date, consequently no account of it appears in any of the older treatises. Dixon, in his 'Dovecot and Aviary,' devotes a chapter to it, but his description is very inaccurate, and he confesses to being ignorant of the date of its introduction. I have, therefore, much pleasure in publishing the following statement, which I received from the well-known fancier Mr. Frank Redmond, formerly of the Swiss Cottage, St. John's-wood. Mr. Redmond informs me that he was in Ghent, in 1839, and whilst there was selecting some pigeons for the late Sir John Seabright, when he saw this breed for the first time, and was informed that it had been recently introduced from Russia. With some difficulty he procured a pair, and this breed, from its novelty and beauty of plumage, remained high in favour with Sir John, at whose death the Archangels became distributed, the greater number passing into the possession of the late Earl of Derby; so that Dixon says he first saw the bird at Knowsley. I am not aware that, even at the present time, any fancier possesses a large stud of Archangels, and I am inclined to think the bird has deteriorated in our hands through in-and-in breeding.

"The chief points or properties in the Archangel are: colour, tuft, and carriage.

"Colour.—The colouring is both rich and unique. The head and neck-hackle should, after the first moult, be of a deep and brilliant copper-red, changing into dark bronze; the wings and back of a deep black, shining with a brilliant burnished metallic lustre, and reflecting the richest iridescent hues of blue and

green. There is no other variety of domestic pigeon which, in metallic brilliancy of plumage, even approaches that of the Archangel, whose colours recall to mind the glossy brightness of the Indian pheasants rather than the more sober tints generally found on the ordinary Columbine birds. The flight feathers are of a dusky black. The tail, I am informed by their original importer, was black throughout, but we find it now of a dull blue at the base, with a black bar at its termination. A few years since yellow-necked birds were much esteemed, and no doubt that colour would give a value to this variety in the fancy; but I have found that with the yellow-neck comes more conspicuously the blue-tail; and these lighter birds are apt to be deficient in the brilliant metallic lustre that is the great and distinguishing beauty of the breed. The eye should be of a bright, golden, orange-red. Some good birds are pearl-eyed, and although that colour does not accord so well with the general brilliancy of colouring that ought to characterize the birds of this breed, I am not prepared to reckon it as a defect. The feet, which are small, should be of a bright deep red.

"Tuft.—The tuft is formed at the junction of the feathers of the skull with those of the neck; the feathers of which it is composed should not be sufficiently long to overlap, and they should end in a finely-drawn point at the back of the head. Any approach to a broad shell-tuft, resembling that of the Trumpeter, is to be regarded as a great defect; and as such a character is apt to be inherited, an untufted bird would be far preferable for stock purposes to one with a shell-crown.

"Carriage.—The Archangel should have a smart carriage, standing well upon its thighs, the head well up, the shoulders close set, the girth narrow.

"For public judging, the numeral value of points may be thus distributed: colour 8, tuft 4, shape and carriage 3—total, 15.

"Though comparatively few good birds are now to be seen, nevertheless Archangels are reasserting their place in public estimation. They are much sought after, and very liberal prizes are now offered for them at the Birmingham and other shows. Archangels are prolific, and make good nurses; and although among the produce there may be some that are valueless, the greater number bred will be generally gratifying to their owners.

"A large flight of these pigeons, such as I recollect seeing at the Swiss Cottage, was a very pleasing sight. They have much in common with the Rock dove, particularly in size, shape of body and beak, and quick darting flight; as they walked daintily in the court-yard with the sun beaming on their lustrous feathers, they gave one the idea of their being the most gorgeous of their race. No court milliner could have clad them in more resplendent colours; no coiffeur could have been more exact to a hair in arranging their toupée; no bottier could have encased their legs and feet in brighter scarlet morocco; and all their attire was so brilliantly harmonized that they seemed better adapted to suit the gorgeous beauty of an oriental court than the pale colouring of our colder clime."

It is difficult to account for the English name of Archangel. A correspondent informs us that he sent expressly to Archangel for these birds, but they were

unknown in that locality. Mr. Brent has sent us the following information on the subject of their original locality, and the varieties of the breed as recognized in Germany :—

"It was in 1842 or 1843 that I first saw this variety of pigeon at Coblentz on the Rhine. I brought a pair home with me, but the hen died. Mr. Furer, in his excellent description of this breed in the 'Pigeon and Poultry Newspaper' of April, 1858, published in Berlin, says this pigeon is a native of Illyria, and that it is common in Upper Bavaria and the Tyrol, where they are kept as dovehouse pigeons, and gain their own living in the fields; and that it is only within the last forty or fifty years that it has been known in Germany, in which country it is called the Illyrian or Bullfinch pigeon. Mr. F. mentions several varieties, besides the red and black, and yellow and blue; as, for instance, 'those having white flights, either with or without a white spot on the forehead; but those with a clean white head and flights are most highly prized.' Then there is a pigeon of exactly the same form, carriage, and marking as the common Archangel—that is, the white Archangel, or, as it is called in Germany, the coloured breast pigeon; but it is very different in colour; the head, neck, and breast are of one colour, either yellow, red, black, or blue, and very glossy; the rest of the plumage being a beautiful white. The English name of Archangel is a puzzle to me, for they certainly did not come originally from the north."

CHAPTER XXI.

GERMAN TOYS.

UNDER the name of German Toys we may include a very large number of different varieties, characterized almost entirely by mere variations in the colour and disposition of the feathers. The majority of these birds closely resemble the wild blue dove in form and in arrangement of plumage, though some are characterized by feathered feet, others by turned crowns and tufts over the upper mandible, and some combine all these peculiarities.

In colour of plumage and markings they are infinite, and it is hopeless to attempt to describe all the variations that occur. Many of them are accidental in their occurrence, and a pair produced by crossing other breeds are designated by a new and fanciful name, and attract notice for a time; but as they often fail to produce young resembling the parents, they disappear, to give place to new varieties. Those breeds, however, that have been longest established, and in which the process of the artificial selection of brood stock has been carried on for a longer series of generations, breed fairly true to colour and markings, and thus such varieties as Swallows, Runts, Brunswicks, &c., have become firmly established and are constantly to be seen at our shows.

The satisfactory arrangement of these birds is not an easy or even a possible task, as the varieties merge so readily into one another. By far the best descriptions of them that have ever appeared in England were written by the late Mr. B. P. Brent in the "Field" newspaper and in the defunct "Poultry Chronicle," which was published in 1854–5, and to which we are indebted for much of our information on the subject.

We may first commence with a description of the spangled varieties. It is well known to all pigeon fanciers that the black marks on the wing coverts, which by their junction produce the upper of the two black bars, so characteristic of the Rock dove, are apt to extend irregularly over the wing, and to produce that marking known as chequered. When these marks are regularly dispersed they form a series of spangles, the colours of which may be so varied as to give rise to a very pleasing pattern.

This spangling may be combined with any other colours in the plumage, and an indefinite number of varieties may result from the union. Mr. Brent says:—

"The Suabian Spangled pigeons, or, as they are called in Germany, *Schwaben Tauben*, are, I consider, the prettiest variety of Toys. They are doubtless the

origin of all those pretty spangled Toys occasionally seen in England and known by various names, as Porcelains, Hyacinths, Ermines, &c.

"The Suabian pigeons are about the size of Nuns in shape and make, and much resemble the Dovehouse pigeon in their manners, have generally a turned crown, gravel eye, and clean feet. They are rather shy, sharp flyers, and easily learn to find their food in the fields, as indeed is the case with nearly all the varieties of Toys, unless incapacitated for walking on the ploughed land by the long feathers on the feet; and consequently they are well adapted for country amateurs, while the fancy pigeons generally require to be house-fed, and therefore belong more particularly to the town fanciers.

"The chief, if not the only property of the Suabian pigeon, consists in its beautiful spangled plumage, the ground colour of which resembles that of a dark chequered Dovecot pigeon; the feathers on the head and neck are tipped with cream-colour, or a soft whitish stone-colour; the tail is a dark slaty-colour, barred with black near the extremity; the flight feathers are of the same hue, but they have a small whitish spot at the extremity of each, like the white spots on the pinion of a Goldfinch; the secondary wing feathers, as also the primary covert feathers of the same, have a large whitish spot on their outer web, which causes the wings to have two white bars, a feature much prized on the Continent by amateurs, when introduced into the colouring of any of the darker Toys, and one of very rare occurrence in any English pigeons. The whole of the lesser covert feathers of the wing shoulders, and the black or scapular feathers, have the white spots on both of the webs, which, when large, cause the feathers to appear almost all whitish with grey down, a black shaft, and a small triangular bluish or slaty spot at the extremity, resembling ermine marks in heraldry. Thus at a little distance the general plumage of the bird seems of a soft creamy white, slightly speckled with dark, but on closer inspection it is very beautifully and regularly marked—the whitish over-colour on the lower part of the neck across the crop gives place to a crescent-shaped band of an orange-brown shade: the rump and hinder parts are slaty-grey. In the young birds these white markings are of brownish or brindled colour, known to the fancy as 'kite' or 'hawked,' but this colour only remains so long as they maintain their nest-feathers, and they lose it with them and attain the creamy white shade at their first moult.

"If these pigeons are bred to a darker shade, either by crossing with a black pigeon or selecting the darkest for two or more generations, they present a very pretty appearance, becoming almost black, with two white bars across the wings, and the shoulders spangled (not 'mottled') with white pearl-like spots.

"The Germans have also what they call a Red Suab, or *Roth Schwaben*, the ground-colour of which is a brown-red; but the whitish spangling is not so clear on their shoulders, having a very faint pinkish tint, and being slightly marbled with red. The few I have seen of this variety had white upper mandibles, and also the crown of the head white, and a black iris.

"The French have several sub-varieties, more or less spangled, some on a black

ground, others on a clear blue, which are very pretty; some of them are spangled with buff, fawn, or red-brown, instead of the creamy white; some of the French birds are much larger than the German, and seem as if they had been crossed with other large birds."

Under the title of Hyacinths, Victorias, Porcelains, &c., large spangled varieties are often shown; some of these have evidently been crossed with the short-legged Continental Pouter, as they inflate their crops to some slight extent when flying.

Another group of German Toys well known at our shows is that of which the Priest, Brunswick, and Letz Pigeons may be taken as the representatives. The Priests are of various colours, with broad turn-crowns, white heads, white wing bars, and sometimes a white bar across the tail. Neumeister, a well-known German writer on pigeons, enumerates the following varieties:—

"1st. The Black Priest pigeon; both with and without the white wing bars, and occasionally with the spangled shoulders of the Suabian pigeon cross. 2nd. The Blue Priest pigeon, with either black or white wing bars; also occasionally spangled like the foregoing. 3rd. The Brown-red Priest pigeon; these rarely have the white wing bars, but when they do, the flight and tail are usually strawberry-coloured. The chief point is to have them of an uniform dark brown-red. 4th. The Yellow Priest pigeon: has markings similar to the red, and is equally rare with white wing bars. 5th. The Wild Blue Priest pigeon; their colour is a light or mealy blue, with the white head, like all the others, but without any other mark whatever, not even the black wing bars so common to blue pigeons These are, however, not very plentiful."

Under the absurd title of Blue Brunswicks a variety is often shown, in which the flight feathers, wing bars, and head are white, the rest of the plumage being blue.

Under the name of Letz pigeons a similar variety was shown a few years since. The body was entirely white; the head was ornamented with a good sized turned crown, and the feet were well feathered. The shoulder only was coloured, the wing bars being white.

Ice pigeons, as they are called, have recently been much shown; they may be described as being generally silver or pale-blue in colour, of the ordinary dove-house form, with white wing bars, and with or without chequered wings, having the feet more or less feathered.

The Swallow is a variety that sometimes has a class awarded it at our pigeon shows. Mr. Brent was a great admirer of this very pretty breed, and we willingly take his description as the best that has been published:—

"This beautiful variety of Toy pigeon is called by the French *Hirondelle de mer*, and by the Germans *Die See Schwalben Taube*, or for shortness simply *Schwalben Tauben*, which literally means Swallow pigeon; but as they derive their name from their marking, which resembles that of a small kind of seagull, called a Tern, though known to the French and Germans as a Sea Swallow, it follows that the name Swallow pigeons, as commonly applied to them in this country, is

BLUE BRUNSWICKS.

BLACK PRIESTS.

BRIGHTON, BROTHERS.

inappropriate, and that the proper English name would be Tern or Gull pigeon. The Germans also designate them *Feen Tauben* (Fairy pigeons) and *Nurnberger*, or *Farben Flugeliche*.

"Of all the Toy pigeons (I mean those I have classed as such, in distinction from the fancy pigeons, which have many properties) these are, with the exception of the Suabian Spangled pigeons, the most worthy of the fancier's notice, their decided and beautiful marking, and the contrast of their colour, placing them in character above the general run of Toys. They are good breeders, about the size of the Dovehouse pigeon, and are equally light and active in their movements, though the feather-footed varieties, which are most esteemed on the Continent, are not well adapted to provide their own living, owing to their short and heavily feathered feet. There are of this sort of pigeon both turned-crowned and smooth-headed, as well as clean-footed and shod; their necks are short; their heads, breasts, and backs broad; their ground plumage is white; their marking consists of the scalp, wings, and the slippers in those that are shod being coloured, which in the blue variety resembles the partition of colour in the Tern, the bird before mentioned, from which they derive their name.

"Their points of marking are as follows:—First the head; the upper mandible should be dark and the lower light; the scalp or top of the head in a line from the corners of the mouth across the eye, evenly marked, passing round to the back of the head dark, but in those that are turned-crowned the hood must be perfectly white. Secondly, the wings of these should be wholly coloured without any white feathers, but the epaulets or scapular feathers, which lie on the back, at the junction of the wings to the body, should be quite white, and as they overlay a part of the wing when closed, it necessarily appears narrow, which is considered a particular point. Thirdly, the feet, if shod, should be thickly covered with coloured feathers from the heel or hock-joint to the toes; but the boots, or as Cochin fanciers would style it, the vulture hock, must be white.

"Herr Gottlob Neumeister, of Weimar, enumerates five sub-varieties, as follows:—

"1. The Black Tern pigeon, in which the markings are of a beautiful velvety black. 2. The Blue Tern pigeon, the markings of which are clear blue, with regular narrow black bars on the wings, the flight feathers being dark slate-coloured. 3. The Red Tern pigeon, the colourings of a fine dark brown-red. 4. The Yellow Tern pigeon: the markings are either bright yellow or buff. 5. The Light Blue Tern pigeon: they are light blue on the coloured parts and have no wing bars; their pinions are slate-coloured. All the above varieties are frequently to be met with with white wing bars, but they are not generally so accurately marked, still more rarely have such fine shell-turned hoods. In addition to the above, I have seen some with dove-coloured markings; also of a kind of lavender colour, and mealies. This sort of pigeon is becoming somewhat plentiful in this country, though they are of but recent introduction, and they are now frequently exhibited at our shows.

"According to M. Boitard and M. Corbie, the hooded varieties are considered distinct from the smooth-headed in France, and known by a different name, or at least they are the high fancy of the breed, and are bred with much care and of a small size."

Magpies are another variety of German Toys that are well known in England. In appearance they offer very striking contrasts of colour; the wings, lower part of the breast, and thighs being perfectly white, whilst the remainder of the plumage is coloured. The great beauty of birds of this breed depends on the purity and richness of their colours and the accuracy of their markings; the line of separation between the coloured and white portions of the plumage must be sharply and accurately marked. If the white and coloured feathers intermix, such birds are valueless as show birds, and not to be depended on for stock.

Magpies are of various colours, as black, red, yellow, and blue.

Among the other German Toys less frequently seen in this country are the Starlings, Shields, Swiss, and Mooned pigeons.

The Starlings are dark-coloured birds, white-barred, with a speckled, crescent-shaped band across the crop.

The Shields are so termed from bearing on their wings a coloured mark like a shield, on a white ground.

The Swiss and Mooned pigeons have a crescent-shaped coloured mark on the breast.

As we have before stated, the number of these Toys is almost infinite; and by mating together different varieties, new breeds are constantly produced.

Amongst the German birds we should not omit to notice the very pretty feather-footed Flying Tumblers so common on the Continent. They are not what English fanciers would call short-faced; but they are exceedingly pretty lively little birds. They are of all colours; but usually more or less speckled or mottled.

Among the most remarkable birds that we have seen on the Continent are those known as "Long-winged pigeons." In colour the specimens we have seen have been bronzed, somewhat like the colour of an Archangel pigeon; but their striking peculiarity is the extreme length of the flight-feathers of the wings, which extend beyond those of the tail. Of the power of flight possessed by these birds we know nothing, our acquaintance with them being limited to a few pairs confined in aviaries. They would form a very striking and novel addition to the varieties known in this country.

MAGPIES.

ICE PIGEONS.

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MAGPIES.

ICE PIGEONS.

CHAPTER XXII.

THE FINNIKIN, SMITER, AND TURNER.

THERE are several breeds described by Moore and the older writers which are no longer recognized as distinct varieties; some of these have been already alluded to in the course of this work, such as the Uploper, the Mahomet, and those that appear to be closely related to existing breeds. Others, such as the Finnikin, the Smiter, and the Turner, remain to be mentioned. We will quote the older authors on the subject, as it is desirable to put on record the existence of these lost breeds. Of the Finnikin, Moore states:—

"This pigeon is in make and shape very like a common Runt, and much about the same size. The crown of its head is turned much after the manner of a snake's head; it is gravel-eyed and has a tuft of feathers on the hinder part of the crown, which runs down its back not unlike a horse's main. It is clean-footed and legged and always black, and blue pied. When it is salacious, it rises over its hen and turns round three or four times, flapping its wings, then reverses and turns as many the other way. Were a gentleman in the country to stock a dove-house with this sort of pigeons, their whimsical gestures might engage the country people to imagine he kept an enchanted castle. Some people disapprove of this sort of pigeons as apt to vitiate their other strains by making a hen squat by these antic gestures; but in fact they are no more dangerous that way than any other breed when salacious."

Respecting the Turner, Moore writes:—

"This pigeon is in many respects like the Finnikin, except that when it is salacious and plays to the female it turns only one way, whereas the other turns both; it has no tuft on the hinder part of the head, neither is it snake-headed."

In the work ascribed to Girton, the variety termed the Smiter is described. The writer says:—

"This pigeon, in shape, make, and diversity of plumage, nearly resembles the Tumbler, the size excepted, it being a much larger bird. The Smiter is supposed to be the same species that the Dutch call the Drager; when it flies it has a peculiar tremulous motion with its wings, and commonly rises in a circular manner; the male, for the generality, flying much higher than the female, and though it does not tumble it has a particular manner of falling and flabbing its wings, with which it makes so loud a noise as to be heard at a great distance, which is frequently the cause of its shattering or breaking its quill-feathers."

These birds were also alluded to by Willughby, in the passage quoted at page 55.

Writing of these varieties, Mr. Brent says:—

"I have seen some pigeons of this sort in Germany, where they are called 'Ring-Schlagen Tauben,' *i. e.*, Ring-beating pigeons; and, apart from their strange movements and actions, I could see nothing else in them different to other common kinds. They are considered very productive, but I am not aware that any are now to be found in England.

"The Smiter is described by M. Boitard and M. Corbie, French writers, as follows:—'They are a little stouter than the Tumblers, have a small cere round the eyes, which are black; the feet are feathered. Whatever the size of the place in which they are, they rise to the top, and come down again in circles, turning first one way and then the other, and they turn round in flying even in their dovecots; but they are quarrelsome and jealous. In plumage (they say) they are grey, with black marks on the wings, red, or pearly white, with a pure white horse-shoe mark on the back. They frequently break some of their wing feathers by the violence of their movements, which seem to resemble convulsions; and they are generally very productive.'"

CHAPTER XXIII.

THE LACE, OR SILKY, AND FRILLBACK PIGEONS.

THESE two breeds are characterized more strongly by the remarkable character of the plumage than by any singularities of form or colour. Such varieties have been known for a long period of time; for Aldrovandus figures a *Columba crispis pennis*, but gives no description of the bird. Moore, in his "Columbarium," omits to notice either breed. Both, however, are described by the compiler of the Treatise of 1765, who also supplies an engraving of the Lace variety, of which he writes:—

"This bird is, I believe, originally bred in Holland, where, I am informed, there are large numbers of them; though not one that I know of to be seen in England at present. It is a size rather less than a common Runt, and like it in shape and make; though I once saw a Shaker of this kind. Their colour is white, and they are valued on account of their scarcity and the peculiarity of their feathers, the fibres or webs of which appear disunited from each other throughout the whole plumage, and not in the least connected, as is common with all other pigeons where they form a smooth close feather."

The writer then refers to the cut, which represents a pigeon of the ordinary form, with feathers with disunited webs, and a well-turned crown at the back of the head.

Mr. Brent states:—

"This curious variety of domestic pigeon is very scarce; their chief peculiarity consists in the webs of their feathers being disunited, like the plumage of the Silky fowls, and from which cause their powers of flight are much curtailed. The few that I have seen have always been white, and had much the appearance of half-bred Fantails; and I have read that in both France and Holland Fantails are to be met with, with this beautiful lacy or silky plumage."

The Lace pigeon, as described by the author of the Treatise, appears to be almost, if not quite, unknown in England at the present time. There have, however, been several examples of very good laced Fantails imported from the Continent, and exhibited at various shows during the last few years. The majority of them were white, but some have had a portion of the plumage black in colour.

"The Frillback," writes the compiler of the Treatise, "is something less in size than a Dragoon, and in shape like the common Runt; their colour generally (if not always) white; and what is chiefly remarkable in them is the turn of their

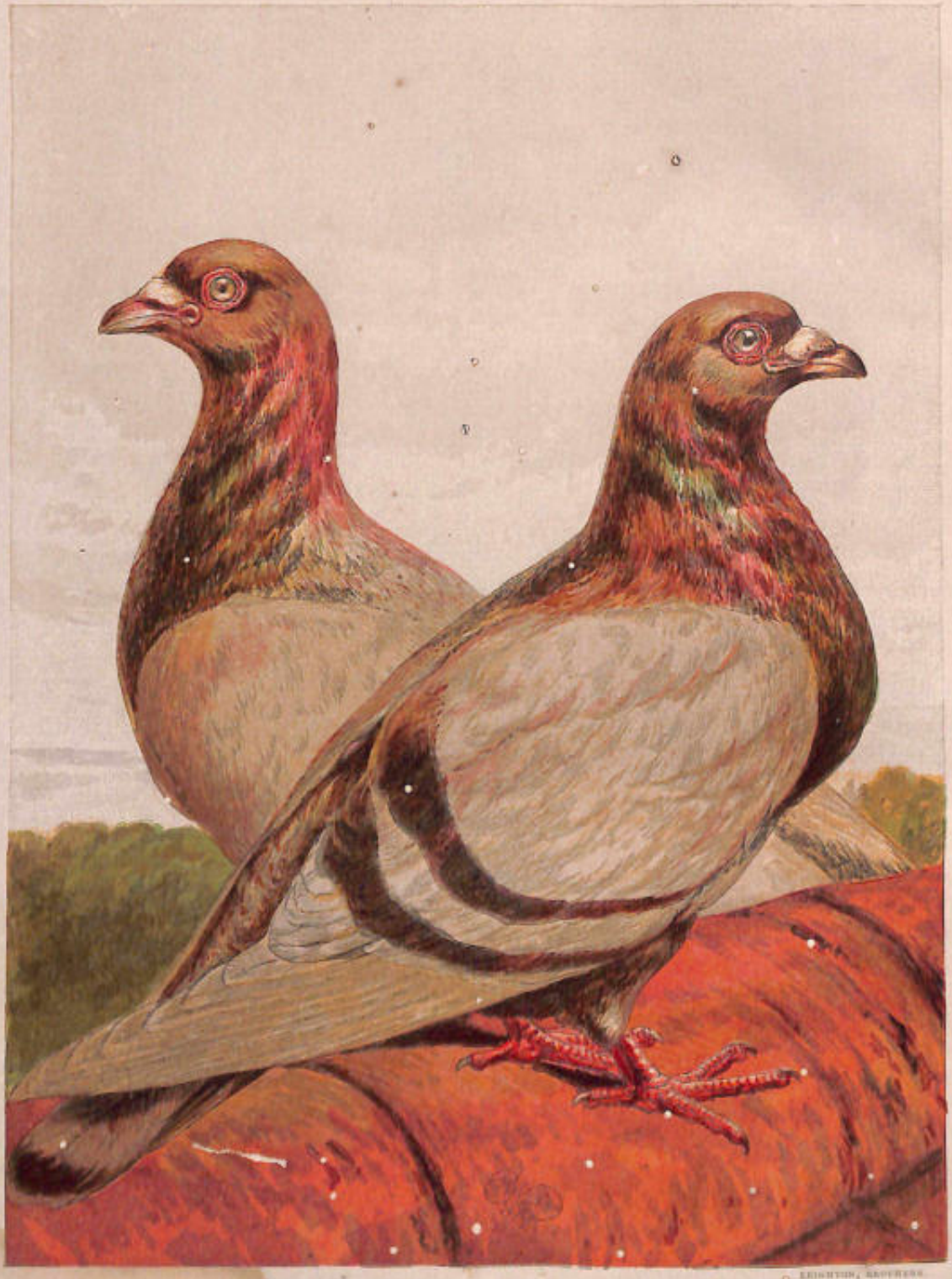
feathers, which appear as if every one distinctly had been raised at the extremity with a small round-pointed instrument, in such a manner as to form a small cavity in each of them."

Mr. Brent was well acquainted with this breed on the Continent, for he states:—

"This curious variety of fancy pigeon is very rare in England, though they are more frequently to be met with in Saxony. They are about the size and make of a dovehouse pigeon, with a turned crown; the plumage is white, and the eyes should be gravelly-red; their chief peculiarity consists in the feathers, each of which is raised at the extremity, so as to form a small conical hollow, which gives the plumage the appearance of having been goffered or raised by a fine pair of curling-tongs. They are light and quick in their flight, but are easily tamed."

There is no doubt that these two singular variations of plumage might, with care in the breeding and careful selection, be engrafted on any variety. We have seen some very good Dragons which were fairly frilled on the back; and at the Continental shows, blue and other coloured Frillbacks not unfrequently make their appearance.

Beyond the singularity in the feathers, Frillbacks offer no peculiarity, nor do they require any special management distinct from that of other breeds.



RUNTS.

CHAPTER XXIV.

THE RUNT.

THE title of Runts is given by the English fanciers to any very large variety of pigeon. It has been in use since the time of Willughby, who states :—

"The greater tame pigeon, called in Italian *Tronfo* and *Asturnellato;* in English, a Runt; a name (as I suppose) corrupted from the Italian *Tronfo:* though, to say the truth, what this Italian word *Tronfo* signifies, and consequently why this kind of pigeon is so called, I am altogether ignorant. Some call them *Columbæ Russicæ*, Russia Pigeons; whether because they are brought to us out of Russia, or from some agreement of the names Runt and Russia, I know not. These seem to be the *Campania* pigeons of Pliny. They vary much in colour, as most other domestic birds; wherefore it is to no purpose to describe them by their colours.

"Perchance these may be the same with those which, Aldrovandus tells us, are called by his countrymen *Colombe sotto banche*, that is, pigeons under forms or benches, from their place; of various colours, and bigger than the common wild pigeons inhabiting dovecotes."

Moore, in his "Columbarium," describes several varieties of Runts, as the Leghorn, Spanish, Friesland, and Roman. His directions are not very definite; nevertheless, as the author of the oldest English work on the subject, his remarks are worth reproducing. He writes as follows :—

"The Leghorn Runt is a stately large pigeon, seven inches or better in the legs, close feathered and fast fleshed, extremely broad-chested and very short in the back; he carries his tail when he walks somewhat turned up like a duck, but when he plays, he tucks it down. His neck is longer than any other pigeon, which he carries bending like a goose or a swan. He is goose-headed, and his eye lies hollow in his head, with a thin skin round it, much like the Dutch Tumbler, but broader; his beak is very short for so large a bird, with a small wattle on it, and the upper chap a little bending over the under.

"They are a very tender bird, and great care ought to be taken of their young ones. I was offered seventeen shillings for a single cock, and Sir Dolbey Thomas would have given me a guinea and a half for the same bird. There are few true original ones of this breed in England; and, if matched to a Spanish Runt, they will breed a very large pigeon, closer in flesh and feather than the Spanish Runt, and will breed much faster. I have killed of their young ones, which when on the

spit were full as large as middling spring fowls: where note that these, and all other Runts, increase in their bulk till they are three or four years old.

"As to their feather, they are various, but the best that I have seen were either black or red mottled.

"There is a vast difference in these birds; and I have seen very bad ones that have been brought from Leghorn, little better than a common Runt. However, this is the genuine true description of the Leghorn Runt, which is more valued than any other sort of Runts.

"This pigeon was originally bred either at Pisæ in the Duke of Tuscany's dominions, or at Pisæ in Peloponnesus, and from thence brought to Leghorn, and so transmitted to us; but I rather judge the latter, because it answers the description of the pigeon which Willughby, in his 'Ornithology,' calls *Columba Turcica seu Persica*, the Turkish or Persian pigeon.

"The Spanish Runt, as may readily be perceived by its name, comes originally from Spain, and is the longest bodied of all pigeons; I have seen them three-and-twenty inches long, from the apex of the beak to the extremity of the tail. They are thick and short-legged, loose-feathered and loose-fleshed, and don't walk erect as the Leghorn Runt does.

"There are of all feathers in this kind of bird, but, being short-legged, are apt to sit too heavy upon their eggs, and by that means break them, to prevent which inconvenience the best way is to put chalk eggs under them, and set their eggs under a pair of smaller Runts, or Powting Horsemen, which are more kindly breeders, not forgetting to give your Spanish Runts a pair of young ones at the time when they ought to hatch, that they may feed of their soft meat, which they always prepare against that time.

"I have seen a pigeon very much resembling the Spanish Runt, with longer legs, but I rather take these Runts to come from Mexico, Peru, or some other parts of the Spanish West Indies.

"The Friesland Runt comes from Friesland, and is one of the larger sort of middle-sized Runts; its feathers stand all reverted, and I cannot see for what it can be admired except for its ugliness.

"There are other sorts of Runts, as the Roman Runt, which is so big and heavy it can hardly fly; and the Smyrna Runt, which is middle-sized and feather-footed. I have seen the feathers growing on the outside of each foot, that they look as if they carried wings on their feet. I have measured some of these feathers which have been four inches and a half long. These birds are very apt to drag their eggs and young ones out of the nest, if not kept clean and dry. To these we may add the common Runt, which are kept purely for the dish, and generally in locker-holes or inn-yards, or other places, and are well known to everybody; they are good feeders, and therefore good nurses, for any of the more curious sorts of pigeons."

The compilers of the "Treatise" of 1765, and of Girton, repeat the statements of Moore without any addition of importance.

The distinction between these different kinds of Runts is not accurately marked at the present time, whatever might have been the case when Moore wrote. At the shows held a few years since at the Crystal Palace, prizes were offered for both Spanish and Leghorn Runts; but birds similar in character were shown in both classes, consequently at no other poultry show has it been attempted to maintain the distinction.

Large varieties of pigeons have always been bred along the shores of the Mediterranean, and fair specimens are not unfrequently brought to England by the sailors. The size of these birds has long been a subject of notoriety. The Rev. E. S. Dixon, in his "Dovecote and Aviary," quotes a letter from Mr. Edward Browne to Mr. Craven, written in 1664, in which the writer states:—

"Wee came home by the island of Nisida, some two miles in compasse, belonging to one gentleman, who in it keeps all creatures tame by force, haueing no way to get from him, in sight of Caprea, once the delight of Tiberius, and so under the mountain Pausilippo again, with torches in our hands, it being night before wee could reach it, which wee passed safely; the better by reason that the holy virgin is gouuernesse of this cauern, and hath a chappell dedicated to her in the middle of it. By this time you must coniecture wee had a good stomach to our supper, which wee made of pigeons, the best heare without controuersy in the world, as big as pullets."

Mr. Dixon did not appear ever to have seen any really good specimens of the breed, for he gives the weight of two pairs in his possession as two pounds seven ounces and three pounds seven ounces, respectively, and writes of their ponderous character. Runts have been exhibited of very much greater weight. Four pounds fifteen ounces have been reached by the birds in a show-pen, and as these must necessarily have lost somewhat from the excitement of their journey to the show, &c., we may take five pounds as the weight of a first-rate pair. At the present time, Runts not weighing more than four pounds a pair have no chance whatever of winning in a strong competition.

Runts vary considerably in form and colour. One of the largest birds we ever remember to have seen was the cock belonging to Mr. Butt which is alluded to at page 32. It was a mottled bird, with a turned crown and hog mane, and strongly resembles Moore's description of the Finnikin, a breed no longer recognized as distinct from other varieties. The record of the exact weight of this bird was not kept, but the size of the stuffed specimen now in our possession far surpasses that of any other pigeon we have ever seen.

Under the French title of Bagadais, the German of Bagadotten, and the English of Scanderoons, a very large, long-legged, long-necked, close-feathered variety of pigeon is much valued on the Continent. Scanderoons have small eye and beak-wattles, and are remarkable for the extreme length of their beaks. In some birds these are straight, in others much curved. In their size, length of limbs, and closeness of feathering, they strongly remind the observer of Malay fowls, and are amongst the most striking of all the varieties of pigeons. We have not seen a

good pen at the English shows for some years. The colour is often irregularly and boldly pied with black or blue and white.

The Runts shown at the present time are mostly blue or silver with dark bars on the wings and white rumps, like the wild blue Rock dove. From their great weight they do not fly well, and consequently are best kept in a room on the ground. They are fair sitters and nurses, if allowed room to fly a little, but in close confinement are unprolific.

One great drawback to letting them fly at large is the difficulty of keeping the young out of the way of cats.

In rearing they require no special care. Where large size is required, it is better only to rear one young one in each nest, giving the other to some strong vigorous foster parents. In feeding for weight, maize should form a good proportion of their food, and they soon learn greatly to relish oatmeal mixed stiffly into a paste with water. The great weights to which we have alluded cannot be gained without close attention to their dietary.

CHAPTER XXV.

THE LAWS RELATING TO PIGEONS.

NUMEROUS laws relating to the protection of pigeons in dovecotes have been enacted from time to time. At the present period, according to Oke's "Handy Book of the Game and Fishery Laws," 1863,

"It is larceny at common law (*i. e.*, simple larceny, punishable on indictment) to take house doves or pigeons, being fit for food, when reclaimed and reduced into possession, as in a dovecote, or shut up in their boxes every night; and, indeed, also when tamed, although unconfined, with free access at their pleasure to the open air (*Reg.* v. *Cheaffer*, 2 Den. C. C. 361; 21 L. J. (N. S.) M. C. 43; 15 J. P. 301; Roscoe's Ev. in Cr. Cas., 5th ed., p. 601; Arch. Cr. Pl., by Welsby, 15th ed., p. 276). If the dove or pigeon is not reclaimed, so as to be capable of a felonious taking, then this section will operate; but if the pigeon be quite *feræ naturæ*, it is not property, and not within this section or the common law. In a recent case (*Taylor* v. *Newman*, 32 L. J., N. S., M. C. 186; 8 Law T., N. S., 424; 27 J. P. 502), however, it has been held that this section does not apply where a party, under a claim of right, and after notice to the owner that he would do so, killed a pigeon belonging to a neighbour which was doing mischief upon his own land. In *Scotland*, the taking of pigeons is theft, and such a defence would not avail the offender (Irvine, G. L. 19). In *Ireland*, it is also an offence punishable summarily by 10 Will. 3, c. 8, s. 8."

The case of *Taylor* v. *Newman*, quoted above, is the most recent decision of a superior court respecting the killing of pigeons under circumstances that do not amount to larceny; we therefore think it desirable to give a detailed report of the case:—

COURT OF QUEEN'S BENCH,

MAY 30, 1863.

(Sittings in Banco, before the LORD CHIEF JUSTICE, Mr. Justice BLACKBURN, and Mr. Justice MELLOR).

TAYLOR v. NEWMAN.

THIS case raised the curious and novel question whether a man can be convicted summarily and criminally for shooting a tame pigeon, *damage feasant*. The appellant had been convicted by justices in Sussex of "unlawfully and wilfully killing a pigeon belonging to the prosecutor." He had suffered some annoyance and damage from the depredations of the prosecutor's pigeons, and gave him notice that he should shoot them if he found them again upon his land; and the next time he saw them there he fired at them, and when they rose and were flying away fired again, killing one of them, for which he was convicted under one of the Criminal Law Consolidation Acts, the 24 & 25 Vict. c. 96, s. 23, which enacts that—

"Whosoever shall unlawfully and wilfully kill, wound, or take any house-dove or pigeon under such circumstances as shall not amount to larceny at common law, shall, on conviction

before a justice of the peace, forfeit and pay over and above the value of the bird any sum not exceeding £2." *

Mr. G. Francis argued that the conviction was right. The killing of the pigeon was unlawful. There was certainly an old case in the time of James I., in which one judge said that if pigeons ate the corn the owner of the land might kill them; but it was added that he might not take them by any means prohibited by law. And there was an ancient statute prior to that case, and a later statute of the 2nd Geo. III. making the shooting of a house-pigeon unlawful.

Mr. Justice Mellor: Surely that Act only applies to malicious or wanton killing; not to killing by a farmer on his own land.

Mr. Francis submitted that it was a positive prohibition of shooting house-pigeons or doves, and the act itself being unlawful, the giving of the notice did not make it lawful. The owner of the land had his civil remedy, but he must not take the law into his own hands.

Mr. Justice Blackburn: He may take the pigeon *damage feasant*, if he can get at it. (A laugh).

Mr. Justice Mellor asked if it could really be contended that it was a criminal and punishable act for a farmer to shoot a pigeon while eating his corn?

Mr. Francis said he could no more shoot a pigeon than he could a pig. He must take it if he could, or sue for the damage. A pigeon was a tame animal, and had the *animus revertendi*. Besides, here the pigeon was going off as fast as it could. (A laugh).

Mr. Justice Mellor: The *animus revertendi* was shown strongly enough, no doubt (a laugh); but he might return.

Mr. Justice Blackburn: The object of killing him was to prevent his return.

Mr. Francis urged that even in the case of a dog actually following a hare, it was not lawful to shoot him unless it was necessary to save the hare. So of a dog following a deer.

Mr. Hannen argued against the conviction that the statute only applied to criminal shooting, and must be construed with reference to the law of larceny. It was larceny to take a pigeon out of the dovecote, but if out of the cote it would be otherwise, and so if a man shot it, but was not able to get hold of it. It was to such cases the statute applied; that is, to cases in which there was a criminal *animus* or intention which fell short, by some accident, of the actual completion of the offence. In the case in the time of James I., Mr. Justice Dodridge said, "If pigeons come upon my land I may kill them, and the owner has not any remedy, provided they be not taken by any means prohibited by statute." though it was true that the Chief Justice was of a different opinion, and held that, as tame pigeons were domestic, and had the *animus revertendi*, they ought not to be killed; but he added, "for the killing of them an action lies;" so that clearly, at common law, it was only a civil wrong. There was no *mens rea* in this case, no element of guilt; there was the mere erroneous assertion of a civil right. The appellant had not fallen into so serious an error as the Lord Chancellor, who distrained ducks, *damage feasant*, on one of his islets on the Thames, but unfortunately ate the eggs they laid while in his custody, and so was "cast" for the eggs, though he justified distraining the ducks.† (Much laughter.) It was admitted that the pigeon might be distrained, but who could put "salt upon his tail?" (Laughter.) It was idle to talk of distraining a bird. In the case of pigs or dogs, they could be got hold of and distrained, but it was otherwise of a pigeon, and there was no practical remedy but to shoot it. In 1824, a great case came before this Court about rooks, in which it was laid down that a man on his own land might kill birds or beasts (not game) *feræ naturæ*, such as rabbits, pigeons, or rooks. In "the Queen *v.* Cridland," a case in this court in the time of Lord Campbell (7 Ellis and Blackburn's Reports, 871), it was laid down as the general rule of law that, as a *bonâ fide* claim of right, justices could not convict summarily. Now, in this case, it was obvious, from the notice, that the appellant was under the impression that he had a right to kill the pigeon, to prevent its eating his corn or coming upon his land.

The Court said they were of opinion that the appellant ought not to have been convicted. It appeared to have been deemed doubtful whether pigeons were subjects of property; and though it was now settled that if tame, and reclaimed, they were so, yet still, as the farmer had acted under the honest persuasion that he had a right to shoot the pigeons in order to protect his crops, the conviction was improper, however he might be liable to an action. There might, certainly, be cases in which the killing of a pigeon might be properly the subject of a conviction, as a wilful and wanton act. But in this case it was not so, and the magistrates ought not to have convicted. The judgment, therefore, was that the conviction should be quashed.

* This clause is taken from the 7 and 8 Geo. IV. c. 29, s. 33, and extended to Ireland.

† The statement that the Lord Chancellor was "cast" for the eggs was afterwards contradicted.

CHAPTER XXVI.

THE DISEASES OF PIGEONS.

IN consequence of the artificial conditions under which domesticated pigeons are reared and nurtured, they are liable to a variety of diseases which appear to be unknown to the birds in their natural state.

Several of these are described, the older Treatises and the most empirical modes of treatment recommended for their care.

Dr. Chapuis, in his valuable work "Le Pigeon Voyageur Belge," has given far more rational descriptions of the diseases of these birds than had been previously published. His remarks, however, apply chiefly to the homing birds that are reared in such immense numbers in Belgium, and consequently he omits noting some of the diseases affecting the more artificial varieties cultivated in this country.

The causes of nearly all the diseases affecting pigeons are the unnatural conditions under which they are maintained. If the birds are kept in localities where they can be permitted to fly at large, housed in well-sheltered lofts that are frequently cleaned, and are supplied with a sufficient amount of wholesome food, and a constant supply of clean water, disease will be almost, if not entirely, unknown amongst them. But if overcrowded and confined in dirty lofts, the atmosphere of which is charged with the exhalations from the dung of the birds, more especially if fed from the floor, where the food becomes contaminated with the dung, and supplied with water that is fouled by the same cause, the birds become unhealthy and subject to scrofulous and other diseases that are unknown when they are maintained in more natural and healthy conditions.

The most frequent of these diseases are known to English fanciers under the names of roup, canker, wing disease, staggers, purging, and fallen gizzard.

It will, however, be more advantageous to consider these diseases in a somewhat more methodical manner, as several are really but different manifestations of the same disease.

SCROFULA in pigeons, as in the human subject, makes itself manifest in several apparently distinct diseases. It is produced in birds by similar causes to those that develop it in man, namely, bad food, foul water, overcrowded unhealthy dwelling-places, and deficiency of fresh air and exercise.

Wing disease is one of the most common forms in which scrofula occurs; it consists essentially in a deposit of cheesy scrofulous matter in and around the joints, the elbow joint (C. Figures I. II. and IV., pages 4 and 7) being the one

most frequently affected, apparently from the circumstance of its being largely extended in flight. In the early stages, wing disease may be cured by the application of tincture of iodine, which causes the absorption of scrofulous deposit, attention being paid to the general health of the bird; but, in advanced cases, recovery is hopeless. In many cases of partial recovery from this disease a stiff joint remains, and the bird is incapable of flight. A cock bird with such a deposit is perfectly useless, but a hen may still be bred from; although, unless her characteristics are of unusual excellence, we should strongly advise her destruction, scrofula in all its forms being one of the most hereditary of diseases.

Scrofula often occurs in the liver and other organs in the form of white tubercles. In these cases the birds lose flesh and are said to "go light." The only effectual treatment is that extension of the cervical vertebræ which is commonly known as "wringing their necks."

Roup is a disease affecting the mucous membranes lining the mouth, nostrils, and air-passages, and often extending up the tear-ducts into the eyes. It is a low form of inflammatory action, resembling a severe cold or influenza. In bad cases it becomes purulent, matter is formed in the eyes and nose, an offensive discharge takes place, and in this condition there can be no doubt that the disease is contagious; the affected bird in drinking contaminates the water, and so affects those who drink after it. Roup may originate at any time by exposure to cold and wet, either in the loft, or at an exhibition or railway station; consequently valuable and delicate birds should always be sent to shows in hampers, the sides of which are lined with canvas.

Warmth alone will not unfrequently restore those birds that are but slightly affected. In more advanced cases we have found copaiba balsam, which has an almost specific effect on mucous membranes, very advantageous. The most ready way of administering it is to procure some of the gelatinous capsules containing the drug, and give one at night to the affected bird. In severer cases, where the discharge is offensive and purulent, a few drops of a lotion made of five grains of nitrate of silver (lunar caustic) in an ounce of rain or distilled water may be applied to the eye; but it should be remembered that this stains the skin of the fingers or any animal substance with which it comes in contact. During roup the birds should be kept very warm and well nourished with stimulating food, such as hemp-seed.

Sore Eyes (*Conjunctivitis*) is particularly common in carriers and barbs, owing to the great development of wattle around the eye and the tendency that old birds have to the formation of spouts by the turning out of the lower lid. The lotion of lunar caustic is very effectual in these cases, or, if preferred, a very small fragment of an ointment composed of five or even ten grains of lunar caustic to an ounce of unsalted lard may be employed. The spouts, as they are termed, may be removed by being cut from below upwards with a pair of very sharp scissors.

CANKER is a peculiar growth that takes place from the mucous membrane lining the mouth and throat. Sometimes it forms in large masses, that require to be dissected away carefully. It is a troublesome disease to cure; but the application of powdered burnt alum, or a solid point of lunar caustic, after the removal of the white diseased growth, is often effectual in removing the complaint.

PUSTULES containing matter are said to be of common occurrence in the lofts in Belgium; but we have never been troubled with them in our own cotes.

VERMIN.—Pigeons are infested with numerous parasites. Four distinct species of lice are found upon them, the most common, and by far the most remarkable, being the *Lipeurus baculus*, the feather-louse of fanciers. This, in the living bird,

FEATHER LOUSE OF PIGEON (*Lipeurus baculus*) MAGNIFIED.

a Antenna of Male. *b* Antenna of Female.

is generally found between the vanes or fibres of the feathers, for which habitation its peculiarly elongated form particularly adapts it. Its body is dull yellow, its head and chest being bright chestnut. The male and the female may be distinguished by the form of their feelers, those of the male only being hooked. After death, the feather-louse collects on the feathers on the head and neck, where it is sometimes found in large numbers. Pigeon fanciers do not regard it as injurious; but it must derive its sustenance from the body of the bird. There is also a small mite, a species of *Acarus*, that during summer, in overcrowded dirty lofts, appears to annoy the birds to a very great extent, infesting the cracks in the nests, walls, and perches in countless thousands. A large tick, a species of *Ixodes*, as large as a tare when full grown, is sometimes found on the birds. Its size is so great that it may be observed through the feathers; and, lastly, a peculiar flea, the *Pulex columbæ*, is often found in dirty lofts.

Cleanliness is the great preventive of these pests. The lice and mites may be destroyed by dusting sulphur under the feathers, or the Persian insect powder may be used in the same manner. A little paraffin oil, or, still better, the more volatile spirits known as vegetable or mineral turpentine, poured on the perches, soon expels them; and, in very bad cases, a single drop may be placed in the feathers of the bird.

Several diseases of the digestive organs occur in the different varieties. Pouters are apt at times to overgorge themselves with dry food, which, swelling in the crop, forms an impacted mass that, if not removed, causes the death of the bird. The old method of treatment was to endeavour to soften the mass by pouring some water into the crop, and then to put the bird into the leg of a stocking, so as to prevent the weight of the food in the crop hanging down—and suspend it until the loosened mass had passed into the gizzard and been digested. In intractable cases, the only mode is to cut into the crop with a sharp penknife, and to remove the hardened mass. This operation is not attended with any danger to the bird if skilfully performed.

Scouring, or Diarrhœa, is not uncommon in delicate birds not flown, or in those fed on bad food. When arising from the latter cause, the remedy is obvious. In delicate birds it may often be checked by a little astringent, such as a grain of green vitriol or sulphate of iron; or, if all the birds are affected, a sufficient amount of sulphate of iron may be added to the drinking water, to give it a decidedly inky taste.

Fallen Gizzard.—In some birds the muscular system is so impaired by want of exercise, &c., that the weight of the internal organs presses the body down in front of the vent. The term "gizzard fallen," &c., is often used to designate such cases. As far as we are aware, they admit of no remedy, and the birds suffering are useless as stock.

Vertigo.—Highly-fed pigeons are subject to some diseases of the nervous system, manifesting themselves in vertigo or giddiness, staggers, and unnatural twisting of the head. Constrained abstinence from food for two or three days, and very moderate feeding subsequently, are the most likely remedies to prove effectual.