RICHARDSON'S RURAL HAND-BOOKS.

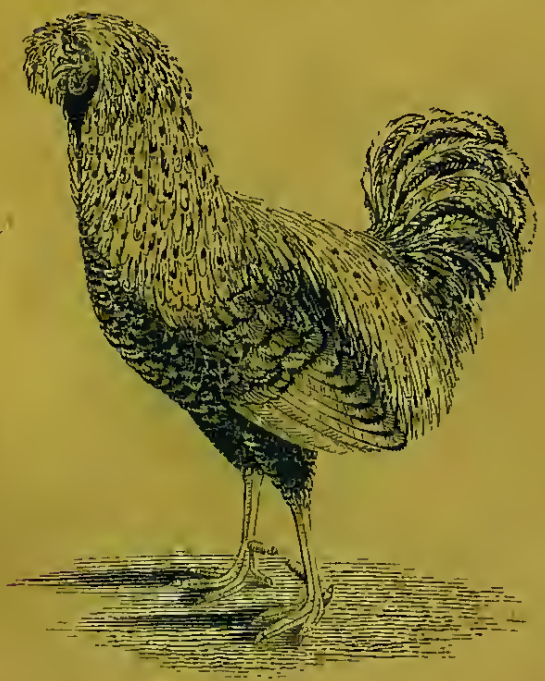
DOMESTIC FOWL

AND

ORNAMENTAL POULTRY.

BY H. D. RICHARDSON,

Author of "Horses," "Dogs," "Pigs," "Pests of the Farm," &c.



London:

WM. S. ORR & CO.

PRICE ONE SHILLING.

THE QUEEN'S POULTRY HOUSE AT THE HOME FARM.

DOMESTIC FOWL

AND

ORNAMENTAL POULTRY:

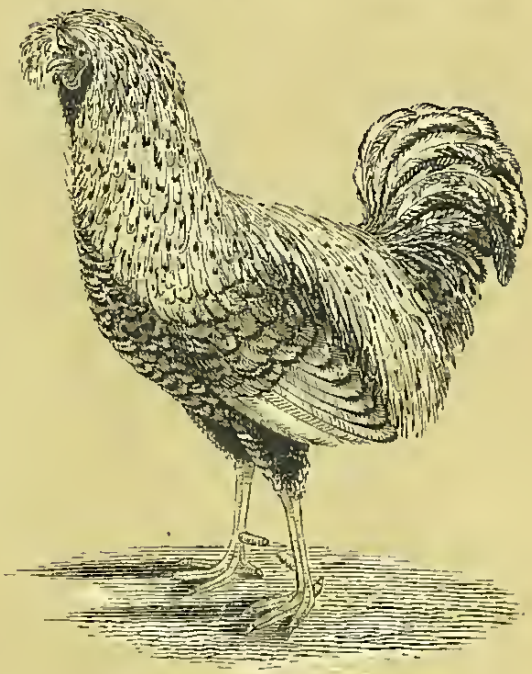
THEIR

NATURAL HISTORY, ORIGIN, AND TREATMENT IN HEALTH AND DISEASE.

By H. D. RICHARDSON,

AUTHOR OF "DOGS," THE "HIVE AND HONEY BEE," "PIGS," ETC.

A NEW EDITION. MUCH ENLARGED.



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THE QUEEN'S POULTRY-HOUSE AT THE HOME FARM.

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DOMESTIC FOWL.

"How grateful 'tis to wake
While raves the midnight storm, and hear the sound
Of busy grinders at the well-filled rack;
Or flapping wing or crow of chanticleer,
Long ere the ling'ring morn; or bouncing flails
That tell the dawn is near! Pleasant the path
By sunny garden wall, when all the fields
Are chill and comfortless; or barn-yard snug,
Where flocking birds, of various plume and chirp
Discordant, cluster on the leaning stack
From whence the thrasher draws the rustling sheaves."

CHAPTER I.

STATISTICAL VIEW OF THE IMPORTANCE OF THE SUBJECT.

POULTRY-KEEPING is an amusement in which all classes can and do indulge. The space needed is not great, the cost of food for a few head, insignificant, and the luxury of fresh eggs or home-fatted chickens and ducks not to be despised. In a large collection of poultry may be read the geography and progress of the commerce of the world. The Peacock represents India, the Golden Pheasant and a tribe of Ducks China; the Turkey, pride of our yard and our table, is one of our many debts to America; the Black Swan, rival of the snowy monarch of our lakes, reminds us of our Australian discoveries; while Canada and Egypt have each their Goose. The large fat white Ducks—models of what a duck should be—are triumphs of British breeding, affording a specimen of one of the best productions of Buckinghamshire since John Hampden, while the shining green black ones at once fly away with us to Buenos Ayres and Dictator Rosas. And when we turn to the fowl varieties, Spain and Hamburgh, Poland and Cochin China, Friesland and Bantam, Java and Negroland, beside our native Surrey, Sussex, Kent, Suffolk, and Lancashire, have each a cock to crow for them.

Our earliest, and pleasantest, childish recollections are associated with feeding a clutch of callow chickens, sharing the anxieties of a hen about a brood of young ducks that *would* swim; and gazing in admiration, not unmingled with awe, on the suberb parading of a Peacoek, and the fierce gobbling of a Bubbly Jock.

But we may derive other useful lessons besides those of geography and commerce from the poultry yard. The same prineiples, the same close attention to food, warmth, and symmetry of form, which have produced perfection in short-horned cattle, Leicester sheep, and thorough-bred horses, have, in a minor degree, afforded us Bantams, "true to a feather," as well as size and beauty in Spanish, Dorking, and Poland Fowl. The first incitement to economy and regular book-keeping, may sometimes be traced to a boy's memoranda of profit and loss on the keep of a few laying hens. Besides, poultry harmonize with pigs, and half the astounding discoveries of farmer Huxtable rest on pigs. Whether poultry keeping can be rendered profitable, is a question which depends on a variety of circumstances, which cannot be alike in two localities; because they depend on the cost of food, and the nett price which can be obtained for the produce in eggs or birds; thus, one person with the free run of a fine dry upland warm common, with a ready market near, may make an excellent profit; while another, bestowing equal care, but confined to a small field of cold soil, may lose nine out of ten of the most valuable young poultry.

Poultry may be converted into money either while living or when dead; or they may be bred, partly for the market, and partly with a view to the disposal of their eggs. Some consideration may be supposed due to feathers; but that belongs not to the compass of this volume, as the fowl are disposed of by the breeder unplucked, and I have nothing farther to do with them, when once they have left his hands.

First, as to the profit arising from the disposal of superfluous stock. This depends, of course, in a great measure, upon the quality and character of the birds kept, and hence, if the reader be advised by me, he will confine his fancy to the more valuable varieties. The expense of feeding and rearing a valuable fowl will not be found to exceed that required for a comparatively worthless one; at least, if at all, only as regards comfort and warmth, which, if properly procured, are not very costly. The present selling price of Spanish fowl is about 35s. a pair, or, if sold separately, 25s. to 30s. for the cock, and 20s. for the hen. While the Malay breed will feteh if true, and handsome birds from L.3 to L.3, 10s. the pair. Poultry of very superior quality, especially such as have obtained prizes at any of the

first-rate agricultural exhibitions, will fetch a higher price than this. I have even known prize fowl, of extraordinary excellence, bring double the price here indicated; but of course this is a price given for the *breed*, and not for killing. In all these cases the producer must, of course, allow a fair profit to the *dealer;* he cannot, therefore, reckon on more than two-thirds of this price, yet this will amply remunerate him.

In England the profits accruing from the breeding and fattening of poultry have been longer understood than in Ireland; and so far back as 1837, the London dealers often paid away upwards of £150 in a single day. At Wokingham, in Berkshire, in 1827, young fowl, even of the common dunghill sort, sold for 8s. a couple: from 4s. to 8s. for young and fat fowl, may still be considered a moderate price in the spring. In London there is always a great demand for poultry especially during the fashionable season, when twenty dozen or more are often required for a single festival; and if they were scarcer, and the price, consequently, higher, they would, doubtless, become in still greater request. Lord Althorpe (Earl Spencer), who always signalized himself by his patronage of every description of rural and domestic economy, instituted a poultry show at Chapel Brompton, in Northamptonshire. The best turkey weighed, on this occasion (1829), 20 lbs. 4 oz.; capon, 7 lbs. 14½ oz.; pullet, 6 lbs. 3½ oz.; goose, 18 lbs. 2½ oz.; ducks (per couple), 15 lbs. 10 oz. These, be it remembered, were fattened expressly for market. Since 1829, poultry shows have been established all over the kingdom, with a view to encourage the attention of the people to this branch of rural affairs. Amongst the most eminent of these shows, I may mention that under the direction of the Royal Zoological Society of London, that of the Highland Society of Scotland, that of the Royal Agricultural Improvement Society of Ireland, and that of the Royal Dublin Society. The Birmingham Society, and a Society of some consideration at Newcastle-on-Tyne, with many others, all conducted on the most liberal and energetic principles.

The most exact accounts we have met with of the profits of Poultry keeping, have been given in the Agricultural Gazette. A writer, Richard Pigott, Stocksferry, gives the actual cost and receipts for the produce of ten hens and a cock in 1846, and of twelve hens and a cock in 1847. The food was all bought at a high market price, and the produce sold in the village. The fowl were kept clean, and well housed and attended; fed regularly three times a-day when young, and had the run of a large grazing yard in the day-time.

COST IN 1846.		RECEIPTS IN 1847.	
40 pints Groats,	£0 8 6	For Eggs, at 8d.	£0 13 8
Oats,	0 19 4	10 Ducks, at 1s. 9d.	0 17 6
Barley-meal,	0 19 0	12 do. 1s. 8d.	1 0 0
Barley,	1 0 6	82 Chickens, at 1s. 6d.	6 3 0
Tail Wheat,	1 0 0		£8 14 2
Eggs, for Selling,	0 3 4	Cost,	4 16 2
Collecting Eggs, &c.	0 5 6		
	£4 16 2	Profit,	£3 18 0
1847.		For Eggs, at 9d.	£2 11 6
For 16 pints Groats,	£0 3 4	66 Chickens, at 1s. 8d.	5 10 0
9 bushels Barley,	2 14 0	8 do. 1s. 6d.	0 12 0
Barley-Meal,	0 7 9		£8 13 6
Collecting Eggs,	0 2 9		3 7 10
	£3 7 10	Profit,	£5 5 0

The following statements of a farmer's wife, were read to the Farmer's Club at Newcastle 1848 :—"On our farm, the poultry consists of sixty hens, principally of the Dorking breed, six ducks, and from seventy and eighty geese, purchased in the autumn."

COST.		SOLD.	
Barley, Milk, Meal, and Corn,	£6 4 1	3400 Eggs, at 5s. 6d. p. 100,	£9 7 0
Woman's wages and Market charges.	4 12 7	208 Chickens, at 1s. 9d.	18 4 0
70 Geese, at 2s. 6d.	8 15 0	Do. consumed at home.	4 14 6
	£19 11 8	60 Geese, at 5s. 6d.	16 10 0
		10 do. consumed,	2 15 0
		20 Ducks, at 2s. 6d.	2 10 0
			£54 1 6
		Cost,	19 11 8
		Profit,	£34 9 10

In the 4th volume of the Prize Essays of the Highland Society, Mr England gives a statement of the cost and produce of a Poultry establishment of four wards, of twenty-four hens and a cock each, as follows :—

Cost of Building,	£47 10 0	Produce,	£258 0 0
Live Stock, at 3s. 6d.	15 12 6	Deduct cost	100 3 6
House-rent, Henwife,	1 10 0		£157 16 6
Milk, Meal, and Rape,	12 10 0	Or sinking outlay for Building,	220 10 0
Interest on £63, 2s. 6d.	3 1 0		
Repairs,	2 0 0		
Grain, 15 qrs., at 24s.	18 0 0		
	£100 3 6		

To produce anything approaching to these profits, however, it is essential, 1st, to have a superior breed in place of the fowl commonly

found in the barn-yard; 2dly, to have suitable houses and yards for their accommodation.

But although there may be doubts about the profits, there can be none about the amusement to be derived from a well chosen collection of domestic birds, and, whether for profit or amusement, the rules to ensure success are the same. It will be my endeavour to lay these down as plainly as possible.

Certainly the present, if any, is the time for making a profit by poultry, since all the inferior kinds of grain are cheap and likely to be cheaper. The demand for poultry increases rather than diminishes, and railroads have opened up cheap conveyances to market. The fact is that the great drawback on poultry rearing arises from loss by disease; while the greatest profits are derived from successfully rearing the birds which are most subject to disease at inclement periods of the year.

Ducks and geese are more easily raised than fowl, turkeys, or guinea-fowl, if there be conveniences of grass and water; but then fine turkeys and fat young guinea-fowl in due season are sure of a sale at a good price. With respect to the poultry of cottagers, which are fed on what would otherwise be wasted or what is collected by the industry of their children;—warmly housed under the same roof as the owner, they often thrive better and prove more prolific than the expensively tended inmates of ornamental poultry houses. The celebrated Aylesbury ducks, for instance, are often reared under the beds of the cottagers in Buckinghamshire; and dunghill hens that roost in the "kitchen and parlour and all" of the peasant, often lay, when the choice everlasting layers of neighbouring noblemen and gentlemen seem to have retired on half-pay.

In the following pages the most esteemed varieties of poultry and water-fowl will be described. The poultry-keeper, whatever be his rank in life, will find it to his advantage to keep a good breed in preference to a bad one. Some of the more beautiful or valuable kinds of poultry are too delicate to prove profitable in poor men's cottages; but size, early maturity, and prolific hens, will, under the most unfavourable circumstances, be of more advantage to them than small, ugly, rarely-laying birds.

I would suggest to the numerous individuals of the higher classes who are anxious to promote the comfort of the rural peasantry, that as they keep good stallions, bulls, and rams for the benefit of their farmers, so they could not do better than distribute among their cottagers cockerels of the best Spanish Cochin-china, Malay, or Dorking

breeds, or by dividing among them a dozen or two of eggs of the best breeds. Thus, for twopence per head, they may replace worthless poultry by valuable chickens, and get genuine thanks, beside a small income for their poorer neighbours, derived from the produce of valuable table fowl, and from the sale of their eggs. The eggs of the more valuable foreign breeds, and the *Dorking*, will always find a ready sale, and when the profit is looked to from the sale of eggs, the expense of fattening has not to be incurred. The Spanish are, perhaps, the best layers, and their eggs will fetch wholesale, from 6s. to 9s. per dozen; by retail, from 12s. to 18s. A cross between the Spanish cock and the common or Dorking hen, is one of the most valuable fowl the peasant could have.

Some very interesting experiments relative to the production of eggs were made, about fifteen years ago, by Mr. Mouat of Stoke, near Guildford. He got three pullets of the Polish breed on the 1st December, which had been hatched in June previous, and they commenced laying on the 15th of the same month. They laid between them, during the twelve months, the number of 524, being about 272 each. During the twelve months they consumed 3 bushels of barley, 17 lbs. of rice, and a small portion of barleymeal and peas. The cost of these amounted to about 16s. 10d. The number of eggs being 524, gives about 31 eggs for every shilling expended, and, assuming the weight of each egg to be $1\frac{1}{4}$ oz., we have the result of 41 lbs. of the most nutritious food that can possibly be procured, at the low cost of $4\frac{3}{4}$d. per lb.; or if these eggs were, instead of being consumed, sold to a retailer, a profit of about 100 per cent. would have accrued to the producer to set off against the trouble (if it can be styled trouble) attending the management of the fowl.

A large proportion of the eggs which supply the London market are brought from France, and chiefly from the department of Calais, opposite the coast of Kent and Sussex; and hence the price of eggs in that part of France is greatly enhanced, compared with what it is in other parts more remote from so good a market. We have also of late cargoes of eggs from Portugal and Spain. The quantity imported was, a few years ago, said to be 55,000,000 from France alone, and from Ireland upwards of 52,000,000; the estimated produce of 450,000 fowl in the later case.

In the Pas de Calais there can scarcely be a smaller proportion than two families out of every five who are connected with the egg trade. The usual mode in which these eggs arrive at the market is through the intervention of an intermediate class of dealers, who go from house

to house, visit cabin after cabin, collecting from each the accumulated store, and who, in their turn, bring the produce of their tour to the egg *merchant*, who regularly ships them for their destination. A practice very similar to this prevails in Ireland. Mr. Wild, in his "Statistical Survey" of Roscommon, thus writes:—"The trade in eggs, the value of which for export, according to Mr. Williams, in 1832, amounted to £500 a day, paid by England to Ireland, is carried on with considerable vivacity at Lancesborough, and also at Tarmonharry. The eggs are collected from the cottages for several miles around by runners—commonly boys, from nine years old and upwards, each of whom has a regular beat, which he goes over daily, bearing back the produce of his toil carefully stowed in a small hand-basket. I have frequently met with these boys on their rounds, and the caution necessary for bringing in their brittle ware with safety, seemed to have communicated an air of business and steadiness to their manner, unusual to the ordinary volatile habits of children in Ireland. I recollect one little barefooted fellow explaining that he travelled daily in his rounds about twelve Irish miles (above fifteen English miles). His allowance, or rather his gain, was 1s. upon every six score of eggs brought in—the risk of breakage and carriage resting entirely on himself. The prices vary at different periods of the year; but they are never changed without previous notice to the runners. In the height of the season, the prices at Lanesborough were from 2s. 6d. to 4s. per 120; but towards the winter they rose to 5s. The eggs were packed in layers with straw, in such crates as are commonly used for the conveyance of earthenware. Each crate will hold about eighty-four hundred, of six score—that is, 10,080 eggs, the first cost being from £10 10s. to £16, 6s. per crate. These are sent forward on speculation to Dublin, or, occasionally, they are sent at once to the English market, and a profit of £4 or £5 per crate is considered a fair remuneration. Sometimes it is more, and sometimes less; and there is risk in the trade. From Lanesborough the crates are sent overland to Killashee—the nearest place on the line of the Royal Canal—and forwarded by the trading boats to Dublin. At Tarmonbarry I have seen several cars come in laden with crates of eggs, from the neighbouring districts on each side of the river. The dealers at Lanesborough, with whom I conversed in the act of packing their crates, seemed quite surprised at my question, whether they ever used any artificial means of preserving the eggs; and could scarcely credit the account I gave them of the possibility of preserving their freshness for a considerable time, by simply annointing them with an unctuous substance such as butter or lard. I found it necessary to add, that

in this process the whole of the egg must be carefully covered, and that it should be done soon after the eggs are laid."

The following statements, by M. Legrand, a member of the French Statistical Society, on the production and consumption of eggs in France, may not prove uninteresting, as they tend considerably to aid me in my endeavours to prove that, however insignificant in themselves eggs may appear individually, in the aggregate they are of no small importance:—"In 1813, the number of eggs imported from France was 1,754,140. Between 1816 and 1822, the number exported rose rapidly from 8,733,000 to 55,717,500; and in 1834, the number had increased to 90,441,600. In 1835, 76,190,120 were exported from England: 60,800 for Belgium; 49,696 for the United States; 49,260 for Switzerland; 34,800 for Spain; and 306,304 to other parts of the world. The total amount of the exportations for that year was 3,828,284 francs. The consumption in Paris is calculated at $115\frac{5}{8}$ eggs per head, or 101,012,400. The consumption in other parts of France may be reckoned at double this rate, as, in many parts of the country, dishes composed of eggs and milk are the principal items in all the meals. The consumption of eggs for the whole kingdom, including the capital, is estimated at 7,231,160,000; add to this number those exported, and those necessary for reproduction, and it will result that 7,380,925,000 eggs were laid in France during the year 1835."

M'Culloch, in his "Dictionary of Commerce," states, that France exported, for the consumption of London and Brighton alone, upwards of £76,000 worth of eggs; and this branch of commerce must have increased largely since the period when M'Culloch wrote.

The Commissioner, appointed by the proprietors of the "Morning Chronicle," to report on the state of the agricultural population of France, remarks as follows:—"Proceeding in a north-east direction from Caen, we begin to observe a new and not unimportant element of local prosperity, in the rearing, in immense quantities, of fowl, ducks, geese, and turkeys, principally for the purpose of exporting their eggs to the London markets. The breeds of these birds struck me," adds the writer, "as being particularly large and handsome. For miles and miles the country is alive with them; and, according to the last statistics, from 7000 to 8000 dozens of their eggs are dispatched weekly to England.

Among the returns of agricultural produce in Ireland in the year 1849, presented by command of her Majesty to both Houses of Parliament, we find poultry in 1847, rated at 5,691,055; and in 1849, 6,328,001 birds. In the memoir published with the "Ordnance Sur-

vey," it is stated, that from the town of Londonderry alone, are annually exported £60,000 worth of eggs.

In the Board of Trade returns of imports for the months ending September 5, the number of eggs stated to be imported, are 8,819,859 for 1848; 8,434,831 for 1849; and 9,108,438 for 1850; while for the eight months ending September 5, 1850, they number 81,081,745.

A statement furnished by Mr. M. P. Howell, secretary to the city of Dublin Steam-packet Company, is to the following effect:—The number of boxes shipped by that Company's vessels for London, during the year 1844-5, was 8,874; about the same number was shipped by the British and Irish Company—making a total of 17,148 boxes; each box contains 13,000 eggs, but occasionally large boxes are used, containing more than four times that number. This gives the result of 23,072,400 eggs, as annually shipped for London. To Liverpool were shipped 5,135 boxes, containing 25,566,500 eggs, making a total of the shipments from Dublin alone, during the past year, to the two ports of London and Liverpool, of 48,639,900, the value of which, at the rate of 5s. 6d. per every 124 eggs (the return made), gives a sum amounting to about £122,500, as the annual value of the eggs shipped from Dublin alone, and since this return the export of eggs enormously increased. Assuming the export of Dublin to be equal to one-fourth of the exports of all Ireland, we have very close on five hundred thousand pounds, or half a million sterling, as the value of this branch of commerce to Ireland, showing also an increase of *four-fold* since 1835. By the same returns, I have ascertained that in 1848 the export of eggs is now nearly doubled—viz., bordering on a MILLION STERLING. No return has been kept of the number or value of the *poultry* that have, living or dead, been exported from Ireland; but it has been ascertained, beyond all possibility of doubt, that this branch of commerce has been, of late years, greatly on the increase—a natural consequence of the introduction of the superior foreign varieties of fowl—a circumstance due in its turn to the patronage of the valuable and highly praiseworthy societies to which I have already alluded.

CHAPTER II.

POULTRY HOUSES.

BEFORE purchasing your poultry have your house all ready to receive them, or you may do your stock more harm in a few days, by close

cooping or cold roosting them, than you can repair in a year. I design showing here how very readily, and at how small a cost, a sufficiently good, and in every respect suitable poultry-house may be erected. I cannot, of course, desire to recommend any restrictions to those whom Providence has favoured with wealth. There exists no reasonable objection to such as can afford it gratifying their taste, either as to extent of accommodation or elegance of structure. The poor man, on the other hand, need not lay out one farthing, and still may be as successful in his operations as his more wealthy neighbour. It is my object to write for all classes; for although the poor man may not be able to procure this little volume, cheap though it be, his kind landlord, or the enlightened steward may do so, and employ its pages for his instruction. I shall, accordingly, describe several sorts of poultry-houses, from that on the most perfect and extended scale, to that which can only boast of *barely* answering the purposes for which it is designed—from that, in short, the erection of which has formed a pleasing and harmless recreation for the leisure hours of royalty itself to that which has been coarsely laid against the humble gable of the mud-built cabin.

In nine cases out of ten some outhouse is appropriated to the purpose, without preparation or alteration. But, if consistent with your means, by all means build a proper house. If you build one, choose a piece of gravelly soil well drained on a slight declivity, near trees which will afford shade and shelter from winds. The building should be lofty enough to admit the poultry keeper without stooping, because, if it be inconvenient to enter, the chances are that regular cleaning will be neglected. Let the roof be kept weather-tight. Thatch is warm and ornamental, but apt to breed vermin. If slates or tiles are employed the house should be ceiled in order to protect the fowls from draughts and rapid variations of temperature; in default of lath and plaster a piece of patent asphelted felt closely nailed makes a cheap and efficient ceiling.

The best perch is made in the shape of a broad double ladder, stretched out so as to form a wide angle; the bars being placed so far apart that one fowl shall not overhang another. If roosting bars be used across the fowl-house, care should be taken that a convenient hen-ladder is always attached to them, and that they are not placed too high. Heavy fowl are apt to break their breast bones in trying to fly down from high perches.

The careful poultry-keeper should take a view of the fowl at night after they have gone to roost, and see that they are all comfortable, not

too crowded, with room enough for the weak ones to get away from the strong, who are apt to tyrannise. The floor must be sound, dry, and covered, with fine gravel or sand, and it should be swept clean every day. Nothing injures the health of fowl more than bad smells. To obviate this always keep a basket of slaeked lime or old mortar in a corner with a shovel, so that you may shake some over any dirt. The sweepings, if kept quite dry, form most valuable manure. For the same reason have the interior walls frequently whitewashed, and the window open in fine weather. If the window can be filled with a wooden venetian blind so much the better. The door should have a hole at the bottom with a sliding panel to admit the poultry during the day —by keeping it locked you have a better chance of gathering plenty of eggs. If you have no windows, moveable loose boards fitted to the door may be useful to admit air.

As warmth is so requisite to poultry it will be an advantage if one side of the poultry-house be against the outside wall of a kitchen or boiler-house, or a hot water pipe running through it from the hot-house will well repay the outlay. With a sweet clean warm poultry-house you will have plenty of eggs long before more careless neighbours.

As to the nests the great point is that they should be near to the ground, easily cleaned, and not too large. If they are too large two fowls will often try to sit in the same nest at the same time. If there is any difficulty in getting at them, hens are apt to drop their eggs on the ground. Nests may be made of wood, earthenware unglazed, or basket-work; if wood there should be a small ledge to prevent the eggs from rolling out. A little old mortar or wood ashes laid at the bottom will tend to keep the nests clean. Straw and heather both make good lining for nests, but the latter should be cut into short lengths.

If the nests are arranged in two stories there should be a broad ledge wide enough for a hen to walk on in front of the top row, like the platform of a drawing-room virandah, and a hen-ladder should be placed at each end, but nests are better on the ground.

It is very advantageous to place fowl which are sitting in a retired situation where they will not be annoyed by other fowl, and where, when the hatch takes place, they can be cooped with their young out of danger, with a dry yard or close cropped lawn in front to run on. Many hens as well as peafowl and turkeys are vicious, and will try to destroy a rival brood.

A small brick hutch about a yard square, with a hard dry floor, and a moveable wooden top is excellent as a *sitting*-room for hens. I

have seen an old cucumber frame covered with wooden slabs successfully arranged for bringing up early clutches.

Be sure before you put a fowl to sit that the nest is perfectly clean; if the hen becomes infested with vermin she pines and cannot sit close. It will often be found cheaper to make a good fowl-house at first, than to be continually adding and patching.

Of course if you have more than one breed of fowl they must be kept separate, if you intend to keep the race pure. Where this is attempted, an enclosure adjoining the poultry-house, with three divisions of iron wire will be found useful, if the space and cost can be spared. In these enclosures in wet cold weather, the poultry can be confined, with room to scratch and feed. The largest division will be for your laying hens and turkeys, and miscellaneous stock. In this space you can muster them, accustom them to be fed, and see that all are in health, and make the close observations which are needful for success. In the second you can place hens with young broods before they are strong enough to mix with the other fowl. In the third, and smallest, poultry for fatting. If just large enough for them to enjoy the air without being able to run about much, with shade, sun, plenty of clean water, and food, they will generally thrive better than when cooped. A few good coops either of wood and wire, or wicker, with the top thatched, should always be at hand. These should be made so as to shut up the chickens if necessary, as well as the hens. If the fowl-house is large enough have a small sink in one corner where it is light, and if it is not large enough, put in the yard, under shade a large glazed earthenware pan, and fill it with fine sand, or ashes, or slacked lime, or burned oyster shells, as a dust bath for the fowl. By placing the stuff in a pan it is easily changed from time to time.

If you are obliged to put up with a small lean-to or other confined place, for your fowl-house, at any rate take care to keep it clean, for warmth, cleanliness, and judicious feeding are the cardinal maxims for poultry management.

THE ROYAL POULTRY-HOUSE.

The royal poultry-house is situated on the farm attached to Windsor Castle, called the "Home Farm," at Frogmore. It is placed in a secluded part of the Home Park, and is well sheltered. This establishment originated with George III., in 1793; but the buildings, which were then thought sufficient for all purposes, were, in 1843, found by her present Majesty to be wholly inadequate to the proper carrying out of more modern improvements. The present establish-

ment was designed and built by Messrs. Bedborough and Jenner, of Windsor, under the immediate superintendence of her Majesty and the Prince Consort, aided by Colonel Wemyss, Lord Lincoln, and Mr. Engall.

The royal poultry-house is a simple, but, at the same time, elegant building, of a semi-Gothic character. It consists, as our frontispiece shows, of a central pavilion, flanked by roosting-places, and breeding and laying nests. The pavilion is used as a spot whence the fowl can be conveniently inspected, and is surmounted by an elegant pigeon-house, remarkable for its lining of looking-glasses, in which pigeons delight to gaze, and before which they are constantly preening and dressing themselves.

The ground slopes in front towards the Park, and is divided by slight wire fences into wards, as walks or places for the daily exercise of the fowl; these wards were formerly laid out in gravel walks or grass-plots, but this has lately been entirely removed, and replaced by asphalt pavement, sloping down to a terrace, on which the wire enclosures open. The terrace descends by a flight of steps to the pond. The poultry-houses are large and airy; the fittings and general economy of the house have been carefully regulated with reference to the natural habits of the birds, having the iron pipes of a hot-water apparatus passing through them and also through the breeding pens, but these are not now used.

This building is pretty and well placed, but in other respects has nothing extraordinary about it, and as far as the hatching department is concerned, might be improved, as there are no conveniences for rearing early spring chickens, or very tender birds in cold weather.*

The stock presents nothing remarkable for excellence, unless it be some white Java and some golden bantams. Several of the most beautiful kinds of fowl are wanting. No attempt has been made to rear pure specimens of the Cochin Chinese, Malay, or Dorking fowl, but all are allowed to mingle promiscuously, just as if no means had been provided for keeping the various breeds apart and pure. The subordinate feeder to whom the whole care of the aviary seems entrusted, is an extremely decent, scrupulously neat, and profoundly ignorant person. I found her totally unacquainted with the merits and peculiarities of every kind of fowl except the "*Darkin.*" She seemed to consider that by

* When the author of this work visited Windsor, more care seems to have been taken. The laying-nests were then, he says, formed of dry twigs of the heather. (Erica titralix), which had the advantage of keeping the fowl free from vermin. No such care seems taken at the present day.

keeping the aviary moderately clean, and fattening a few chickens for the table, she had fully performed her duties. Under her ruthless hands almost all the broods of Malays and Cochin Chinese had fallen—not one fine cockerel was to be seen. No Polands, in their varieties; no Spanish were there; no Guinea fowl, either speckled or white, except one sickly brood under a hen, which she did not know how to treat. The water fowl were confined to common ducks. In fact, all that is done at the aviary at Frogmore is done every day just as well, if not better, and certainly more cheaply, at many a fourth-rate farm-house. But with the present buildings, and without any additional expense, there are many amateurs, not to speak of the intelligent persons who superintend the birds of the zoological gardens, who would manage to keep up a numerous and picturesque stock of the best kinds of poultry, pigeons, and water-fowl. As a whole, the Queen's aviary affords another example, were any needed, of the necessity of an owner's eye for the well-being of his birds.

In the Queen's parlour I saw the celebrated Cochin Chinese cock, which carried off the prize at the Dublin Poultry Exhibition in 1846, stuffed, but suffering for want of a glass-case. He must certainly have been a most magnificent bird, but, judging by his spurs and legs, old enough to have consorted with the cock of St. Peter. It may be doubted whether the immense weight given by Mr. Nolan to this breed of fowl can be attained under the age of a patriarch.

LORD PENRHYN'S POULTRY-HOUSE.

Perhaps one of the most splendid poultry-houses that has ever been erected is that of Lord Penrhyn, at Winnington,* in Cheshire. It consists of a regular and handsome front, about one hundred and forty feet in length, having at each end a neat pavilion, with a large arched window. These pavilions are united to the centre of the design by by a colonnade of small cast-iron pillars, painted white, which support a cornice and a slate roof, covering a paved walk, and a variety of conveniences for the poultry, for keeping corn, eggs, &c. The doors into these are all of lattice work, painted white, in green framing. In the middle of the front are four handsome stone columns, and four pilasters, supporting, also, a cornice and a slate roof, under which, and between the columns, is a very beautiful Mosaic iron gate; on one side of this gate is an elegant little parlour, most tastefully papered

* I do not know whether or not this beautiful building continues to be appropriated to its original use.

and furnished; and at the other end of the colonnade, a very neat kitchen; behind this is a large, well-paved court, with a pond and pump in the centre. The whole fronts a little paddock, where the birds are turned in between meals. The strictest attention is paid to cleanliness, and, notwithstanding that about six hundred poultry of different kinds were kept in the establishment, neither dung nor litter was ever to be seen lying about for a moment. This building is of brick, except the pillars and cornices, and the lintels and jambs of the doors and windows; but the bricks are concealed by a covering of fine slate, brought from his Lordship's quarries in Wales.

MR. ENGLAND'S POULTRY-HOUSE.

In a paper published in the *Transactions of the Highland and Agricultural Society of Scotland*, for 1833, Mr. England gives a plan of a poultry-house which presents some features, at that time regarded as a novelty, but which have since come into general use. The house was divided into separate wards, each ward calculated to accommodate twenty-four hens and one cock, with a yard attached to it of about twelve feet square. The houses were supplied with nests, which had small platforms in front, and were reached by commodious ladders. He had also provided a *storm-house*, for shelter in bad weather, and a *dry bath-house*, or a place supplied with fine sand, in which fowl delight to roll or bathe, and which they likewise swallow, in order, by its mechanical attrition, to facilitate the process of digestion.

MR. WAKEFIELD'S POULTRY-HOUSE.

Mr. Wakefield, who kept a very large stock of geese, ducks, turkeys, and poultry, near Liverpool, adopted a very simple, but, as the result showed, most successful plan of operation. He had an acre of ground enclosed with a fence, about six or seven feet high, formed of boards or slabs set on end, and fastened by two rails, one at the top and the other at the bottom; the stakes were *pointed sharp*, which prevented the fowl from attempting to fly over. Within this enclosure were lodging-places, slightly built, but at the same time well secured from wet, with small separate enclosures for each sort of poultry, and a stream running through each.

Mr. Beatson, in a communication to the Board of Agriculture (*Trans., vol. i.*) remarks, that nothing more is necessary for the keeping poultry with profit and advantage, beyond having a small shed or light building, formed in some warm, sunny, and at the same time, sheltered situation, fitted up with proper divisions, boxes, lockers,

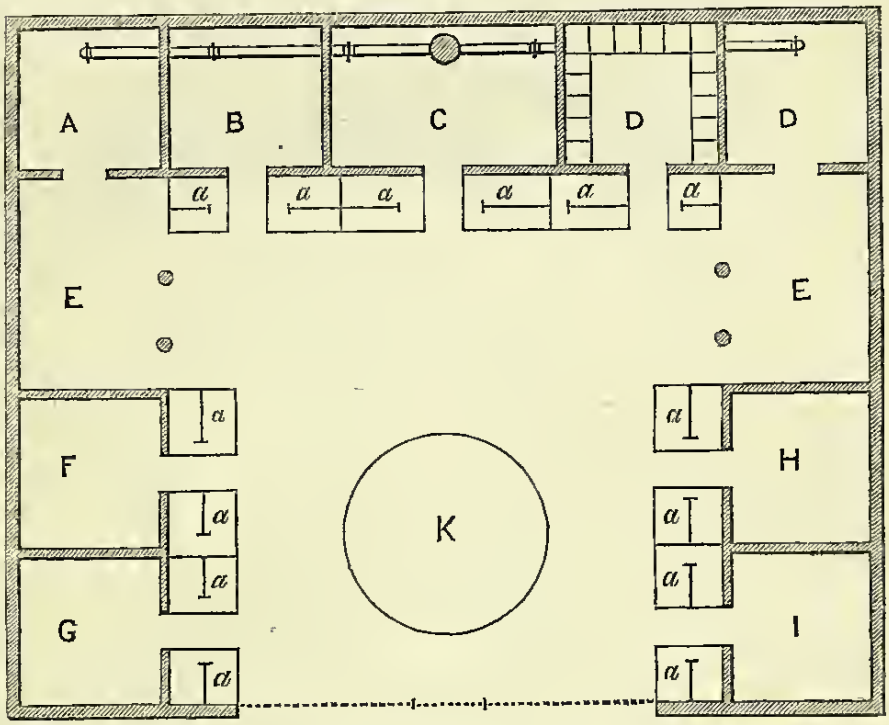
or other contrivances for the dwelling of the different sorts of birds, and places for their laying in; and he is unquestionably right. This and *cleanliness* suffice.

"Cleanliness," says Mr. Beatson, "with as free a circulation as possible, and a proper space for the poultry to run in, is essential to the rearing of this sort of stock with the greatest advantage and success, as in narrow and confined situations they are never found to answer well."

In every establishment for poultry rearing there ought to be some separate crib or cribs, into which to remove fowl when labouring under disease; for not only are many of the diseases to which poultry are liable highly contagious, but the siek birds are also regarded with dislike by such as are in health; and the latter will generally attack and maltreat them, thus at the very least aggravating the sufferings of the afflicted fowl, even if they do not actually deprive them of life. The moment, therefore, that a bird is pereeived to droop or appear to be pining, it should be removed to one of these infirmaries.

Separate pens are also neeessary to avoid quarrelling among some of the highly-blooded breeds, more particularly the game fowl. They are also necessary when different varieties are kept, in order to avoid improper or undesired commixture from accidental crossing. These lodgings may be most readily constructed in rows, parallel to each other; the partitions may be formed of lattice work—they will be rather ornamental than otherwise, and the cost of their erection will be but trifling. Eaeh of these lodgings should be divided into two compartments, one somewhat larger than the other. One compartment is to be close and warm for the sleeping room; the other, and the larger one, should *be airy* and open, that the birds may enjoy themselves in the day-time; both should be kept particularly dry and clean, and be well protected from the weather. The accompanying ground-plan, furnished by Mr. Donaldson, and embodying most of these requirements, will be found at once convenient, economical, and commodious. It represents a poultry-yard, in which the roosting and hatching-houses are heated by pipes from the food-house, in order by warmth to procure eggs and chickens during the whole year. Each kind of animal has a separate accommodation. The house should be plaeed on a warm and dry situation, sloping towards the front, with an aspect such as will secure the greatest daily average of sunshine. It should be built of briek or stone, not wood, if that can be avoided, and should be divided into different wards, and hold not more than twenty-six hens, with a sepa-

rate nest for each, made of wood, with a false bottom for convenience in cleaning. In the centre of the roosting-house should be placed a ladder with four perches extending from side to side—the perches commencing at a foot and a half from the ground with a foot between each, so that the highest may not exceed four to five feet in height. Neither should the sitting or laying nests be more than at the most three feet from the ground.



A. Turkey-House. B. Hatching-House. C. Food and Boiler-House.
D. D. Roosting-House. E. E. Covered Shed. F. Duck Hatching-House.
G. Duck-House. H. Hatching-House for Geese. I. Geese-House.
K. Pond in the Yard. *a a a* Cribs and Coops.

Attached to the house should be a well-drained yard, with a division of wire or trellis work for every ward, with water in each; and it will be advantageous to have outside of this yard a wider range of turf and gravel, where the fowl can be more at large. When different broods are kept, and it is desired to keep them apart, the larger yard must be shared in turn by the inhabitants of the different wards. In the house planned above, the hatching-ward, and also the feeding-ward, are kept separate. The designer has also added a roosting and hatching-ward for ducks and geese, with a small pond,

which is intended to be accessible to all the inhabitants of the poultry-yard.

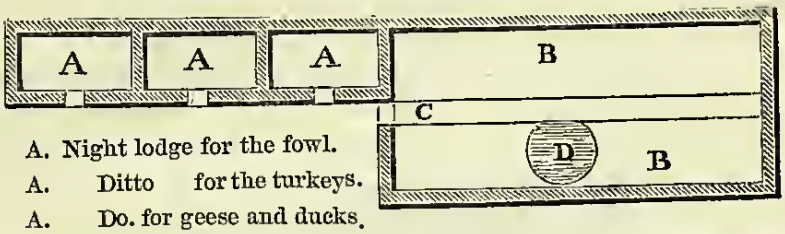
Every poultry-house, as we have before said, should be provided with a sufficient quantity of small sand; or, if such cannot be procured, clean ashes are a good substitute; pieces of chalk are also a useful, nay, necessary adjunct: *crude lime* acts, however, as a poison. Some horse-dung or chaff, with a little corn through it, is also a source of much amusement to the birds; and it should be borne in mind that *amusement*, even in the poultry-yard, is materially conducive to health. The ashes and litter should be frequently changed, and had better also be kept in little *trenches*, in order that they may not be scattered about, giving a dirty or untidy appearance to the yard. When, however, your fowl have a run in a garden or field, of average extent, this *artificial* care will be replaced by nature.

If the court be not supplied with a little grass-plot, a few squares of fresh grass sods should be placed in it, and changed every three or four days. If the court be too open, some bushes or shrubs will be found useful in affording shelter from the too perpendicular beams of the noon-day sun, and probably in occasionally screening the chicken from the rapacious glance of the kite or raven. If access to the sleeping-room be, as it ought, denied during the day, the fowl should have some shed or other covering, beneath which they can run in case of rain: this is what is termed "*a storm house;*" and, lastly, there should be a constant supply of *pure, fresh water.*

Fowl frequently suffer much annoyance from the presence of vermin, and a hen will often quit her nest, when sitting, in order to get rid of them. This is one of the uses of the *sand* or *dust* bath; but a better remedy, and one of far speedier and more certain efficacy, was discovered at Windsor by Mr. Engal, her Majesty's feeder. The laying nests at Windsor, were, when under his care, composed of dry heather (Erica tetralix), and small branches of hawthorn, covered over with white lichen. These materials, rubbed together by the pressure and motion of the hen, emit a large powder, which, making its way between the feathers to the skin, is found to have the effect of dislodging every sort of troublesome parasite.

The fowl-house should also be frequently and thoroughly cleaned out, and it is better that the nests be not fixtures, but formed in little flat, wicker baskets, like sieves, which can be frequently taken down, the soiled straw thrown out, and themselves thoroughly washed: or formed of wooden boxes, as recommended by Mr. Donaldson, with a sliding bottom. In either case hay is objectionable, as tending to the

production of these vermin. Fumigation, at no very remote intervals, is also highly to be commended. Nothing is of more importance to the well-being of your poultry than a good, airy walk. These maxims cannot be too often impressed on the poultry keeper.



A. Night lodge for the fowl.
A. Ditto for the turkeys.
A. Do. for geese and ducks.
B B. Garden or walk for all the fowl. C. Gravelled Path. D. Water Tank.

MY OWN POULTRY-HOUSE.

The above cut is intended to represent the ground plan of a poultry-house I had some years ago. At present I use, for the purpose of keeping poultry, three out-houses, entirely built of masonry, with well secured doors. The fowl are shut into these at night; the doors, are, however, open all day, and the laying nests are on the ground: during the day they have a yard and garden in which to roam. The latter is about thirty yards in length by six in breadth, and is *always kept planted* with such vegetables as the fowl might like to peck, not forgetting *Italian rye-grass*, which is most valuable. Of course, when a person wishes to keep fowl, and has but *one* garden, he must *sacrifice* the latter. I find it easy, by *proper fencing*, to confine my fowl to the "*run*" allotted to them, and thus prevent their trespassing on ground where their presence might be objectionable.

THE COTTIER'S POULTRY-HOUSE.

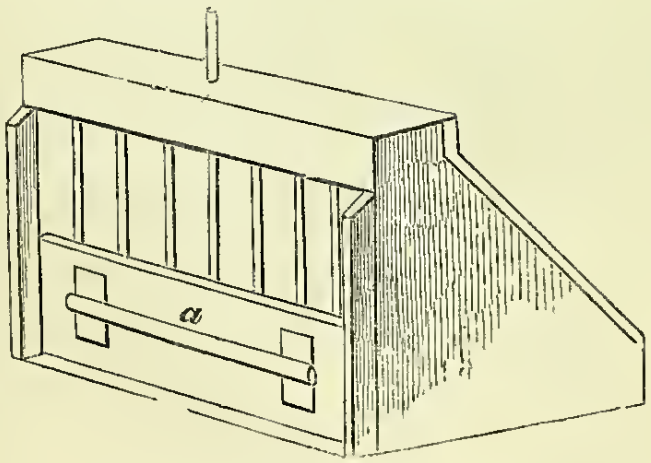
As good a mode of rearing fowl as can be adopted is the old custom of suffering them to roost on the rafters of the room in which the cottier keeps his fire; and it is, perhaps, owing to the warmth thus afforded to the birds, that, during winter, when eggs are scarce, and consequently at a high price, they will be procurable from the humble cabin, when they have long vanished from the elaborately-constructed, but less *warm* poultry-house of the more affluent fancier.

Should circumstances, however, render the keeping poultry in the cabin objectionable or unadvisable, a very sufficient place may be erected for them against the outside of the cabin wall; and, if possible, the part of the wall against which the little hut is erected should be that opposite to the fire-place within—thus securing the necessary

warmth. If shelter be required, it can be obtained by means of a few bushes, or a wall of sods; the neighbouring roads will serve as an ample walk; the nearest stream will slake their thirst. A few laying-nests may be placed in a warm corner of the cabin, and the poultry of the poor cottier will thrive as well, and yield as great a profit, as those kept in the best appointed establishments in the kingdom.

In the *Cottage Gardener* for last July, Martin Doyle describes and figures two hen-coops, of the use of one of which I here avail myself. "Though so many more fowl," he says, "are reared by the peasantry of Ireland than by those of England, it is a fact, that coops—for the occasional confinement of the hen and the protection of the chickens, so common in England—are scarcely known in many parts of Ireland. The reason probably is, that the floor of the cabin in the latter country is the privileged place of retreat for young poultry, when they require shelter from a passing shower or from strong sunshine. In fact, a cabin itself is the coop, but as its scale is too large for the purpose required, and inconvenient in some respects, the true coop is a desirable substitute. We accordingly give here a sketch of one of the most approved construction and dimensions.

"By confining a hen some hours in the day to the coop, she is prevented from rambling into danger, and yet has the liberty of enjoying fresh air, and the pleasure of seeing her chicks run in and out through the bars, returning to her when her voice warns them to seek shelter with her in the friendly coop, on the approach of a shower or of any other danger. The instincts of the young birds will generally lead them to obey her voice, even though it be that of a step-mother. At night they may be closed in by means of the shutter, *a*."



CHAPTER III.

HOW TO FEED YOUR POULTRY.

Do not feed your hens too highly before they begin to lay, or while laying, or immediately after ceasing to lay, unless you wish to fatten them for table use; for as soon as a fowl begins to fatten she stops laying. You must, therefore, separate the two classes of fowl, layers and fatteners, at all events at feeding time. Make some separate provision for your cocks; if they are only fed in company with the hens, they are apt to think too much of their mistresses and to neglect their own appetites; and recollect that to have *strong* chickens, you must have strong cocks, which an ill-fed bird cannot be expected to prove. You should also make separate provision for such fowl as are bullied or oppressed by the rest. Fowl are much given to *jealousy;* the *cock's favour* is sometimes the cause of this, but by no means invariably so, and, indeed, the cause is not at all times to be ascertained; however obscure the *cause*, it is incumbent on the poultry fancier to prevent the *effect*, by adopting the separative system at the times I have indicated. I myself have met with instances of a cock forming a partiality for a particular hen, and curiously enough I never knew an instance of this, in which the favoured hen was not the ugliest, commonest, and sometimes the oldest in the yard.

In such an occurrence, which is easily recognizable by the cock's continually running at that particular bird, to the neglect, or comparative neglect of the others, it is better to remove the favourite *at once;* if you do not do so, quarrels will ensue; this hen will nearly always be made a victim, and in many cases the quarrels on her account will give rise to other and more general affrays. On such occasions the cock usually interferes and endeavours to establish peace; he almost invariably does so when the contest is carried on *per duello;* when, however, a number of his mistresses fall upon one, his interference is of little avail; and, as if he were conscious of this, in such cases he usually leaves the poor favourite to her fate. I would not be so minute, but that I feel that these remarks, the result of long observation, will interest the naturalist as well as the mere poultry fancier. I have also known a cock to take a *dislike* to a particular hen; and in one instance he did not desist from his persecution till the poor thing died. This is a much more rare case than the preceding, and I have no doubt of its cause; it is this: when a vigorous, healthy cock is mated with *very few* hens, he is very persevering in

his attentions to them: when hens are in *moult* they will not accept of any such attentions. In most instances of this kind that have fallen under my own observation, I have found the hen thus victimized by her lord to have been moulting, and to have incurred his hatred by a refusal of conjugal rights. The cock will sometimes fall upon a hen newly introduced into your yard, especially if of a different colour from his other mates. This recently occurred amongst my own fowl, they being chiefly black Spaniards, and the new hen a yellow Hamburgh. I tried the experiment of colouring the latter black; the cock no longer beat her, and he did not seem to notice the subsequent gradual renewal of the yellow as the black wore off. This, however, is neither telling you *how to feed* nor what *to feed on*. I now come to that.

Fowl about a farm-yard can usually pick up a portion of their subsistence, and that probably the largest portion, and, of course, in such situations poultry-keeping decidedly *pays best*. I must, however, particularly caution my readers against *depending* for the support, even of their *non-fattening* poultry, wholly upon such precarious resources, and I shall, accordingly, proceed in my advice as if no such resources existed.

The substances that may be used in poultry feeding are very numerous and various—cabbage, rape, turnips, carrots, parsnips, mangel-wurzel; oats, wheat, barley, rye, and other grains, substances too well known to require, and too numerous to be worth the trouble of enumerating. It will not answer to feed fowl wholly upon *any one variety* of food; neither will it be found advisable to feed wholly upon any one *class* of food. I must speak of the latter point first. Fowl require a mixture of *green* food with *hard* food, fully as much as horses or cattle do. When the birds have the advantage of an extensive walk, they will find this for themselves; when they do not possess such an advantage, you must provide green food for them. Some do so by providing the birds with cabbages or other greens *chopped small*. My plan is to *fasten* heads of cabbages, lettuce, rape, or other green herbs, to some fixture, by means of their roots, and to let the fowl peck for themselves. This practice not merely prevents waste, but is, in consequence of the *amusement* it affords, decidedly conducive to health. When you find it difficult to obtain green food, you will find that *turnips* will answer equally well: the best descriptions are the *Swedish* and the *yellow Aberdeen*, and they are also the cheapest. To prepare these they should be sliced one way, and then sliced across, so as to be cut into small *dice*, each dice being not more than *two lines* square. This

is *troublesome*—granted; but no man deserves to have a good stock of poultry, or anything else, if he declines taking trouble. If it be necessary to employ hired labour for the purpose, the stock must be very large, and will unquestionably pay. The same yellow turnips, boiled soft, and mixed with bran or pollard, or given by themselves, are also capital feeding, especially for a *change*. Carrots and parsnips are usually too marketable for other purposes, which will pay better, to be spared for poultry feeding; the smaller, refuse ones, may, however, be used for this purpose, prepared in either of the modes recommended for yellow turnips. Of *mangel*, as food for poultry, I cannot say much, valuable though it decidedly is for other purposes; the birds do not generally like it, and I have found that, even where they do eat it, it does anything but promote their laying; oats are useful as forming a *portion* of fowl's feeding; but it will not answer for keeping them upon altogether; the *hulls* are very indigestible, and this food is, besides, of too *stimulating* a nature; when oats are to be had for about 2s. 3d. the bushel of 40 pounds, a few handsful are well spent on your fowl; when, however, they are above *twenty shillings* a quarter, their *paying* is very questionable; at present, I find that moderate use of them pays very well. When *damaged* wheat can be bought at a low price, it may be used for the feeding of poultry with much profit and advantage; when no such thing can be procured, however, and when it is proposed to feed them upon the sound, marketable article, turn a deaf ear to the thoughtless adviser. The same may be said of *barley*, which is also objectionable as acting in a *purgative* manner—it is useful as an occasional feed, when fowl are overfed. *Rye* is usually a cheaper description of grain than any other, and *damaged rye* may be used, to a limited extent, with impunity, even when affected with the *ergot* (Secale cornutum), which exercises so powerful an influence upon the systems of all female animals possessing a uterus. As this same *ergot*, however, is frequently the cause of severe illness when human beings happen to eat bread made of rye tainted with it, poultry should not be suffered to eat *too freely* of it.

The sweepings of corn markets, consisting of all kinds of grain may frequently be purchased from the beadles on cheap terms, and are well suited for poultry, but, if given to fowl, the peas and beans must be sifted out.

I do not think that one circumstance connected with the feeding of poultry, and that a most important one, is sufficiently well known —I allude to the necessity they are under of obtaining *azotized*, or in

other words *animal food.* Of course, when the birds possess the advantage of an extensive run, they can themselves peck up insects, worms, snails, or slugs; and as in the case of ducks, &c., frogs and other small reptiles; but in cases where they do not possess this advantage, it is necessary that you cater for them. I have always experienced the best effects, especially as manifested in greatly increased *laying*, of giving scraps of animal food about twice or thrice a-week to the fowl; I have also found the best mode of doing so to be, throwing down a bullock's liver, leaving it with them and permitting them to peck at it *ad libitum.* This I consider to be better in a raw than in a cooked state.

In winter, in order to supply the place of the insects and other animal food they can peck up in summer, I give them once a week fat gut (sheep's entrails) boiled and peppered, together with any meat bones to peck, and also barley made hot in a saucepan without water and given warm. Hot potatoes are always good food, small potatoes may be picked out, and steamed for the purpose, if you keep a garden. But meat is indispensable, if you wish to have eggs in winter. Since the repeal of duties on corn it may be as well to state that in the south of Europe, and America, and Australia, Indian corn or maize is the common food of poultry. Here, unless accustomed to it young, they often refuse it. Nothing is so subject to weevil as Indian corn, and, unless perfectly sound, fowl will not touch it.

Several substances have been at different times recommended as calculated to increase the fecundity of the various classes of the feathered inhabitants of the farm-yard, amongst these, perhaps, hempseed and buckwheat are pre-eminent. There can exist no doubt of the peculiar efficacy of these seeds in this respect when *properly used*, but neither can it be denied that in some cases this *objectionableness* is undoubted. I do not speak at random, having had *practical* proof of what I am advancing.

When a hen *pines*, or seems disposed to be *thin*, you need not hesitate in giving buckwheat with even a liberal hand; but you must so manage as not to permit such hens as are disposed to become *too fat* to share in this department of your bounty. According as hens take on fat they usually fall off in laying, and this should be particularly kept in mind in feeding. When hens are disposed to flesh, you will find *hempseed* the best promoter of laying; at the same time it will be necessary that you *restrict* them as respects other descriptions of food, fattening and laying being nearly always incompatible with each other.

Fowl of all kinds require *sand* or *gravel* as an aid to digestion, being, in fact, necessary to promote a medium of *trituration* in the gizzard, as well as to supply calcareous *matter for their egg-shells*. You should, therefore, always have a supply placed within their reach. This, I must admit, applies more immediately to such fowl as are kept in a confined yard; when the *walk* is at all extensive, the birds can usually peck up enough for themselves. Fresh-water gravel is the best; and if you live near the sea, and wish to use sand so easily obtainable from the beach, you should first wash it in two or three waters. Where no sand of *any kind* can be obtained, as in towns, you can buy *chalk*, *bruised oyster shells*, or *freestone;* if the *latter*, you had better wash it well first: you will, of course, *pound* before placing it in the yard.

I have observed that fowl require a *varied dietary*. I may better illustrate my meaning by a description of my own method of feeding for a single day:—

In the morning, about seven o'clock, in spring and autumn, but at six in summer, I let the fowl out, and permit them to roam about till *nine*, when I give *grain*, to the amount of about a *handful* to every three birds; they then amuse themselves about the place till evening, during which time they peck up a good deal; about three o'clock I feed them again on *grain* to about the same amount, besides which I give whatever potato, turnip, or other refuse is going. The *liver* lies in the yard, and they get green feeding for themselves. In *winter* the affair assumes another aspect; all feeding, but more particularly the *grain*, must be greatly increased in quantity. As you now cannot procure *green food*, or at least can only do so with difficulty, and at an expense that will seldom pay, you should resort to the *chopped turnips*.

Cayenne pepper; indeed, all descriptions of pepper, especially the Cayenne in *pods*, will be found a favourite with fowl, and will be greedily devoured by them; it acts as a powerful stimulant and remarkably promotes laying, and, when mixed in a *ground state*, with boiled oatmeal, or, as we call it in Ireland, "stir-about," will be found productive of the best effects. In this, however, as in everything else, let *moderation* be your ruling principle. Pepper will be found particularly useful in feeding young *turkeys*, as, indeed, are all stimulating vegetables, amongst which I may mention *nettles*, *horse-radish*, and *water-eress*. Geese and ducks will eat greedily—and so, indeed, will your other fowl—of cabbage or other greens boiled and *hand-bruised* with bran or pollard; a little pepper added to this forms a valuable dietetic.

A different system should be adopted in treating poultry for the table, and for the laying and breeding department. The great secret of having fat chickens, and the same may be said of ducks, geese, and turkeys, is never to let them be thin. But, to fatten, you may either enclose them in a small space, or absolutely coop them up. Coops should be placed in a warm—rather dark place; be high and large enough for each fowl to be comfortable without moving about, not more than three fowl in each division, so that they can see without touching each other; the back part of the floor should be grated to allow the dung to fall through, and this must be removed every morning. The troughs are generally made too low; they would be better, raised an inch; and, instead of wood, I recommend coarse pottery or glass, both of which are very cheap now, and can be easily kept clean. Starve the fowl for a few hours after cooping, and then supply them frequently, and at regular intervals, with as much food as they will eat, and no more, clearing the trough each time after they have fed. Give very little water. Rice boiled dry as for curry, that is to say, a small portion only either of water, milk, or butter-milk, will be found very fattening; and by a constant variety of food, the fowl will be induced to eat, and ought to be quite fat in a fortnight.

But above all, it must be remembered, that to do any good, chickens put up for fattening, require regular attention, and at stated hours.

CHAPTER IV.

THE ORIGIN OF OUR DOMESTIC FOWL.

The Domestic Fowl, styled by zoologistists *Gallinæ*, from the Latin word *gallus*, a cock—is distinguished by having the crown of the head usually naked and the skin raised in a fleshy protuberance, called a comb—a protuberance varying in size and form in different varieties. The base of the lower mandible (beak) is likewise furnished with fleshy, lobular appendages, called *wattles;* the tail is carried erect, and is composed of two planes folded together at acute angles. In the male, the central feathers of the tail are elongated, and fall gracefully over the others. The feathers of the neck are ample in quantity, are either long and hackled or short and truncated. The plumage of the male bird is characterized by considerable brilliancy and beauty; that of the female is unobtrusive, matronly, and comparatively dull.

The pheasants have, on the other hand, their tail feathers long and

vaulted, the two intermediate quills longer than the lateral ones; and the cheeks covered with a soft and velvety tissue of very short feathers. Their constitution is also very delicate, and it is only by employing great care and caution that they can be induced to breed in a state of domesticality; the cock tribe, on the other hand, is extremely hardy, and endures all changes of temperature and climate with impunity, as is proved by these birds being found to exist in nearly every country of the world, from the warmest to the coldest zone.

The domestic cock appears to have been known to man from the very earliest period. Of his real origin little appears to be known, and the period or manner of his first introduction into Greece, or southern Europe, is involved in the greatest obscurity. The cock has certainly ever held a prominent position among birds; he occupied a conspicuous place at the shows of the Greeks and Romans in the days of old; his effigy was engraved, and is still to be seen upon many of the medals and coins; and he has been expressly dedicated to several of their favourite deities—as Apollo, Mercury, Mars, and Æsculapius. The wisest heathen that ever lived—the profoundest philosopher that ever flourished unaided by the light of Christianity—the great SOCRATES—forgot himself in his moments, and suffered the mire of superstition to tarnish the glorious wreath that wisdom had hung upon his brow, by directing a *cock* to be sacrificed to Æsculapius.

At a Roman banquet this bird formed a principal dish, and poultry were even then carefully reared and fattened, as well as *crammed.* Nor was the pugnacious disposition of the cock even then unknown, or lost sight of, as a means of amusing man; for cock-fighting was seriously entertained and encouraged as at once a religious and a political ceremony. The islands of Rhodes and Delos are said to have furnished the fattest birds for the table, as well as the most enduring and unflinching champions of the ancient cock-pit.

I have said that cramming was resorted to in ancient times, and my inference is justly enough deduced from reading of stringent laws for the suppression of the practice; nor does the mode of operating appear to have differed greatly from that practised in our days; at all events, the appetite of the birds, and the advantages to be derived from feeding in a dark place, were all well understood. Witness the words of the Roman poet—

> "Pascitur, et dulci facilis gallina farina,
> Pascitur et tenedris, ingeniosa gula est."
>
> MARTIAL, xiii. 62.

In France the practice of cramming is quite common at the present

day; for this purpose a machine is used, constructed somewhat on the principle of the forcing pump, by which one man can cram fifty birds in half an hour. In operating, the throat of the bird is held until the bird is gorged through a pipe, which forces the food from a reservoir. In fifteen days the fowl attain the highest state of fatness and flavour by this system.

It is strange that a practice so barbarous as that of cock-fighting should owe its origin to classic times, and to one of the most learned and enlightened nations of antiquity—the GREEKS. It was introduced into these islands by the Romans, and it was, perhaps, the occasion of making us acquainted with the domestic fowl. For a long period cock-fighting was practised in England as a royal pastime, and exhibited as such before public assemblies with pomp and show, and it continued to be sanctioned, both by law and custom, until about 1730. Up to this time it was—I suppose in allusion to the well-known connection this bird had with St. Peter's denial of our Saviour—a favourite amusement at or about Shrovetide, and was even in vogue at public schools, with the express sanction of the schoolmaster, who furnished the boys with cocks for the purpose.

There were also, until very lately, two other barbarous amusements practised amongst us, in connection with this bird. One was styled "throwing at cocks," in which short sticks were flung at the bird, which was securely tethered to a stake, and he who knocked down the cock so effectually that he was able to secure the poor bird before it could rise, had it for himself; in this game three throws used to be allowed for twopence. The other barbarous practice to which I allude was "threshing the hen." In this case a man had a hen tied round his neck, and was pushed round a room or barn by the *players*, who were previously blindfolded, and provided with sticks, with which they struck at the bird until he expired; when killed, it was dressed, and, with pancakes and fritters, furnished a supper for the assembled party.

However much the cock has occasionally suffered, he has, on the other hand, to boast of having ever been regarded as a bird of the very highest consequence and respectability. He enjoyed the privilege of reclaiming St. Peter, when his voice reminded the saint of the warning of his heavenly Master. From time immemorial his "shrill clarion" has "ushered in the morn;" and he has likewise had consigned to him the important power of dismissing ghostly visitants to their more appropriate dwelling in the tomb. The ghost of Hamlet's father, about to make a most important disclosure to his loving son, suddenly hears the *crowing* of the *cock*, on which he announces no less abruptly

that he "snuffs the morning air," and, leaving half his say unsaid, returns incontinent to all the gloomy and unrevealed horrors of his mysterious prison-house. As Shakespeare so beautifully writes, too, the office of cock-crowing is likewise, at a certain season, rendered still more important—

> "Some say that ever against that season comes,
> Wherein our Saviour's birth is celebrated,
> The bird of dawning singeth all night long;
> And then, they say, no spirit walks abroad.
> The nights are wholesome—then no planets strike,
> No fairy takes, nor witch has power to harm;
> So hallowed, and so gracious is the time."

As I have already observed, to pronounce with any degree of certainty, as to the original country of the domestic cock, or to refer *positively* to *what known* wild species we are to look for his primitive type, would prove a labour equally difficult and presumptuous, the date of his original domestication belonging to so remote a period as to be now wholly lost; but I can, I think, nevertheless, without presumption, describe those races of poultry that, still possessing a wild and apparently truly feral type, would seem to afford the strongest evidence of originality.

Several authors of the highest respectability and most unquestionable erudition—among whom I may name the Compte de Buffon and M. Sonnerat—have endeavoured to show that all the varieties of domestic fowl with which we are now acquainted sprang originally from one primitive stock. This opinion has obtained many advocates; and I may, indeed, here remark, that zoologists are, in general, apparently possessed with an anxious desire to curtail, as much as possible, the number of primitive types whence the several races of animals have sprung; with poultry, however, this desire must be frustrated. Dampier saw wild hens at Puloncondar, Timor, and St. Jago. Sonnini describes wild cocks which he saw in the forests of South America. M. Temminck procured wild cocks from Java, Sumatra, and Ceylon; and all these birds differed essentially, in character and appearance, from all our then-known domestic races—from those found by Sonnerat in the Indies—and, finally, from each other. And, be it remembered, that this statement, like many other novelties, though scouted at the time by Sonnerat and others, who, bigoted to their own pre-declared opinion, were, of course, interested in their contradiction, have since been amply and authoritatively confirmed.

I have neither the wish nor the intention to waste my own time,

or that of my readers, by entering upon the useless, unsatisfactory, and often interminable paths of controversy. I have formed my own opinion, and that after diligent reading and research, during which I carefully investigated all the arguments advanced on either side of the question; this opinion I consequently deem to be correct, and shall, without further comment, present it to my readers.

It has been very generally supposed, and most commonly asserted, that the domestic cock owes his origin to the Jungle fowl of India. I hold that he does not—that he, in fact, differs as much from that bird as one fowl can well differ from another; they will certainly breed together, but so will the hare and rabbit.* Read, however, the following description of the Jungle fowl, and, if you can, point out its counterpart among our domestic stock:—

It is about one-third less than our common dunghill cock, being (the comb not included in the measurement) about twelve or fourteen inches in height. The comb is indented, and the wattles certainly bear some slight resemblance to those of our common cock; but the naked parts of the head and throat are much more considerable. The feathers of the head and neck are longest on the lowest parts, and differ both in structure and aspect from those of other cocks, whether wild or tame. The Jungle hen is smaller than the cock, has neither comb nor wattles, and the throat is *entirely covered with feathers*—a very remarkable distinction from our domestic hens. The space round the eyes is naked, and of a reddish colour; the under parts are furnished with plumage, similar to that of the same parts of the cock; but, in addition to these peculiarities, the Jungle cock possesses still another which, however, the hen does not share with him—viz., the mid-rib, and stem of a portion of the feathers is considerably expanded, forming a white stripe along the whole feather, as far as the tip, where it expands, becomes broader, and forms a gristly plate of a rounded form, whitish, thin, and highly polished; this gristly substance is still more remarkable on the wing feathers than on any other part, the tip, indeed, of the wing feathers forming a less brilliant plate, solid as horn, and as firm and unyielding to the touch. These plates are of a deep red colour, and by their union, form a plate of red maroon, which looks as if it were varnished. There are, however, two wild-cocks in which we find sufficient points of resemblance to our domestic varieties, and these answer the purpose of terminating our somewhat unsatisfactory search.

I allude to the gigantic bird of St. Jago and Sumatra, and to the

* Philosophical Transactions.

diminutive denizen of the wilds of Java. The reasons for supposing these two birds to be the veritable originals of our domestic poultry, may be summed up briefly thus:—

I.—The close resemblance subsisting between their females and our domestic hens.

II.—The size of our domestic cock being intermediate between the two, and alternating in degree, sometimes inclining towards the one, and sometimes towards the other.

III.—We are led to this conclusion by our observations, relative to the nature of their feathers, and their general aspect, the form and mode of distribution of their barbs being the same as in our domestic fowl.

IV.—In these two birds do we alone find the females provided with a crest and small wattles, characteristics not to be met with in any other known wild species. You will meet with these characteristics in the highly-bred Spanish fowl.

Notwithstanding these analogies, however, domestication has so changed the form of the body, and of its fleshy appendages, that we might find it rather a difficult task to refer any modern individual variety to its primitive stock: we must, in order to understand fully the causes that produce this difficulty, recollect the constant, and frequently careless, crossing one bird with another, and the very frequently *promiscuous* intercourse that takes place in a state of domesticity, taking, likewise, into consideration changes of climate, variety of treatment, and numerous other causes.

We cannot, however, find any difficulty in at once recognising the large and powerfully-limbed BIRD of ST. JAGO and SUMATRA, the appropriately styled "Gigantic Cock," or *Gallus giganteus* of zoologists, as the original type to which we owe the Paduan and Sancevarre varieties.

To the more diminutive BANKIVA cock, we are, on the other hand, indebted for the smaller varieties, improperly designated Bantams, and, the so-called, Turkish fowl. By crossing, peculiarities of climate, management, &c., have been produced from these:—

I.—The cock with small crest and wattles, furnished, also, with a tuft of feathers, which some writers have supposed to be produced by the juices that ordinarily go to furnish nourishment for the comb taking another form, and developing themselves in the production of the tuft. These approximate most nearly to the original Sumatra stock, and we may recognise their domestic representative in the varieties of the Polish breed.

II.—The ordinary village cock, provided with comb and wattles, but no crest or tuft of feathers; this seems the intermediate variety.

III.—Diminutive cocks, ordinarily known as BANTAMS, with, in some varieties, the tarsi and toes covered with feathers; but this is not invariably the case.

I should here describe the two races to which I have stated it as my opinion, that we are indebted for our domestic varieties.

The wild cock, justly termed the "Gallus giganteus," and called by Marsden the "St. Jago Fowl," is frequently so tall as to be able to peck crumbs without difficulty from an ordinary dinner-table. The weight is usually from ten to thirteen or fourteen pounds. The comb of both cock and hen is large, crown shaped, often double, and sometimes, but not invariably, with a tufted crest of feathers, which occurs with the greatest frequency, and grows to the largest size in the hen. The voice is strong and very harsh, and the young do not arrive at full plumage until more than half grown.

There was, some years ago, in the Edinburgh Museum of Natural History, and probably still is, a very fine specimen of the St. Jago Fowl; it was said to have been brought direct from Sumatra, and, in most respects, closely resembled the common large varieties of domestic cock. In this specimen the comb extended backwards in a line with the eyes; was thick, slightly raised, and rounded on the top, almost as if it had been cut; the throat bare, and furnished with two small wattles. The neck and throat hackles of a golden reddish colour, some of them also springing before the bare space of the throat; the hackles about the rump, and base of the tail, pale reddish yellow, long and pendent; the centre of the back, and smaller wing coverts, of a deep chestnut brown, the feathers having the webs disunited; the tail very full, and of a glossy green colour. The greater wing coverts of a glossy green, with the secondaries and quills of a faint golden yellow; under parts of a deep, glossy, blackish green, with the base of the feathers a deep chestnut brown, occasionally interrupted, so as to produce a mottled appearance. This bird measured very nearly thirty inches in height, comb included, and making allowance for the shrinking of the skin; the living bird must have been upwards of thirty-two inches high.

The Bankiva fowl is a native of Java, and is characterized by a red, indented comb, red wattles, and ashy-grey legs and feet. The comb of the cock is scolloped, and the tail elevated a little above the rump, the feathers being disposed in the form of tiles or slates; the neck feathers are gold colour, long, dependent, and rounded at the

tips; the head and neck are of a fawn colour; the wing coverts a dusky brown and black; tail and belly black. The colour of the hen is a dusky ash-grey and yellow; her comb and wattles much smaller than those of the cock, and, with the exception of the long hackles, she has no feathers on her neck. These fowl are exceedingly wild, and inhabit the skirts of woods, forests, and other wild and unfrequented places. These Bankiva fowl are very like our Bantams, and, like those pretty little birds, are also occasionally to be seen feathered to the feet and toes.

CHAPTER V.

SELECTION OF STOCK, AND CHOICE OF COCK AND HENS FOR SITTING.

COLUMELLA is, perhaps, among the earliest authorities we can cite on the subject of the breeding and management of poultry, and he thus delivers himself on a very important subject, viz., the number of hens to be allotted to each individual cock:—

"Twelve hens shall be enough for one good cock, which will cause the progeny to be more of a colour; but yet our ancestors used to give only five hens to one cock, thus producing a diversity of colour. To have the hens all of one colour is preferable, some white, and these are considered the best layers."

Bradly, in his *Farmers' Director*, advises one cock to be left with seven or eight hens, and hints that if a greater number be allowed him, the eggs will not prove fertile. The author of the *Complete Farmer*, and the writer of the article on poultry, in *Rees' Encyclopedia*, recommend the same number.

M. Parmentier, a very eminent French writer, says, that one cock is *much more* than sufficient for fifteen, or even twenty hens, provided he be a young, vigorous, and healthy bird.

Those who breed game fowl for combat, and whose object is, of course, the production of strong chickens, limit the number to four, or at most five. Mr. Mowbray says, that in winter, or cold and damp weather, a cock should only have four hens. M. Bose (*Encyclopedia Methodique*) says, that in spring alone should any cock have fewer than twenty hens. M. Dickson says, that the number of hens allowed to one cock should vary with the object you have in view; and Mr. Nolan, a most excellent judge, thinks that in order to secure a prime breed, a cock two years' old should not have more than five hens.

If you look for profit to the production of eggs alone, I should say that one cock—if a stout, young, and lively bird—may have as many as twenty-four hens. If, however, you want to obtain strong and thriving chickens, you must restrict him to six, or at most, eight. If your object be the improvement of a worn-out or degenerate breed, the fewer hens you allow to one cock the better, and you should not, at any rate, allow him more than three.

As to the selection of a good cock, Columella thus instructs us:—"It is not good to keep a cock if he be not stout, hot, and knavish, and of the same colour as the hens are, and with as many claws; but in his body to be higher raised, his comb to be high and red as blood, and straight withal; his eyes black or azure colour; his beak short and crooked, with a grey crest, shining like red or white, and all his feathers, from the head to the breast, to be of a changeable colour, varying like gold or yellow; his heart large and big; his muscles on his wings big like one's arm, with long wings; his tail fair and long, with two ranks of crooked and rising feathers; and to be oft crowing is a sign of lusty courage. The red colour is thought to be the best cock; his legs short and strong, his thighs great and thick, and well covered with feathers, and his legs armed with long spurs, rough and pointed—straight in body, light, fierce, eager in battle, vigilant, ready, and often crowing, and not easily feared."

Markham, in "*Cheap and Good Husbandrie*" (p. 138), almost repeats the directions of Columella *verbatim*, and guarantees their correctness with the authority of his own opinion.

M. Parmentier recommends the cock to be chosen of a middling size, carrying the head high, having a quick, animated look, strong, shrill voice, short bill, very red comb, large wattles, broad breast, strong wings, black or dull red plumage, thighs muscular, spurs strong, claws bent and sharp, free in his action, a frequent crower, and frequently scratching the ground in search of worms, not, however, for himself, but to treat the hens.

Not to weary my readers with an unnecessary citation of too many authorities, I may just observe, for their direction, that the cock should be *in perfect health*; feathers close and rather short, chest compact and firm; full in the girth; lofty and elastic gait; thigh large and firm; beak short, and thick at its insertion.

Next to health and strength, age is to be duly considered. Neither select a cock that is too old, nor one that is too young; let the age be from a year and a half to three years and a half. Some cocks retain their vigour till they are even past six years old, and some make a

display of unquestionable virility at the premature age of five or six months. It is far better, however, for the fancier "to be sure than sorry." Secure a young and vigorous bird at the summit of his prime, steer equally clear of premature and often deceptive developments, and of incipient age and decrepitude—avoid all extremes.

Mascall, following Columella and Stephanus, says—"The signs of a good hen are these—a tawny colour or a russet are accounted the chiefest colours; and next, those hens which have the pens of their wings blackish, not all black, but partly so. As for the grey and the white hens, they are nothing so profitable."

Markham tells us that we must lay even more stress on the selection of a hen than on the choice of a cock, and insists on "grey, grissel, speckt, or yellowish—black or brown is not amiss."

These directions may have been all very well in olden times, ere the many new and valuable varieties of fowl now known were familiar to the poultry-yard, but as far as colour is concerned, they can no longer be followed, unless with respect to the common Dunghill breed. Among these latter you may, of course, make what selection you please as to colour, but the more valuable and distinctly marked varieties have each its own hue, and you must, consequently, just take them as you get them. Perhaps the best mode of forming a conclusion as to the most profitable colour would be to keep a memorandum-book, and to enter regularly the age, colour, and every other particular connected with your hens; and, of course, keep also a correct account of their proceeds, whether as to eggs or chickens. The average of a year's experience might lead to some satisfactory conclusion.

The *disposition* of the cock and hens should likewise become a subject of careful observation. Some cocks are of an unsocial, *unconjugal* disposition—will persecute and maltreat their hens, and will, if even they leave *them* alone, direct their domineering practices towards the younger inmates of the poultry-yard.

It is often necessary to change the cock, or replace one removed by death, and I must caution my readers to manage this with the utmost possible circumspection. Poultry, although naturally gregarious, are by no means indiscriminate in their attachments, and hens will not, in every instance, admit the company of a new husband when his predecessor has been removed. M. Reaumur relates a very striking instance of the caprice hens occasionally exhibit. In one of his coops he kept two hens and one cock; the two hens, after having lived for a very long time on a perfectly affectionate footing with their companion, and after having laid eggs rendered productive by him, sud-

denly conceived for him an unconquerable aversion, and never ceased peeking him, until they stripped his head of feathers, and made it bleed, while the poor fellow bore their attacks most patiently, and not only never acted on the offensive, but scarcely even endeavoured to avoid their fury, until, at length, after a savage persecution for five or six days, they killed the poor creature outright. M. Reaumur substituted, in the room of the slain bird, a young, vigorous, and strikingly beautiful cock; but this experienced no greater mercy, and would also have been killed had he not been removed. Two other cocks, subsequently introduced, met with no better treatment. The hens appeared, in short, to have taken a vow to celibacy; and no artifice could induce them to abandon their singular conduct.

Sometimes you will suffer annoyance from the pugnacity of your cocks. This pugnacity is said to arise from an unusually amorous temperament, and a consequent jealousy of disposition. Mascall, or rather his original, Columella, recommends, as a cure for this—"To slake that heat of jealousie, he shall slitte two pieces of thick leather, and put them on his legges, and those will hang over his fecte, which will correct the vehement heat of jealousies within him." And M. Parmentier confirms this direction, adding, that "such a bit of leather will cause the most turbulent cock to become as quiet as a man who is bound hand and foot."

Although the cock can by no means boast much of the melody of his voice, he will on no account suffer himself to be *out-crowed* if he can help it; hence, you may observe a cock pause after each crow, in order to ascertain if he be answered by a rival, and the succeeding vocal attempt will, if possible, be yet louder and more discordant.

Cocks and hens are both fond of cleanliness and order in their *plumage*, and are, especially the former, constantly pecking and pruning their feathers. It was formerly, but erroneously, supposed, that during this process an oily fluid, secreted in the gland near the tail, was extracted from its receptacle by the pressure of the beak, and then disseminated over the remainder of the plumage, as a process necessary to render the feathers waterproof. In order to dissipate this illusion, I need only observe, that the *tail-less* fowl, though they are destitute of that part of the body where this gland is situated, and have, consequently no oil to extract, go through precisely the same process of pecking and pruning, and their feathers are just as much waterproof as those of any other fowl. In my opinion, this fondness of pecking and pruning is partly a provision of nature, designed to relieve some irritation in the skin, and thus conduce to health, and

partly proceeds from a pure love of cleanliness and regularity in the plumage, inherent in all varieties of fowl.

In the choice of a hen for setting, look for a large bird, with large, wide-spreading wings. Though *large*, however, she must not be heavy, nor *leggy*. No one of any judgment would set a Malay hen, as, in such case, not only would many eggs remain uncovered, but many, also, would be trampled upon and broken. Elderly hens will be found more willing to sit than young and giddy pullets; indeed, the latter should never be allowed to sit, until, at least, the second year of their laying.

The Spanish fowl are not generally good sitters; but they are excellent layers. The Dorking reverse the order, being better sitters than layers; and these qualities will also be found to extend pretty generally to hens partaking of the prevailing colours of these two varieties, the black being usually the best layers, and but careless or indifferent sitters; while grey or chequered hens (especially such as have light coloured legs) are the best you can procure for sitting hens.

You will be informed of a hen's anxiety to sit, by a peculiar change in her voice to a distinctive *cluck*, which continues, even after hatching, until the chickens no longer require her maternal care. The heat of the hen's body is also materially increased; hence, when it is desired to check a hen's anxiety to sit, the common practice for allaying this heat is immersion in cold water.

If you entertain doubts of the steadiness of the hen you desire to set, try her constancy by placing her for a few days on some pieces of chalk shaped so as to resemble eggs, or put her on three or four eggs of little or no value.

If you desire to have chickens produced at some particular time, when you have no hen ready to sit, you may induce the desire of incubation by stimulating food—such as toast, or dry bread steeped in good ale, well-boiled oatmeal porridge, with a little Cayenne pepper mixed through it, or hard-boiled eggs, and fresh raw meat, cut small. Fomenting the belly with vinegar, in which pepper has been steeped, is a good practice. But do not suffer any one to persuade you to pluck off the feathers, or to use nettles—practices more cruel than efficacious. Artificial warmth is also never to be lost sight of.

If you find a hen soon tire, or become impatient of sitting, only give her about half the usual quantity of food, and then, when she returns to the nest, feed from the hand with such dainties as you have found to be her favourites. Some will recommend the food to

be placed within the hen's reach, in order that hunger, at all events, may not be a means of inducing her to leave her important post. It is not, however, hunger that induces the impatience to which I have alluded; and this total deprivation of exercise is most prejudicial to the poor bird's health. For the first and last week of incubation, however, the hen should only be allowed to quit the nest once daily, and should not be longer than ten minutes absent from the eggs.

Some hens, on the other hand, are as obstinately constant in their sitting as those I have been describing are the reverse; and birds possessing this temperament, will frequently sit until they half starve themselves, if not prevented. Mr. Lawrence says, that he has had hens which, under these circumstances, reduced themselves to such a pitch of weakness as even to *faint;* and, after the chickens were hatched, to be so weak as to be scarcely able to attend them.

Markham scouts the idea of any hen sitting too long, but he is in error. I would not, as some do, recommend such a hen to be fed upon her nest, but I would remove her at proper intervals, and coax her to eat by presenting her with delicacies. If she consent to eat a sufficiency, drinking will be sure to follow. I may here observe, that if a hen acquire the evil habit of breaking and eating her eggs, boil an egg hard, break away a little of the shell, and give it to her while hot. If she peck at it, and, of course, burn herself, you may reckon upon having cured her of her vicious propensity; but should the first painful lesson prove ineffectual, try a second. You will seldom or never have to resort to a third. I think that experience justifies me in arriving at the conclusion that this habit originates in a craving for *calcareous* matter, which I have already stated to be necessary to the well-being of fowl. If your hens be supplied with chalk and sand your eggs will not be touched.

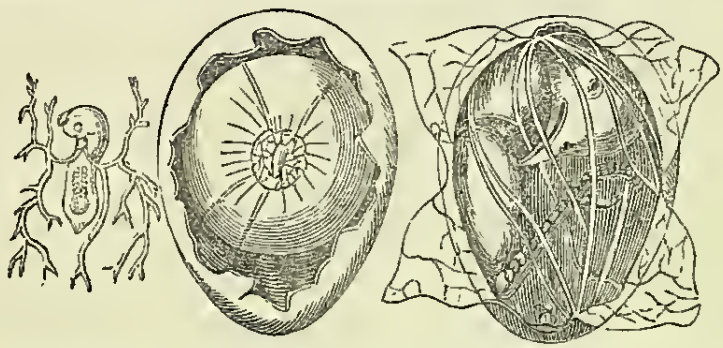
To preserve eggs for hatching, pack them with the small end downwards in sand, wood ashes, turf, oats, or other material, for excluding air. But if they are to be kept any length of time, dip them, when new laid, in oil or pure hogs'-lard warm—not hot; rub the greasy substance into the pores with the finger, and then pack them with the small end downwards in a box or barrel. For a sea voyage, a coat of varnish would be an experiment worth trying. Care should be taken to push them closely, so that they may be shaken as little as may be.

CHAPTER VI.

SELECTION OF EGGS FOR SETTING—THEIR MANAGEMENT DURING INCUBATION—AND TREATMENT OF THE CHICK AFTER HATCHING.

In selecting eggs for setting, bear in mind what I have said as to the number of hens that the cock should associate with; and choose such eggs as you have reason to believe have been rendered productive. Those of medium size, that is to say, the average size that the hen lays, are most apt to prove prolific. Sketchley tells us that he has always found the round egg to contain the female chick, and that of oblong shape, the male. This, however, though it may have been newly discovered by Sketchley, was known to Columella and Stephanus. If you examine the egg between your eye and a candle, you will be able to discern the position of the vacancy caused by the little air-bag at the blunt end of the shell. If this be in the centre, say these authors, the egg will produce a cock; if at one side, a hen. This doctrine, however, has long been abandoned by physiologists, and upon the best authority; nevertheless, though I have no faith in those who pretend to tell the sex of the chickens from the eggs, you may form a very fair judgment if your eggs are impregnated, from their specific gravity. Put them into a bowl of tepid water, and reject such as do not sink to the bottom. Choose, also, such as present a marked disparity of size between the two ends; and while collecting, keep the eggs dry, clean, and in a well ventilated part of the house. Such as are equal in size at both ends, usually contain two yolks; and these, be it observed, instead of producing twin-chickens, as might naturally be expected, commonly produce monstrosities: reject them. The number of eggs to be placed under a hen is from nine to eleven. The number is, however, of course, dependant on the size of both eggs and hen; an *odd number* is to be preferred, as being better adapted for *covering* in the nest. Be sure that they are all fresh; and carefully note down the day on which you place them beneath the hen. Never turn the eggs; the hen can do that better than you. About the twelfth day of incubation, you may be enabled to reject such eggs as are unfruitful. For this purpose, hold the egg between your hands in the sunshine; if the shadow which it forms, waver, keep the egg, as the wavering of the shadow is occasioned by the motion of the chick within; if it remain stationary, throw it away. If your eggs have been recently laid, the chick will be developed earlier than otherwise; if they have been very fresh, you will, about the sixteenth day, if you apply your ear to

the egg, hear a *gentle piping noise* within; if the eggs have been stale, this will not be perceptible until about the eighteenth day; and, at this time, the yolk, which had previously lain outside and around the chicken, will be gradually entering into the body of the bird. This serves as nourishment to the little prisoner until his subsequent efforts shall have set him free. From this period let your attention be assiduous, but, at the same time, *cautious;* for the hen has heard this cry before you have, and all her maternal anxieties and tenderness are, from that moment, so greatly augmented, that any unnecessary interference will only tend to irritate her.



Eggs during the process of hatching, broken to show for supplying nutriment to the chick. This is shown separated from the egg, on the left.

The position which the chick holds within the egg, is apparently anything but advantageous for the work of breaking forth; and, hence, if the youngling be weakly, artificial aid is sometimes necessary. This position would, indeed, almost induce one to regard the liberation of the chick, by its own unassisted efforts, as an impossibility. I shall describe it briefly:—The neck slopes towards the belly, to about the centre of which comes the head; the head lies beneath the right wing, just as that of a sleeping bird; the feet are gathered up somewhat like those of a fowl trussed for the spit, and the claws bend backwards, till they almost touch the head; and it is in this confined position that the shelly wall of the prison has to be broken through. It must, therefore, be anything but easy work for the little chick. The process of effecting the breaking of the shell, is a succession of taps from the beak, by which first a crack or *star*, with many cracks diverging from it, takes place; a hole is soon effected, the sides gradually chip away, and the chicken emerges from its new sphere of being. Sometimes the little bird, on proceeding to leave the broken shell, unexpectedly finds itself retained in its place by some accidental or irregular circumstance. The shell may, for instance, have been well cracked, and yet its lining

membrane may be so tough as to defy all the efforts of the inmate to rupture it, and thus still present a barrier, and often, without assistance, an insurmountable one. Some chickens *waste their time* striving to tear this membrane before they have made a sufficient crack in the shell. These had better not receive assistance; they will speedily find out their error, and go to work in a proper manner.

In every case *look through the egg* before helping the chick. That chicken which comes out before the *whole of the yolk* has been absorbed, will assuredly prove to be an unhealthy, weakly, little wretch, and will speedily die. A chicken must, previous to leaving the shell, have imbibed such a portion of nutriment as will, at least, serve it for four-and-twenty hours afterwards: it is for this that the yolk is designed. Any unusual excess of light, or any injudicious interference with the eggs towards the close of incubation, will nearly always result in causing the chicken to strive to get out too soon, and thus often occasion the loss of numbers.

Neither are all shells, nor all membranes, of an equal thickness, and some are even preternaturally obstinate; hence another difficulty the chick has to experience.

Some poultry keepers will dip the eggs into warm water the day before they think they will be pecked at. This produces no perceptible difference in the consistence of the shell; and I object to the practice, not only on the score of its total inutility, but as being likely to injure the present health of the chick; and the warmth is likewise specially calculated to produce another difficulty connected with its egress, viz., that of being *glued* to the shell, the white of egg—the *albumen* which surrounds the chicken in the shell—being convertible by heat into a kind of GLUE.

The following is, perhaps, the only case in which interference can prove useful:—When you find the fracture on the outside of the shell remaining the same for five or six hours, and when, on examining the edges of this fracture, you find them dry and unmoistened by any fluid, you may conclude that assistance is called for, and may proceed to render it, but, of course, with all possible caution. The best mode to be adopted on such occasions is to imitate, as nearly as possible, the natural efforts of the chicken itself, which may be done by sharp, short strokes with the back of a knife or key; or, what is better than either, the point of a pair of scissors. Be, however, both gentle, firm, and deliberate, and take care lest you penetrate the cavity of the egg. Having succeeded in making a sufficient opening in the shell, you may, by a careful and tender use of your fingers, extricate the chick.

Sometimes a few scales of albumen, or of the lining membrane of the egg, may remain on the bird's plumage for some days. Do not be uneasy about them. Leave them alone, and as they dry they will fall off of themselves. In affording your assistance to the embarrassed chick, be extremely tender with your fingers. You may otherwise often kill when your intention is only to cure. For my own part, my confidence in the unassisted powers of nature is such, that I would be disposed to permit at least *eight hours* to elapse before I resorted to mechanical means of interference. A chick so weak as to perish before that time, is not worth striving to extricate; and, on the score of humanity, its death within the shell will be less painful than after quitting it.

For about twenty-four hours after birth, the chick not only can do well enough without any extraneous nourishment, but will positively be far more likely subsequently to thrive if let alone. The next day they may be fed with crumbs of bread, eggs boiled hard and chopped fine, or cold oatmeal porridge well boiled. After that period, no harm can arise from turning your new clutch in among older chicks that already feed themselves. They will then ordinarily follow the example of the rest, and peck away at whatever is going. In the first four days they require food at least hourly, to supply the rapid increase in bulk and feathers. Damp is fatal to them. If the breed is a fine one, however, they will do better with the hen, partaking of the natural food she scrapes together for them.

Although I have mentioned yolks of eggs, boiled hard, and broken down with crumbs of bread, as food for young chickens, I consider this treatment to be needlessly expensive, except in particular cases; and I have found plain crumbs, or cold oatmeal porridge, that has been very well boiled, and not *burned*, do nearly as well. Small grained oatmeal, given raw, or slightly scalded, and suffered to cool down to a very low degree of *tepidity*, will also be found useful and good. Do not forget that, in all probability, thirst will be present before hunger, and there ought, therefore, always to be a flat, shallow pan or plate of clean spring water left within reach, and the hen herself, glad of a little refreshment after so long a task, will usually lead the way to it.

If the chickens be hatched during cold weather they will require artificial warmth, or, at the very least, comfortable housing. The kitchen of a farm-house will afford this in perfection. Recollect that setting your hen in, or at the approach of, winter, is stark folly; freedom from annoyance, comfortable housing, and a sheltered walk, are all that they require—an hour's sunshine is worth more than a year's wrapping up in tow. If your chicks be *very* weakly you may cram

them with crumbs of good white bread steeped in milk; but at the same time recollect that their little crops are not capable of holding more than the bulk of a pea—so rather *under* than *over* feed. If your hen have been much exhausted by hatching, you will do well to cram her with crumbs of bread steeped in port wine, or in the absence of wine, diluted spirits or ginger cordial may be used with effect.

The following hatching table exhibits the period of incubation with the denizens of the poultry yard :—

	Number of eggs.	Days.
* Swan	5 to 10	42.
Goose	12 to 15	30.
Duck	12 to 15	30.
* Turkey	15 to 20	31.
Peafowl	5 to 7	29.
* Guinea Fowl	7 to 9	30.
Hen	9 to 13	21.

NOTE.—The Swan and Guinea Fowl *pair*, and therefore for breeding purposes not more than one hen of each kind should be kept.

* A constant supply of suitable food is the great secret of rearing the delicate birds like pheasants, turkeys, and guinea fowl. The latter grow so fast they need food every half-hour during the day.

CHAPTER VII.

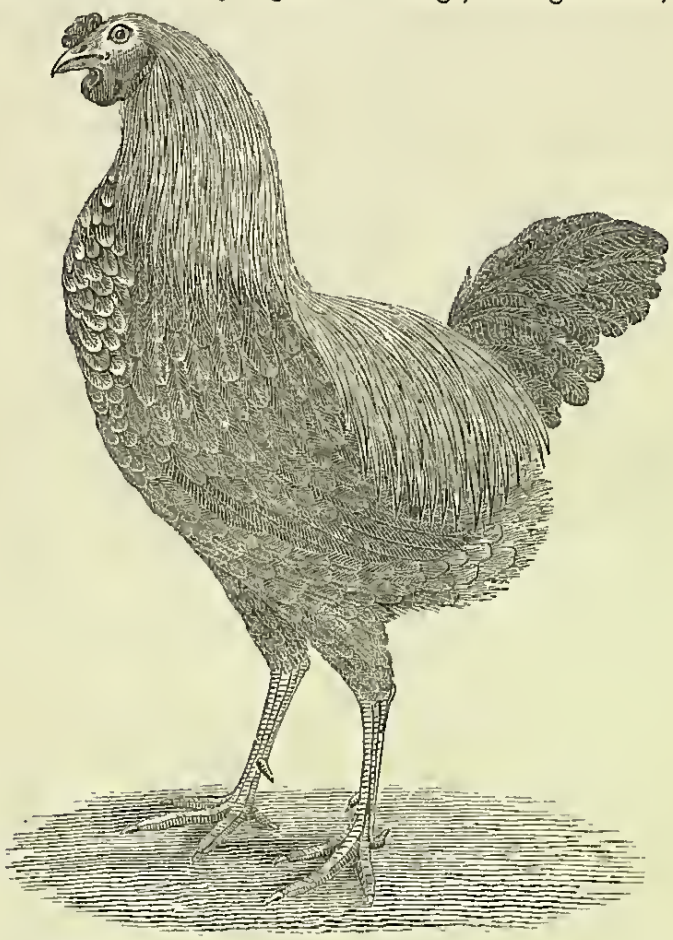
VARIETIES OF THE DOMESTIC FOWL.

THE varieties of the Domestic Fowl most desirable in an amateur's collection may be classed as follows :—

1. THE MALAY FOWL, from its size and strength, is admirably adapted for crossing with the Dorking and other native breeds.
2. THE JAVA FOWL, nearly resembling, and in the opinion of some, identical with the Malay.
3. THE COCHIN CHINA breed, equal in most respects, and more prolific than the Malay.
4. THE SPANISH FOWL, perhaps the best breed known in this country for laying.
5. THE POLISH FOWL, a noble and very beautiful bird, and an excellent layer.
6. THE SPANGLED VARIETIES, including the whole class of GOLD and SILVER SPANGLED, known in different countries as Spangled Hamburghs, Every day Dutch, Bolton Bays, Bolton Greys, Chittyprats, Creoles, Corals, &c.
7. THE SPECKLED AND WHITE DORKING, the most delicate of all the varieties for the table.
8. THE SUSSEX FOWL, most probably a variety of the Dorking.
9. THE GAME FOWL, graceful of form and plumage, with undying courage, and excellent for crossing with common varieties.
10. THE PHEASANT FOWL, erroneously said to originate in a cross with the Cock Pheasant.
11. THE BANTAMS, more remarkable for their beauty than any other quality.

I. THE MALAY FOWL.

The Malay fowl has, as its name implies, been brought originally from the peninsula of that name at the southern point of the continent of India. He stands very high on the legs, is long-necked, serpent-

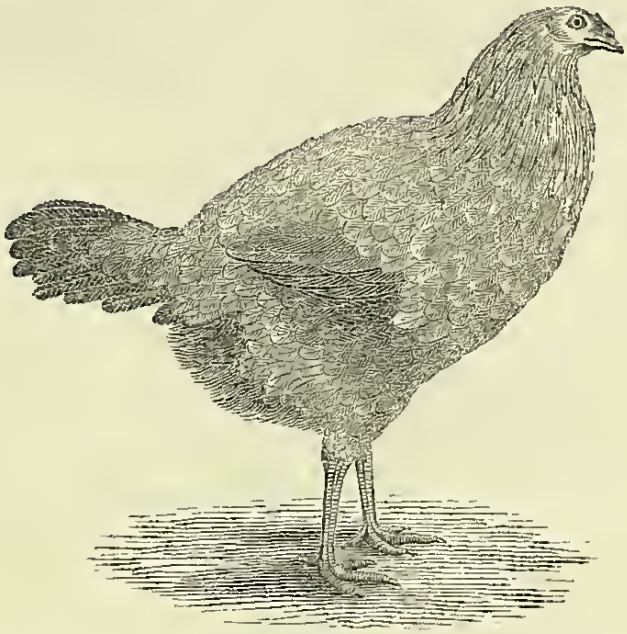


THE MALAY COCK.

headed, and is in colour usually a dark brown, streaked with yellow, sometimes, however, white; his form and appearance are grand and striking in the extreme, and he is no small embellishment to the poultry-yard. This fowl is also frequently called the *Chittagong*.*

* Mr. Nolan considers the Chittagong a distinct variety, crossing with the Dorking so as to produce a highly improved breed. He also speaks of the Malay as crossing "admirably with our common domestic fowl, producing a large and hardy variety, excellent layers and sitters, and well-calculated for the table and for the improvement of the cottager's breed. The value of a pair of the true Malay breed is about 30s., varying to £3 10s., according to quality.

The Malay fowl, however, that were originally imported into these countries, were by no means such birds as I could recommend to the notice of the breeder, their size possessing too much offal, as neck, legs, and thighs, and the flesh, moreover, being dark coloured and oily. Another variety—that represented by the cut—has been since introduced, which is well worthy of our attention. As a cross, this Malay has, indeed, proved a most valuable addition to our poultry-yard, the cross-breed possessing all the hardiness of our native domestic fowl, with the gigantic size of the foreign stock. Since the introduc-



THE MALAY HEN.

tion of this variety, the export trade in poultry from Ireland, both living and dead, has considerably increased; indeed, without introduction of fresh blood, as with all breeding stock that are bred *in and in*, fowl will become puny and degenerate. All the true Malays in this country may be traced, according to Mr. Nolan, to a pair purchased by him in the London Docks, and which he describes, both cock and hen, as being of a reddish yellow. The cock weighing from 11 to 13 lb., and standing 24 to 26 inches high; the hen 9 to 10 lbs., and standing 23 inches high.

II. THE JAVA FOWL.

Resembling the Malay in shape, but presenting, in portions of its plumage, the colouring of the Dorking. I hold this, its common

appellation, to be a misnomer, and regard it as the result of a cross between a Malay and Dorking or Spanish. In qualities it resembles the Malay, but is not so valuable as a cross with other breeds.

THE SHAKEBAG.

A good many years ago, there used to be a variety of fowl much in request in England, called the "shakebag," or the "Duke of Leeds' fowl," his grace, of that name, about 60 or 70 years ago, having been a great amateur breeder of them. These fowl were as large as the Malays, but differed from them in the superior whiteness and tenderness of their flesh, as also in their very superior fighting abilities. Mowbray thus writes of one in his possession:—"The only one I ever possessed was a red one, in 1784, weighing about ten pounds, which was provided for me, at the price of one guinea, by Goff, the dealer, who then lived upon Holborn Hill, in London, and who, at the end of two years, received him back at half a guinea, having allowed me, in the interim, three shillings and sixpence each for such thorough-bred cock chickens as I chose to send him. At that period, the real 'Duke of Leeds' fowl' had become very scarce, which induced the dealers to put shakebag cocks to Malay hens, by that means keeping up the original standard size, but entirely sacrificing the colour and delicate flavour of the flesh." The name of this fowl seems to have arisen from the old practice of cock-fighting, when *the fancy* used to challenge *all comers* having their cocks concealed in a bag, and the tremendous size and power of the Duke of Leeds' fowl proving so far superior to all competitors, thus usually insuring conquest, and eventually obtaining for it the name, *par excellence*, of *shake-bag*, since corrupted into SHACKBAG.

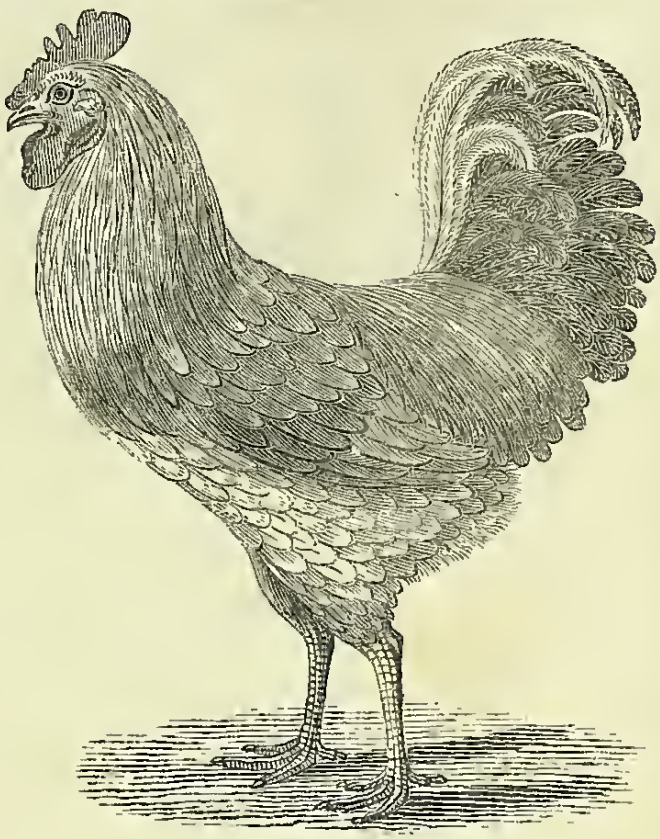
The same writer (Mowbray) likewise informs us that this fine bird was not unfrequently substituted for a turkey, and this, as he facetiously adds, "to the great convenience of poulterers and innkeepers of Workingham and elsewhere."

This "shakebag" or "shackbag" fowl, so lauded by Mowbray, but with the real origin of which he has confessed himself unacquainted, unless, indeed, as an improved breed of dunghill, would appear, if we can judge from the description of Dixon and other writers on poultry, to have been neither more nor less than an offshoot of the great Paduan, Polish, or St. Jago fowl, the immediate domesticated descendant of the "Gallus giganteus," already described; and I have particularly to request my readers on no account to confound it with the Malay. This same Paduan or Polish fowl was described, about two

centuries and a half ago, by the celebrated naturalist, Ulysses Aldrovand, as being "very handsome, being adorned with five different colours—viz., black, white, green, red, and yellow; the body black, tinged with green, and tail of the same colour; with the base of the feathers white; some of the quill feathers of the wings also white above; the head being adorned with a black-coloured crest or tuft; the eyes surrounded with red; comb small; beak and feet yellow." This fowl would, indeed, seem to have been almost identical with the great wild bird of St. Jago and Sumatra, but it is now altogether unknown to the London dealers.

III. THE COCHIN CHINA FOWL.

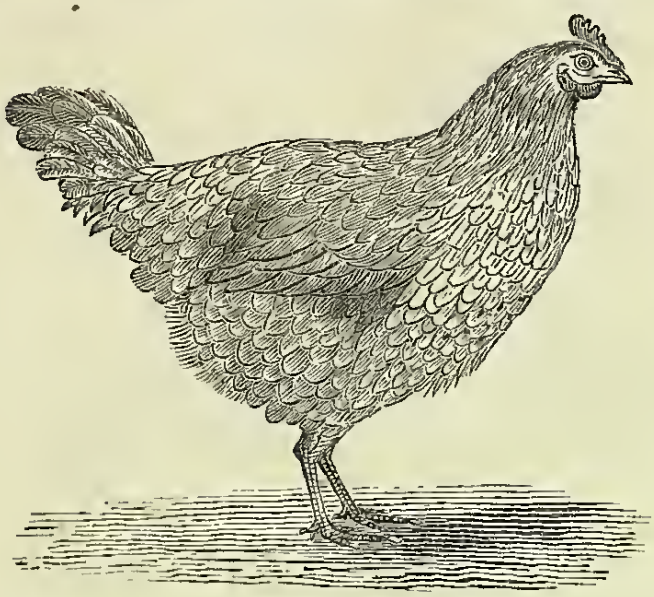
This gigantic bird has been only very recently introduced into Great Britain, and it is to her Majesty and Prince Albert that we owe its addition to our stock of domestic fowl. Two fine specimens of the Cochin China fowl, but rather aged, were sent over by her Majesty to the Cattle Show of the Royal Dublin Society, April, 1846; and were subsequently presented to the then Lord Lieutenant of Ireland, Lord Heytesbury.



THE COCHIN CHINA COCK.

The breed have since become comparatively well known, and are now kept by several private persons and breeders; amongst whom I may mention the well-known M. Du Gué.

This variety of fowl so far surpasses, both in size and power, all that we have ever yet seen in the shape of poultry, as to have led many persons not conversant with zoology, on first viewing them, to refer them to the family of Bustards. They are, however, genuine poultry. Their general colour is rich glossy brown, or deep bay; on the breast is sometimes found a marking of a blackish colour, and of the shape of a horse-shoe. The horse-shoe mark on the breast is not an infallible sign of the breed. The comb is of a medium size, sometimes, but not always, serrated—but not deeply so; and the wattles are double. Besides their gigantic size, however, these fowl possess other distinctive characteristics, among which I may mention, as the most striking, that the wing is jointed, so that the posterior half can at pleasure be doubled up and brought forward between the anterior half and the body. The birds can do this at pleasure; and the appearance the manœuvre imparts to their form has procured for them the title of "ostrich fowl." The flesh is white and delicate. The eggs laid by the hen of this variety are large, of a chocolate colour, and possess a very delicate flavour. They are very prolific, not unfrequently laying two, and occasionally even three eggs on the same day, and within a few moments of each other. One of the hens—"Bessy"—exhibited by her Majesty, laid 94 eggs in 103 days.



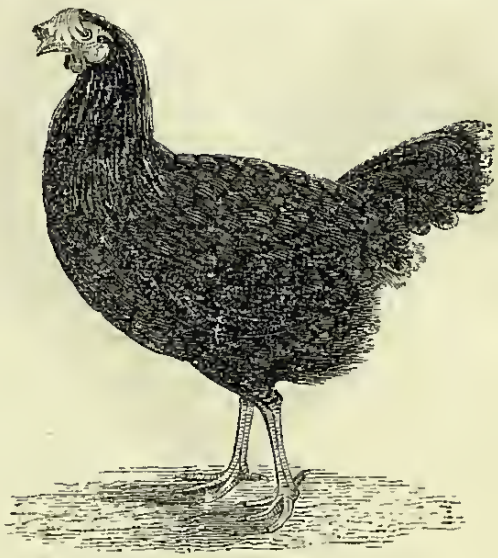
THE COCHIN CHINA HEN.

IV. THE SPANISH FOWL.

This fowl is clad in black plumage, but possesses quite the reverse of black flesh. I regard these birds as the result of the highest

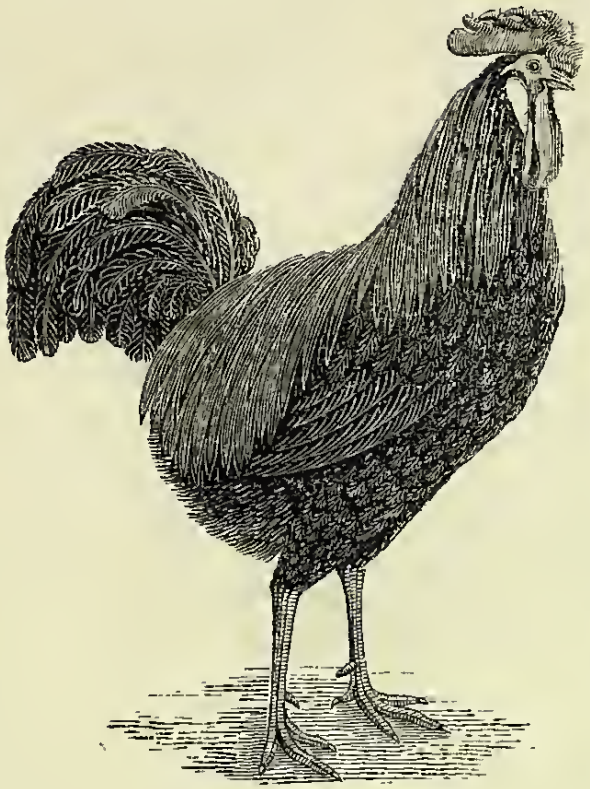
possible *artificial* culture, and adduce, in support of my opinion, their unusually large comb and wattles, characteristics not commonly to be met with among the primitive varieties.

The Spanish fowl is, perhaps, a little inferior in *size* to the old "shakebag," but in every other quality, wherein excellence and value are to be looked for, it is more than that bird's equal. The colour of the Spanish fowl is a glossy black, and the feathers of the legs, thighs, and belly are particularly decided in their hue, and of a *velvety* aspect. It is a stately bird, and of a grave and majestic deportment, and is, in either utility or beauty, to be surpassed by none of its congeners. One of the most striking characteristics of this fowl is a *white cheek*, and the comb and wattles are singularly large, simple, and of a very high colour; the feet and legs are of a leaden colour, except the soles of the feet, which are of a dirty fleshy hue. A full grown cock will weigh about $7\frac{1}{2}$ lb.; the hen about $6\frac{1}{2}$. A correspondent of the Rev. Mr. Dixon (Mr. Barber), says—"being of opinion that our breed of fowl required renovating, I got a Spanish friend to procure for him a breed from the part of Spain he came from; finding them excellent layers and much admired, he procured a second supply, amongst which were three speckled black and white, in shape and carriage very much like the speckled Polish; others of this importation were pure white, much like the Spanish fowl, but wanting the patch on the side of the cheek." This is a fowl well deserving the attention of the breeder, they have long been naturalized in these islands, and are consequently well "*climatized*," and present no peculiarities of constitution that would suggest difficulties in either hatching or rearing. As table birds they hold a place in the very first rank, their flesh being particularly white, tender, and juicy, and the *skin* possessing that beautifully clear white hue, so essential a requisite for birds designed for the consumption of the gourmand. The hens are likewise layers of the first order; and



THE SPANISH HEN.

of all naturalized or indigenous varieties of fowl, with the exception of the Columbian, these lay the largest and the best flavoured-eggs. They are, besides, prolific, extremely easily fed, and, in short, I know of no fowl I would rather recommend to the notice of the breeder; but let me here observe, that *spurious* specimens of this fowl are often in the market, which will occasion, perhaps, an equal outlay at their original purchase — will decidedly cost as much to feed—be, perhaps, *harder* to rear, but will most unquestionably *not* bring in an equal *return* in the way of profit. By applying, in the first instance, to a breeder of known respectability, you will avoid much disappointment; and though you may conceive the price demanded of you to be high, it may not, perhaps, at the same time, be higher than what you might have foolishly paid for a bad article; and even should you have to lay out a few shillings extra, do so willingly, and, recollecting the old proverb, avoid being "penny wise and pound foolish." The market value of a pair of Spanish fowl is about thirty-five shillings.



THE SPANISH COCK.

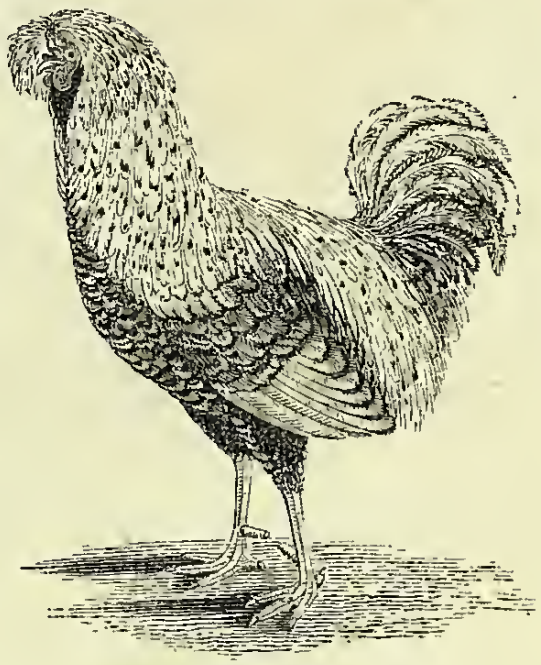
THE COLUMBIAN.

A very noble fowl, presenting the appearance of a cross between Spanish and Malay, but possessing so much nobility and stateliness of aspect that I am loath to regard it otherwise than as a distinct and very primitive variety. The eggs are particularly large. My attention was first drawn to these fowl by Dr. Bull, of Cork, whom I take this opportunity of again thanking for his repeated presents. My

fowl, of this breed, presented to me by Dr. Bull, lay eggs averaging in weight from $4\frac{1}{4}$ oz. to $4\frac{1}{2}$ oz., seldom, however, laying more frequently than every second day. Some splendid fowl of this variety are also kept by Mr. Baker, of Ballytobin House, near Callan. These fowl are natives of Columbia, on the Spanish main in South America; and I think it not improbable that they are the origin of the breed now known as "Spanish."

V. THE POLISH FOWL.

In the previous editions of this work, Mr. Richardson was led into error, and described a pair of the Spangled Varieties of the Polish Fowl under the head of Spangled Hamburghs. The distinction between the Hamburgh and Polish consists in this:—that while the Polish has a tuft or crest over the beak in both the cock and hen, in the Hamburgh the crest is a rose comb and wattles. Mr. Richardson's description of the bird, apart from the mistake in the name, is as follows:—



THE GOLD SPANGLED POLISH COCK.

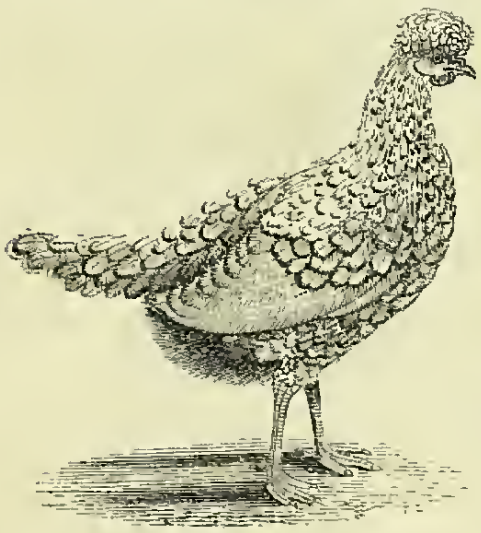
I am this moment writing my description from two beautiful specimens as they stand before me on the table. These fowl gained the prizes at the last show of the Royal Agricultural Improvement Society of Ireland, from a host of very worthy, but still far inferior competitors; and my friend and colaborateur, WILLIAM OLDHAM, has presented in his woodcuts, as above, and on the preceding page, the portraits that I shall endeavour to describe in letterpress.

The *Golden Spangled* is one of no ordinary beauty; it is well and very neatly made; has a good body, and no very great offal. On the crest, immediately above the beak, are two small fleshy horns, resemb-

ling, to some extent, an abortive comb. Above this crest, and occupying the place of a comb, is a very large brown or yellow tuft, the feathers composing it darkening towards their extremities. Under the insertion of the lower mandible, or that portion of the neck corresponding to the chin in man, is a full, dark-coloured tuft, somewhat resembling a beard. The wattles are very small. In the *golden* variety, the hackles on the neck are of a brilliant orange, or golden yellow; and the general ground-colour of the body is of the same hue, but somewhat darker. The thighs are of a dark brown, or blackish shade, and the legs and feet are of a bluish gray. The full grown cock weighs about six pounds, and the hen five and a-half pounds; the eggs moderate in size, and very abundant.

In the *Silver Spangled* variety, the only perceptible difference is, that the ground-colour is a silvery white. The extremity, and a portion of the extreme margin of each feather, are black, presenting, when in a state of rest, the appearance of regular semicircular marks or *spangles;* and hence the name of "Spangled," the varieties being termed *gold* or *silver*, according to the prevailing colour being bright yellow, or silvery white. In mere excellence of flesh, and as layers, they are inferior to the Dorking or Spanish varieties.

Of the Polish fowl there are several subvarieties. The Polish fowl is, perhaps, the most unchanged from the primitive stock of any we are now acquainted with, being beyond doubt the immediate and almost unmixed descendant of the "Gallus giganteus," or great wild cock of St Jago. The varieties of Polish fowl are—



GOLD SPANGLED POLISH HEN.

I.—*The Spangled Polish.*—a bird of extraordinary beauty, extremly scarce, and very difficult to be procured. This fowl presents a symmetrical and regular combination of the following colours, viz.:—A bright *orange*, a clear *white*, a brilliant *green*, and a jetty *black*, softened down with a rich and pure brown, every feather being tipped with white, so as to produce the effect whence has been derived the term of SPANGLED. The

colour of the hen is a prevailing golden yellow, with white spangles, like the cock. In the cock the thighs are black, and are, likewise, though in a less degree, marked and spangled with black and golden yellow. The hinder end of the body is furnished with green and orange-brown hackles, and the tail is carried well up. The flesh of these birds is of good quality, and they are very prolific. They also fatten quickly, and have, by some, been compared to the Dorking for similarity of flesh and other excellencies of quality. I, however, must unequivocally award the preference to the latter bird, independent of the enhanced price occasioned by the far greater scarcity of the former.

II.—The second variety of the Polish fowl is the well-known black fowl, with a white tuft on the crown. Mowbray describes this

WHITE-CRESTED BLACK POLANDS.

fowl with accuracy, but errs in supposing its original country to have been Holland, these birds having been brought from St. Jago by the Spaniards, to whom they owe their first introduction into Europe.

Their colour is a shining black, and both cock and hen have the white top-knot. The head is flat, surmounted by a fleshy protuberance, out of which spring the crown feathers constituting the tuft. These are remarkably good layers, and will, if kept warm, lay nearly throughout the year; aud it is this cause, probably, that has induced Mowbray and other writers to confound them with the Dutch breed, which, from a similar circumstance, have been styled "*Every-day layers.*" The pair here figured belong to Messrs. Baker, and were most beautiful specimens of the peculiar breed.

III.—This variety of Polish fowl is the most pure and unmixed of the three: it is, indeed, to all appearances, the uncontaminated descendant of the great fowl of St. Jago. Its colour is a brilliant white, with a jet black top-knot. This variety was described by Aldrovande, and more recently by Dr. Bechstein. I have never myself seen a specimen of the breed, and have every reason to suppose it to be extinct, or very nearly so. Applications have been made to several persons in both Germany and Poland, connected with the poultry fancy, for the purpose of procuring specimens of these birds *at any cost*, but the answers returned were, without one exception, that they were no longer to be had.

VI. SPANGLED VARIETIES.

Gold and Silver Spangled Hamburghs.	Gold and Silver Dutch.
Dutch Penciled.	Gold Bolton Bays.
Dutch Every-day Layers.	Chittiprats.
Bolton Greys.	Creoles.
	Prince Albert Fowl.

Much confusion seems to exist with regard to the spangled varieties of the Domestic Fowl. The Rev. Mr. Dixon has attempted to clear up the subject in the *Agricultural Gazette*, and more recently in his work on "Ornamental Poultry;" taking occasion, *en passant*, to exhibit more of the angry spirit of rivalry, when criticising the present work, than befits the simplicity and earnestness of the inquirer after truth. He remarks:—"Richardson gives the name of Hamburghs to the Gold and Silver Polands a top-knotted variety. Dickson, in his brief, careless, and very loose description, is right in asserting the breeds, both of Golden and Silver Hamburghs, to be combed." The truth seems to be that the spangled fowl have been introduced into the different counties of England without much attention being paid to their origin, and in each county the breeders have given them the names they thought most descriptive of their appearance and

qualities—thus to run hastily through the description of the spangled varieties, as given by Mr. Dixon and other writers;—in the south of England a variety exists called the *Coral*, or *Creolcs*, to which the Penciled Dutch of Dixon is the nearest approach.

In the neighbourhood of Keighley, in Yorkshire, and on the borders of Lancashire, the Bolton Greys are called "Chittiprats," or "Chetc-prats," and prizes given to them as handsome, hardy, and exeellent layers. In other parts of the kingdom they are known by the name of "Moonies." The so-called Prince Albert's breed are Bolton Greys, said to be crossed with game blood, and not easily to be distinguished from the Silver Spangled Hamburgh. Bolton Bay is another provincial term for the Golden Hamburgh, as Bolton Grey is for the Silver.

It is obvious, from these confused statements, that the various spangled races of Domestic Fowl have been so intermingled as to render it next to impossible to discriminate between them.

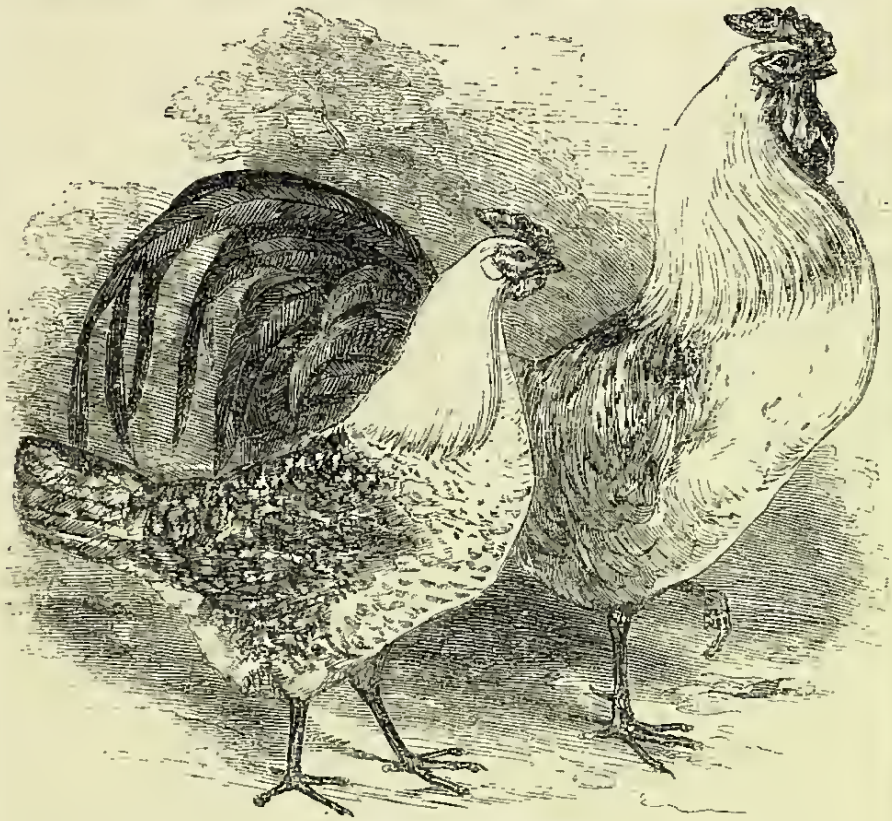
An authority in whom our readers may place implicit confidence says, in reply to our question:—

"Mr. Richardson has evidently made a mistake in the Spangled Hamburgh fowl—his engraving represents the Polish; but the Spangled Hamburgh he has described under the head of 'The Dutch Every-Day Layers,' by which name they are also known. In some places they are called Prince Albert's Fowl, Egyptian, Chittiprats, Creole, Bolton Greys, and the Gold Bolton Greys; and although they differ slightly in some respects, there is sufficient about them to show they were all from the same stock; they are small compared with the Dorking, and lay an egg of a proportionate size." We have therefore brought the various named under the present head, transferring the figures named Spangled Hamburgh to their proper place under the Polish Fowl.

Dutch Every-day Layers.—Frequently confounded with the preceding. Instead of being destitute of comb, and carrying in its place a tuft of feathers on the crown, the cock of this interesting variety possesses what is called a rose comb; that is to say, a comb formed of a great number of folds of single comb, united into one broad, serrated, and fleshy mass. The colour of the cock is, as usually occurs, more brilliant than that of the hen. His body is of a fine reddish-brown hue, with neck hackles of a bright and rather deep golden yellow. These birds present, likewise, two distinctly-marked varieties, the difference, however, depending chiefly on colour. When, as I have described, the colour of the body is a *golden yellow*, streaked or spangled with blackish, or deep brown markings—an appearance

caused by the dark colour of the ends of the feathers—the bird is styled the "Golden Spangled;" and when the ground colour is white (the other circumstances of shading remaining the same), the bird is styled the "Silver Spangled."

These fowl have received the name of "Every-day" or "Everlasting Layers," from the circumstance of their unwillingness to hatch, in



DUTCH EVERY-DAY LAYERS.

consequence of which they lay an egg nearly all the year through, and, if properly cared for, and warmly housed, even amid the frost and snow of the most inclement winter. Some say that the eggs of these fowl are not in general so large as those of ordinary poultry, nor equally substantial and nutritious. This might, indeed, considered theoretically, seem a very obvious consequence of so unsound a demand upon the bird's natural resource; but I think that there is really no such remarkable difference.

The Bolton Greys.—Of Lancashire and the Midland Counties, where they bid fair to supersede many varieties at present held in

great estimation. In general form they resemble the Dorking, except that they are longer in the body; the colour elegantly penciled in black. A variety called Bolton Bays, from that colour, have precisely similar pencilings upon the bay colour. Mowbray, quoting the Rev. Mr. Ashworth, vicar of Tamworth, says of the Bolton Grays: —"They are small in size, short in the leg, and plump in the make; the colour of the genuine kind invariably pure white in the whole lappel of the neck; the body white, thickly spotted with bright black, sometimes running into grizzle, with one or more black bars at the extremity of the tail. They are chiefly esteemed as very constant layers, though their colour would also mark them for good table fowl." Mowbray also calls them Corals—why does not appear, unless they are synonymous with the Creole of other parts of the country. In Yorkshire, the same birds are called Chittiprats.

The Barbary Fowl.—Now naturalized in Spain; the specimen that I describe was brought recently from that country. It is very tall, remarkably heavy, with not much offal, and a firm, muscular quality of flesh. The comb presents a most singular appearance—viz., that of two large and fleshy combs growing up together, and enclosing a smaller and apparently abortive comb between their folds. The colour is a prevailing black, with some green and brown markings upon the wings; it is booted and feathered upon the legs, like the Bantam, and thus clothed to the very toes; the cheek or ear-piece is white, like the Spanish breed. It is a bird of vast body, and almost gigantic proportions, displaying great boldness of carriage and confidence of demeanour.

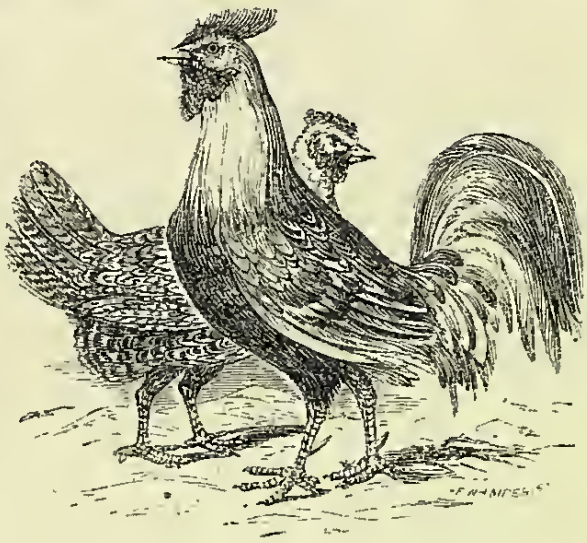
VII. THE DORKING FOWL.

The Dorking would appear to own its name to its having been chiefly bred in a town of Surry, of the same appellation. That the peculiarity of *five* toes, or, in other words, of two hind toes instead of one, is to be regarded as a distinctive character of the breed, is by some writers questioned, and by others wholly denied. For my part, I should say, that whenever this characteristic is absent, a *cross* has, been at work.

The writer on "Poultry," in *Rees' Encyclopedia*, is most positive in asserting the possession of five toes by the Dorking fowl as "all a mistake;" but this peron, whoever he may have been, does not appear to have had even a correct idea of the fowl about which he wrote;

for instance, he says that the Dorking fowl has a *long* body; on the contrary, the body of the Dorking fowl is *round, plump*, and *short*.

I do not, however, mean to assert that this possession of two hind toes instead of one, has *never* occurred in any other family of fowl except those bred at Dorking, in Surry, for Aristotle has mentioned the existence of a similar peculiarity among certain fowl in Greece, and both Columella and Pliny assert the existence of such in their time in Italy, so also does Aldrovand; and these authors lived hundreds of years ago; and, oddly enough, these breeds were remarkable, as are our own Dorking, for being good layers and good sitters.



DORKING COCK AND HEN.

The colour of the Dorking is generally pure white, spotted or spangled with black; these colours will sometimes merge into a grey or grizzle. The hens weigh from seven to nine pounds; stand low on their legs; are round, plump, and short in the body; wide on the breast, with abundance of white juicy flesh. The hens are generally good layers, and their eggs, though smaller than the egg of the Spanish and Polish breeds, are of good size, and well flavoured. The drawing from which our engraving is taken has the portrait of a pair of first-rate pair of Dorkings. The price of the pure speckled Dorkings are about 20s. the pair. These birds have been long prized, and it is now many years since their superiority over our ordinary domestic varieties was originally discovered and appreciated; they were first noticed, and the variety adopted, by the Cumberland breeders, whence they were soon brought into Lancashire and Westmoreland, and gradually spread over all England. They have not, as yet, become generally known in Ireland, but they are, nevertheless, to be found in many parts of that country. Whether, however, from injudicious treatment, or imperfect feeding, or change of climate, or from whatever cause, it is certain that, when met with far from their native place, they appear

greatly to have degenerated from their original superiority of character. In this and all other varieties of fowl, fresh blood should be introduced from time to time, or the breed degenerates.

VIII. THE SUSSEX.

This is but an improved variety of Dorking, similar in shape and general character, usually of a brown colour, but possessing the advantage of wanting the *fifth toe:* I say *advantage*, for the Dorking fowl frequently becomes diseased in the feet, the cocks especially, in consequence of breaking the supplementary toe in fighting.

IX. THE GAME FOWL.

The Game fowl is one of the most gracefully-formed, and most beautifully-coloured of our domestic breeds of poultry; in its form and aspect, and in the extraordinary courage which characterises its natural disposition, it exhibits all that either the naturalist or the sportsman recognises as the *beau ideal* of *high blood*; embodying, in short, all the most indubitable characteristics of gallinaceous aristocracy.

We do not possess any very satisfactory record of the original country of the Game fowl; but I am disposed to cede that honour to India, the natives of which country have always been remarkable for their love of cock-fighting; and we also know that there still exists in India an original variety of game cock, very similar to our own, but inferior in point of size. As to the date or occasion of their first introduction into the British islands, we know nothing certain; but it is probable that we owe it to the invasion of Julius Cæsar, the Romans having been very fond of the sport of cock-fighting.

The Game fowl is somewhat inferior in size to other breeds, and in his shape he approximates more closely to the elegance and lightness of form usually characteristic of a pure and uncontaminated race. Amongst poultry he is what the Arabian is amongst horses, the high-bred short-horn amongst cattle, and the fleet greyhound amongst the canine race.

The flesh of the Game fowl is beautifully white, as well as tender and delicate. The hens are excellent layers, and although the eggs are somewhat under the average size, they are not to be surpassed in excellence of flavour. Such being the character of this variety of fowl, it would doubtless be much more extensively cultivated than it is, were it not for the difficulty attending the rearing of the young, their pugnacity being such, that a brood is scarcely feathered before at least one-half is killed or blinded by fighting.

The beauty of form and brilliancy of colour displayed in the Game Fowl, renders the breed very desirable; they are of all colours, and each variety seems to have had its patrons, the rule being to mate the cock with hens of the same feather, or "rightly plumed to the cock," as Spetchly has it. The brood cock for purposes of battle, says this authority, "should have every feature of health; such as a ruddy complexion, feathers close and short, flesh firm and compact, breast full, yet taper, and thin behind, full in the girth, well coupled, lofty and spiring, a good well-developed thigh, the beam of the leg strong, a large quick eye, beak strong and crooked."

"In the choice of your hens," says the same writer, "let them be rightly plumed to the cock; nor let your choice fall upon those that are large, but rather suffer the cock to make up for the deficiency of the hen in size. In shape they should be similar to the cock, lofty necks, short and close feathered. A true blood hen is clean and sinewy in the leg, the body compact and well proportioned, a well-set thigh, with long, clean, and taper toes." A remarkable instance of the peculiarities of races is related by Spetchley. "For fifteen years," he says, "I had an invariable production of the best black reds ever bred by any amateur, but in the sixteenth year I had several light piles in one hatch; no change of eggs could have taken place, nor was there the possibility of interference by any other cock. A well-regulated account of my birds enabled me to ascertain that there had been a pile in the cross five years previous to my having the breed, so that they had held regularly to breed for twenty-one years, not only in plumage but in every other requisite."

Having selected a cock, place with him from four to six hens, bringing them together in November or December. If he is young, the hens may be full-grown—if a two year's old, then the hens may be young pullets, supposing a strong and vigorous breed is desired. Have, however, a marked attention how he bears himself to all his hens, as it frequently happens that one or other of them falls under his displeasure, in which case she should be removed.

In selecting eggs for setting avoid the earliest ones, as well as the last; choose the best shaped eggs and mark them to avoid mistakes, and place them under an old game hen if you can procure one, the old being excellent mothers. Their place for sitting should be private, and free from all annoyance or intrusion.

When hatched, the young should be regularly fed, and often, after the first day or two, but in small quantities, let their food be :—

Macerated eggs boiled hard.
Crumbs of white bread.
Lettuce leaves and meadow ants.
Maggots from grains.
Steeped oats and Small wheat.
Curds, with new milk.
Bread, toasted, and steeped in chamber-lie.

The variety of Game Fowl bred in this kingdom are very numerous, and to the uninitiated their designations very unintelligible. For the purposes of combat, a sport now rarely followed by amateurs, the black-reds have been the favoured variety. The recognised breeds are, according to Spetchly :—

1. Black reds.
2. Silver black breasted ducks.
3. Birchen ducks.
4. Dark greys.
5. Mealy greys.
6. Blacks.
7. Spangles.
8. Furnaces.
9. Pole cats.
10. Cuckoos.
11. Gingers.
12. Red duns.
13. Duns.
14. Smoky duns.

"In all these," says Spetchly, "good birds may be found; from them, however, have been raised crosses innumerable, and it is the aim of the fine breeders of the present day to have their birds as much as possible uniform in feather, blood, and constitution. Piles," he says, "have originated from a variety of crosses, which have constituted many of the shades of colour; they are not," he adds, "of my selects."

"At certain seasons," he continues, "I have known the roop make sad ravages. Its symptoms are a discharge from the nostrils which incrusts the tongue, the plume fades, their wings flag, and they are seized with gaping and wheezing in the throat, accompanied with fever and craving for water. When these symptoms occur eradicate the sickly parts from the sound ones, and remove the rank effluvia which often affects their eyes in frothy streams, and administer—green rue and sorrel, cut small, each half-a-handful; celadine, half-a-handful; flour of sulphur, sufficient to form a mess with half-a-pound of fresh butter; the whole made into pills of the size of a small nutmeg, giving one nightly for three successive nights."

Buffon, and other continental writers, have given this fowl the not unappropriate title of the "English Fowl;" and truly it is in England that the very best specimens of the breed are to be met with. I cannot here avoid mentioning the justly celebrated breed in possession of the Earls of Derby; their feathers appear to be a long and silky down. This famous breed are the black breasted reds judiciously crossed with other breeds of the same feather. The original blood has been in the family for upwards of sixty years. His Lordship's breeder, Mr. Thomas Roscoe, thus describes them: "The cock is a

fine round-shaped bird, with white striped bill, daw eye and fiery, round and strong neck; firm, round, close-feathered hackle; feather points to shoulders; short, stiff, broad back, close-feathered, and hard; tail long and sickled, well tufted at the roots; wings round and well prolonged, so as to protect the thighs; breast broad and black; belly small and tight in the pinions; thighs short and thick, well-set to the body; legs long and white, swarth cersteps; claws strong; nails long and white; the comb of the stag rather large and red before being cut; weight, about five pounds.

"The hen is of a fine round shape, in colour resembling the partridge, with daw eyes; white legs, toes, and nails; tail, large and fanned. The chicks, when hatched, incline to yellow, with a darkish stripe down the back, changing colour as they advance in age. The eggs vary in colour, I choose those inclining to buff. The hens are capital sitters."

A correspondent well acquainted with rearing and breeding of game fowl, says, "Four or five hens are quite sufficient to keep company with one game cock, perhaps, it is right to observe, that as hens lay at various seasons of the year, there never should be at any one particular season more than eleven or thirteen eggs collected for hatching. When this is done the chickens will prove to be more spirited and resolute. The month of March is the best month to bring forth game chickens. It is generally understood that when hatched in that month they prove to be the most hardy and constitutional birds. In putting game hens with a cock for breeding, great care should be taken to match the feather as near as possible. This being the practice pursued in the north of Ireland, where the greatest care is taken in breeding, and where, in my opinion, the best bred cocks are to be found, this assertion will be at variance with one statement of Mr. Richardson's work, where it says, that "in England alone are the best specimens of the game cock to be met with." I am convinced that the system of breeding game fowl is better and more strictly attended to in the northern counties of Ireland than any other part of our three countries. There are good cocks in Scotland, but the north of Ireland bird is the one of my choice. You may breed from a cock until he is four years old—that is, if not previously cut up by fighting a battle. One battle, or even two, if easily won, will not injure a cock for breeding; some say it will, but I think not. Pullets should at all times be put to aged cocks, and *vice versa*, stags to aged hens. The greatest of care should be taken in gathering the eggs, that those of each hen to be kept separate, and hatched accordingly.

We should state, in conclusion, that however interesting for their beauty and high courage, game fowl will be very troublesome in a poultry yard of various breed, especially if any other cock is kept; for although their smaller size might lead to the supposition that they would not be the aggressors. This would be a mistake, their indomitable spirit leads them to quarrel with every other bird, and their activity and muscular strength render them dangerous to the largest adversary.

X. PHEASANT FOWL.

Much has been written upon this bird and its origin, and a candid consideration of the entire subject, leads to the conclusion that this is another case of intermingling of different varieties. Certain it is, that no established instance exists, where a cross between the Pheasant of the woods and the domestic fowl have ever reached a second generation.

Mr. Whittaker of Beckington, Somerset, in a communication to Mr. Dixon, describes a breed of what he calls PHEASANT MALAY, which he has kept for seven years. The cock he describes as a large sized bird, of a dark red colour, with a small comb; but the beauty of the breed is with the hens, which are of a pheasant colour in all parts of the body, with a velvety black neck, the shape of both cock and hen being very good; the neck in both, long and high crested; the legs, and also the skin, is white. The hens have scarcely any comb; the cocks have one extending only a little way backwards. Mr. Whittaker goes on to state, that the chickens of this breed hatched in June, succeed better than when hatched earlier; that they are small at first, and being scantily supplied with down, have a naked appearance, and are very susceptible of cold—circumstances which lead him to suspect them to be a recent introduction, and from some warmer climate.

XI. THE BANTAMS.

The original of the Bantam is the Bankiva fowl, a native of Java, several specimens of which are kept by her Majesty at the Home Park. These are very beautiful, of a perfectly white colour, and exceedingly small size, and they exhibit some peculiar traits of habit and disposition that we cannot overlook. Amongst other strange propensities, the cocks are so fond of sucking the eggs laid by the hen, that they will often drive her from the nest in order to obtain them—nay, they have even been known to attack her, tear open the *ovarium*, and devour its shell-less contents. In order, if possible, to subdue this unnatural propensity, her Majesty's keeper gave the cocks first a hard-boiled

and then a marble egg to fight with, taking care, at the same time, to prevent their access either to the hens or to any real eggs. After a few weeks the birds gave up their unprofitable labour, and, as the keeper had anticipated, wholly abandoned, for the future, attempting the destruction either of the hen or of the actually *laid* egg. Another strange propensity was exhibited in a passion for sucking each other's blood. The passion chiefly exhibited itself when the birds were moulting, when they had been known to peck each other naked, by pulling out the new feathers as they appeared, and squeezing with their beaks the blood from the bulbs at the base. The intelligence of the keeper found means to overcome this propensity likewise. That person observing that the birds were subject to great heat of the skin, and that its surface occasionally became hard and tightened, conceived that in such cases the hard roots of the feathers being drawn into a position more nearly at right angles with the body than at ordinary times, the skin and superficial muscles were thus subjected to an unusual degree of painful irritation; and it immediately occurred to him, that the disagreeable habit in question was simply a provision of nature for the relief of the suffering birds. Impressed with this idea, he tried the effect of artificial relief, by washing with warm water, and the subsequent use of *pomatum* to the skin. His experiment was successful, and the birds' plumage has been ever since untouched.

As might be inferred, when such a propensity to devour the eggs exists in the male bird, the female is a *secret layer*. In this respect these fowl show their identity with the original bird of Java—the Bankiva cock—whose wildness of disposition I have already mentioned. These birds are both good layers and good sitters. One in her Majesty's possession sat for nine weeks on three successive sets of eggs.

The fowl commonly known as the Bantam, is a small, elegantly-formed, and handsomely-tinted variety, evidently not remotely allied to the game breed. This bird is furnished with feathers to the toes. There is another variety ordinarily known as

SIR JOHN SEBRIGHT'S FOWL.

Which has its legs perfectly naked to the toes, and approaches in form more nearly to the game breed. The high-bred cock of this breed should have a *rose comb*, full hackles, a well-feathered and well-carried tail, a stately, courageous demeanour, and should not be quite a pound weight. The favourite colour is a golden yellow, the feathers edged with black, the wings barred with purple, tail feathers and breast black. The Bantam possesses high courage, and will fight with great resolution.

The attitude of the cock is singularly proud and haughty; his head thrown back so as to nearly touch the upper feathers of his tail. Pure birds of this blood are very rare.

THE CREEPER is also a very small variety of "Bantam," with very short legs.

XII. THE TURKISH FOWL

Is another variety of "Bantam," having a whitish body, with black belly and wings, the body streaked with gold and silver, and the legs bluish. The hen is, as usual, of a less showy plumage, her colour being white, speckled here and there with black, the neck yellowish, and tail of one colour.

XIII. THE JUMPER.

In addition to these diminutive races, there is another mentioned by Buffon, as being so short-legged that they are compelled to progress by *jumps*. These are, however, somewhat larger than the common Bantam, and approach more nearly in size to the Dunghill. They are prolific, as well as excellent sitters, the hen having been known to hatch two clutches of eggs in succession, without even an intermediate day of rest. These dwarf fowl were described by Aldrovand more than two hundred years ago, and also, much farther back, by the celebrated Roman naturalist, Pliny, under the designation of the *Adrian breed.*

XIV. THE RUMPKIN OR TAIL-LESS FOWL.

This bird is distinguished by the total absence of the caudal extremity. Some suppose it to be a distinct species descended from the wild breed of Ceylon. Among the wild birds the comb is not indented; it is so with the tame; and is, in the latter case, frequently double. Buffon supposed this fowl to be a native of America, but Dixon declares him to have been in error, having been misled by the circumstance of these birds being domesticated very commonly in Virginia. Others have supposed this fowl to be a native of Persia, and Latham even names it the "Persian Cock." It is, however, of very little practical importance whence the rumpkin originally came, the bird possessing neither good flesh nor affording good eggs.

XV. THE SILKY FOWL.

This fowl, remarkable for the silky texture of its plumage, is a native of China, but is likewise to be found in Japan: it is nearly always of a white or cream colour. Some modern writers have sought to establish for the silky fowl a claim to be considered a distinct

species; but their opinion is evidently erroneous. These fowl are good layers, but the eggs are small. For any practical purpose they are quite useless, and are also carefully to be excluded from the poultry-yard, on account of the rapidity with which a cross from them lowers the value of our common poultry, darkening the colour of the skin, and causing our birds to deteriorate both in appearance and utility.

XVI. THE SIBERIAN FOWL,

Called by some the Russian, and said to be a native of that country, is distinguished by tufts of dark-coloured feathers springing from each jaw, others, longer and fuller, springing from the lower mandible, in the form of a beard. The colour varies; some are white, some blue or black, and others are coloured like the game fowl. The flesh of this variety is white and good. They are, likewise, good layers, are hardy, and easily fed. Dixon says that they are great favourites in Scotland. This fowl is sometimes coloured like the Spangled Hamburgh—some gold and some silver spangled. When thus coloured, they are deemed valuable.

XVII. THE FRIZZLED FOWL

Is so called from the crisped and frizzled appearance of its feathers, and not, as some have erroneously asserted, from a corruption of Fricsland, at one time improperly conceived to be its native country. It is a native of Java, Japan, and other parts of Eastern Asia: it is smaller than our common fowl, is very susceptible of cold, and is, on that account, very difficult to rear. These fowl are particularly sensible of wet, the chickens especially; they are very shy and wild, and, like the Rumpkin, are objects for the attention of the showman rather than of the poultry breeder.

XVIII. THE DUTCH FOWL

Is of a white or grey colour, streaked and spangled with black, and excellent fowl, whether as layers or for the table; originally imported from Holland. This is called by Dixon the "Pencilled Dutch Fowl," from its marking. It is not the same as the birds I have already described under the name of "Every-day layers."

XIX. THE NEGRO FOWL

Is a native of Africa, but by no means to be confounded with the "Barbary fowl" I have already described. The Negro fowl is distinguished by having black comb, wattles, skin, bones, and feathers. The flesh is, however, white and tender. This bird is another good speci-

men for the curious, but anything but a desirable inmate of the poultry-yard, as, besides being ugly and unprofitable, he has the same objectionable quality of speedily causing deterioration among your poultry, that I have already stated to be the property of the silky fowl.

XX. THE BARN-DOOR FOWL.

I describe these fowl separately; for, although the designation of "Barn-door fowl" may be applicable also to the Dunghill, I regard the former appellation as possessing a far more extended signification.

The Barn-door fowl embrace, of course, several sub-varieties. Few of our high-priced breeds, except in some places the Dorking and the Polish, have, as yet, become so common as to be included in the list; but crosses of the common Dunghill bird with the Malay, Dorking, Polish, or Spanish, are very frequently to be met with.

Dr. Bechstein enumerates eight distinct varieties of barn-door fowl, viz:—

1. The fowl with the small comb.
2. The crowned fowl.
3. The silver-coloured fowl.
4. The slate-blue fowl.
5. The chamois-coloured fowl.
6. The ermine-like fowl.
7. The widow; with tear-like spots on a dark ground.
8. The fire and stone-coloured fowl.

The distinctions will be perceived to consist almost solely in colour; but the Doctor has omitted another and very ordinary inmate of the farm-yard—viz., the *booted* fowl, represented by the bantam. It will then be seen that the Barn-door fowl, whatever marks of being an original variety it may have formerly exhibited, is now likely soon to lose all such marks from the effect of crossing.

XXI. THE DUNGHILL FOWL.

The Dunghill fowl occupies in the poultry-yard precisely the position of the cur dog in the kennel, being, in fact, the produce of a miscellaneous intermixture of most of the ordinary domestic varieties, and constantly differing in its appearance with the accidents which may have influenced its parentage.

CHAPTER VIII.

THE TURKEY.

THE WILD ORIGINAL.

Linnæus and others have given the turkey the erroneous appellation of "Meleagris gallipavo," under the strange impression that this bird and the Meleagris of the ancients are identical — a very

strange error indeed, inasmuch as the descriptions of the Meleagris, given by Athenæus and other classic writers, refer, with the most minute accuracy, to the *Guinea fowl;* and in scarcely any single particular can be traced a resemblance to the turkey. The mistake was first observed and pointed out by the French academicians, and is now universally admitted.

Various opinions have been promulgated relative to the original country of the turkey, but it is now ascertained beyond a doubt to have been America; and it is in that country alone that the true original of our domestic turkey is yet to be met with in all its primitive wildness, clothed in its natural plumage, genuinely wild in all its habits, the unreclaimed denizen of the wilderness. As to the medium through which this bird was first introduced into Europe much doubt still exists, and we have, indeed, no authentic proof as to either the period of time, or by what agency that event took place; it is, however, not unreasonable to suppose that the Spaniards, after their discovery of Mexico, where the turkey is known to be indigenous, brought specimens away with them on their return to their own country; and Oviedo, the earliest describer of this bird, speaks of it as having been domesticated by the Christian inhabitants of New Spain and the Spanish Main. This proves that the turkey was domesticated by the Spaniards before the year 1526, for in that year was Oviedo's "Natural History of the Indies" published at Toledo. The discovery of Mexico took place in 1518: and when Hernandez shortly afterwards described the natural productions of that country, he enumerated amongst them the turkey, distinguishing also the *wild* from the *tame.* In 1530, the turkey was introduced into England; but it seems more probable that we owe its introduction to Cabot's having brought it direct from America, than that we obtained it from Spain; for if the latter were the case, I think it likely that some record of its transmission would remain. In "Baker's Chronicle" we are told that—

> "Turkeys, carps, hoppes, piccarel, and beer,
> Came into England all in one year."

In 1541, we find turkeys enumerated amongst the delicacies of the table, and classed with the crane and swan; but the bird was too important an addition to our stock of domestic poultry to remain very long a rarity. Attention was drawn towards it,—it was bred extensively; and in 1573, we find it mentioned in "Five Hundred Points of Good Husbandry," as forming the staple of the farmer's ordinary Christmas dinner.

The origin of the popular name "Turkey" appears to be the

confusion that at first so unaccountably subsisted relative to the identity of the bird with the Guinea fowl, which is really a native of that country, and which was introduced into England from the Levant, and at the time of the introduction of the turkey was still scarce. Some say it arose from the proud and *Turkish* strut of the cock. An old writer on agriculture, named Googe, (A.D. 1641) asserts that the turkeys and Guinea fowl were unknown in Britain in 1530; but he evidently suffered himself to be misled by a German author, Heresbach, whose treatise seems to have been the basis of Googe's work. This habit of blindly following the writings of their predecessors has too often been the great rock on which naturalists have wrecked themselves: it is the bane of all science. Hakluyt (A.D. 1582) mentions their having been introduced "about fifty years back." In 1555, two turkeys and four turkey poults formed part of the inauguration dinner of the sergeants-at-law in London: they cost only four shillings each, while the swans were rated at ten shillings, and capons at half a crown: turkeys could not, therefore, have been very scarce at that time.—*Dugdale, Orig. Jud.* Thus, the turkey would appear to have been introduced into England about the year 1530, and we may conclude that it was brought into France about the same period; for, in "Champier's Treatise on Diet," published in 1560, the turkey is described, and the work is said to have been written upwards of thirty years prior to its publication. In this book, also, the bird is said to have been brought from the "newly discovered Indian islands;" and my readers are well aware that the newly discovered continent of America was at first conjectured to be a portion of India, or an island belonging to it. In 1556, twelve turkeys formed the present offered to the King of France by the burgesses of Amiens. Heresbach states that they were introduced into Germany about 1530, and a sumptuary law made at Venice, in 1557, indicates the rank of those at whose tables they were permitted to be eaten. The turkey was then early appreciated, and his value duly estimated; yet, strange to say, not a record remains to lead us to a knowledge of the person to whom the natives of Europe are indebted for so very important a benefit. The turkey has long enjoyed the reputation it now holds, and has been deemed worthy of a place at the most luxurious festivals.

No one who has seen only the domesticated inhabitant of the poultry-yard can form any idea of its wild original. The cock measures about three feet and a half, or nearly four feet, in length, and almost six in expanse of the wings. The skin of the head is of a bluish

colour, as is also the upper part of the neck, and is marked with numerous reddish, warty elevations, with a few black hairs scattered here and there. On the under part of the neck the skin hangs down loosely, and forms a sort of wattle; and from the point where the bill commences and the forehead terminates, arises a fleshy protuberance, with a small tuft of hair at the extremity, which becomes greatly elongated when the bird is excited; and at the lower part of the neck is a tuft of black hair, eight or nine inches in length.

The feathers are, at the base, of a light dusky tinge, succeeded by a brilliant metallic band, which changes, according to the point whence the light falls upon it, to bronze, copper, violet, or purple; and the tip is formed by a narrow, black, velvety band. This last marking is absent from the neck and breast. The colour of the tail is brown, mottled with black, and crossed with numerous lines of the latter colour. Near the tip is a broad black band, then a short mottled portion, and then a broad band of dingy yellow. The wings are white, banded closely with black, and shaded with brownish yellow, which deepens in tint towards the back. The head is very small in proportion to the size of the body; the legs and feet are strongly made, and furnished with blunt spurs about an inch long, and of a dusky reddish colour; the bill is reddish, and horn-coloured at the tip.

The hen is less in size than the cock; her legs are destitute of spurs; her neck and head are less naked, being furnished with short, dirty, gray feathers: the feathers on the back of the neck have brownish tips, producing, on that part, a brown, longitudinal band. She also frequently, but not invariably, wants the tuft of feathers on the breast. Her prevailing colour is a dusky grey, each feather having a metallic band, less brilliant than that of the cock; then a blackish band and a greyish fringe. Her whole colour is, as usual among birds, duller than that of the cock; the wing feathers display less white, and have no bands: the tail is similarly coloured to that of the cock. When young, the sexes are so much alike, that it is not easy to discern the difference between them; and the cock acquires his beauty only by degrees, his plumage not arriving at perfection until the fourth or fifth year.

The wild turkey was formerly found in Canada, and in several districts of the United States, but has been gradually driven backwards as population increased. It is now chiefly to be found in the wilder regions of Kentucky, Ohio, Illinois, and Indiana. The wild turkey is, to a certain extent, migratory in its habits; and about the latter end of autumn large flocks assemble, and gradually desert their

barren wilds for the richer plains of Ohio and Mississippi. The cocks associate in parties by themselves, and seek for food apart from the hens. The latter remain with the poults, which they take care to keep away from the cock, who is very apt to attack and destroy them.

Flocks leaving the same district all move forward in the same direction. They very seldom take wing unless to escape an enemy, or to cross a river, which latter feat they do not perform without great deliberation, and a great deal of noisy "gabbling." The old and strong birds will fly in safety across a river upwards of a mile in breadth; the young and weakly often fall in, unequal to the effort; but nevertheless usually manage to attain the shore by swimming. On reaching the opposite bank, the flock will generally strut about for a length of time, as if bewildered, and may, during this interval, be readily taken. On arriving at the desired district, they disperse in smaller flocks, composed indiscriminately of cocks, hens, and poults. Their food consists of beech-mast, maize, a fruit called the pecan nut, and acorns. They will also devour such beetles, grasshoppers, young frogs, small lizards, &c., as fall in their way. This is about the month of November, at which season they often incautiously venture too near farm-yards and barns, where great numbers are killed, and form a valuable article of traffic to the settler.

Early in March the hens separate again from the herd, roost apart, and carefully shun the cock. They still, however, remain near him; and when a hen utters her *call*, every cock within hearing responds with his "gobble," "gobble," "gobble." This noisy wooing generally continues for about an hour before sunrise, after which the birds silently alight from their perches, and the cocks strut about with expanded tails, seeking to obtain the favour of their desired mates. They sometimes, while thus employed, encounter each other, in which case desperate conflicts take place, terminated only by the death or flight of the vanquished.

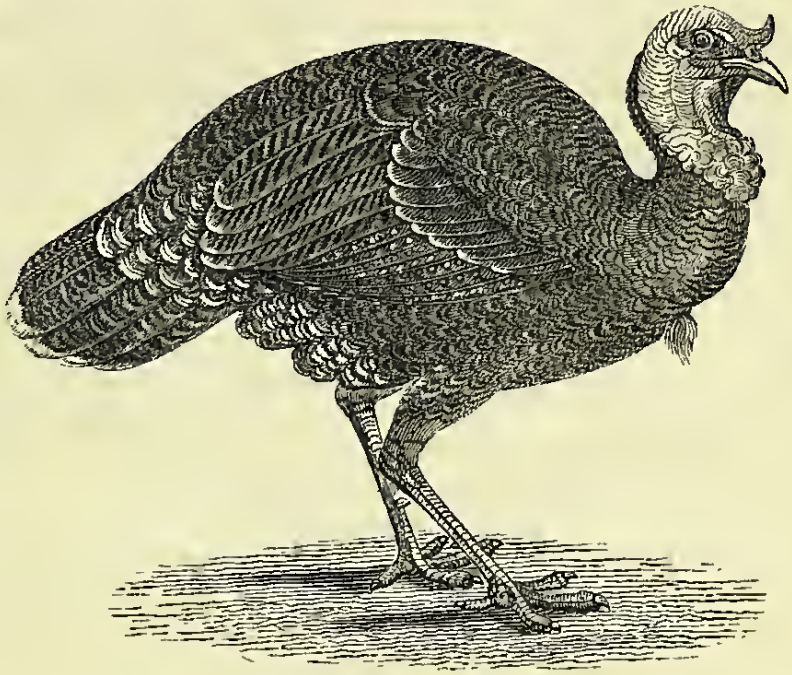
After pairing, the birds remain together for the season, until laying begins, when the hen is again compelled to seclude herself, as the cock would otherwise destroy the eggs. About the middle of April the hen forms her nest of a few dry leaves, on the ground, in some sheltered spot, where it will be concealed from every hostile eye; here she deposits her eggs, to the number of from ten to twenty. They resemble, in size and colour, those of the domestic bird. Whenever she leaves the nest, she covers it up with leaves, so as to secure it from observation. She is a very close sitter, and will, also, when she

has chosen a spot, seldom leave it on account of its being discovered by a human intruder. Should she find one of her eggs, however, sucked by a snake, or other enemy, she abandons the nest for ever. When the eggs are near hatching, the hen will not forsake her nest while life remains.

The young are very sensible to the effects of damp; hence, after a rainy season, wild turkeys are always scarce. The flesh of the wild turkey is very superior to that of the domestic bird; yet that of such of the latter as have been suffered to roam at large in the woods and plains is in no respect improved by this partially wild mode of life. The wild bird is frequently domesticated in America; but I understand that these individuals are not very steady, and will, on the first opportunity, return to their native haunts. C. Lucien Bonaparte relates that a gentleman in West Chester county, New York, once procured a young female wild turkey, in order to try the experiment of crossing the breed with the domestic bird; but owing to some accident it did not succeed, and in the ensuing spring the hen disappeared She returned, however, in the autumn, followed by a large brood, and remained in the farm till the following spring, when she again disappeared, but returned in autumn with a second brood; and this she continued to do for several years.

When the eggs of the wild turkey are hatched under a tame hen, the poults preserve the wild manners of their race, and roost apart from the rest. These are often used as decoy birds, for the purpose of securing the wild ones. The wild turkey is found to thrive better, and fatten sooner, on a given quantity of food, than the tame; and it is well known that the cross between the two is a greatly improved breed as to flesh and capability of taking fat: it is therefore to be wished, now that our communication with America is so rapid, that some of my readers' friends who have emigrated would send them a few hens, that the experiment might be fully tried. I conceive it proper to add here, that Mr. Nolan of Dublin has recently imported some fine birds, and which are very nearly domesticated. Some writers have greatly exaggerated the *weight* of the wild turkey; and some have even asserted that they have met with individuals of *sixty pounds* weight. M. Bonaparte states the average weight of the hen to be from eight to nine pounds, and that of the cock from fifteen to twenty. A knowledge of the natural habits of the bird is of the greatest importance in guiding us as to its treatment in a state of domestication; and we, accordingly, should avoid condemning to the confinement of close, and often filthy hen-houses, a bird which, in a state of

nature, always perches in the open air. *Open sheds* and *high perches* are what they require; and their dislike to the mode of housing I speak of may be recognized in the eagerness with which they rush out the instant the door is opened in the morning. The domestic turkey has been known to go wild in England (*Sp. Mag.*, Aug. 24), and remain so for two or more years; and there is no doubt that it would be possible to naturalize them amongst us like the pheasant.



THE DOMESTIC TURKEY.

Domestication has, in the case of the Turkey, as in that of most reclaimed animals, produced a diversity of colour, which, by cultivation, whether owing to fancy or some supposed inherent excellence residing in the various tints, has now furnished us with several so-called varieties or breeds, still however, with one exception (the Norfolk), only differing in the prevailing hue of their plumage: thus we have the black, the white, the copper colour, the brown, the bronze, and the dusky-grey. They are however, of course, all the descendants of their great American original, of which I am prepared to assert but one really exists, although F. Cuvier has described (1820) a second species found at Honduras. There is a question whether this actually be a second and distinct species, however, or merely a *variety* of the

wild bird, owing its diversity of aspect to circumstances dependant on locality, and consequent change of habit, combined with difference of climate and other important causes, which we know, in the case of other animals, produce such remarkable effects.

As to the relative value of the ordinary varieties, it would be almost difficult to offer an opinion; but those who suppose the *white* turkey to be "the most robust and most easily fattened" are decidedly mistaken, both in theory, as far as analogy may guide us, and in practice, where the certain test of experience has shown to the contrary. The bronze and copper-coloured varieties are generally *undersized*, and are amongst the most difficult of all to rear; but their flesh is certainly very delicate, and perhaps more so than that of other kinds—a circumstance, however, that may partly result from their far greater delicacy of constitution, and the consequent *extra trouble* devoted to their management.

The brown and ashy-grey are not particularly remarkable; but the black are decidedly superior in every respect, not only as regards greater hardiness, and a consequent greater facility of rearing, but as acquiring flesh more readily, and that being of the very best and primest quality. Those of this colour appear to be less far removed than the others from the original wild stock. Fortunately, too, the black seems to be the favourite colour of nature, and black turkeys are produced far more abundantly than those of any other hue. M. Parmentier was informed by a French lady, who had devoted much of her attention to rural affairs, that she had in her yard ten black turkey hens and a white cock, and yet, that not one of the chicks was white, or even light-coloured. Turkeys will sometimes change their hue. Mowbray states that "A turkey cock, the property of J. Lee, Esq., of Redbrook, near Whitechurch, which was black in the year 1821, became afterwards *perfectly white*, this extraordinary change taking place so gradually, that in the middle of the moulting the bird was beautifully mottled, the feathers being black and white alternately."

Of all the domestic varieties of turkey, the Norfolk is the most esteemed. This bird was originally produced by a cross with the wild American breed; and it is chiefly on account of the unqualified success which attended the experiment in that instance that I would recommend our emigrated friends to afford us an opportunity of trying a similar experiment for ourselves, our Irish turkeys being universally admitted to be second in quality of bulk only to the celebrated Norfolk half-blood.

With respect to the best mode of keeping turkeys, I have merely

to repeat what I have already remarked relative to a due attention to the habits of the original wild breed in its native state. Let them have a large, roomy, open shed, sufficiently protected, of course, from the weather, and, above all, from *moisture*. Let the perches be *high*—and here, again, you will do well not to omit the use of the *hen ladder;* for, although these birds can usually fly well, still, when *fat*, they become too heavy for their wings, and are apt to injure themselves in their descent from a lofty perch, especially when in confinement: when at full liberty they can take better care of themselves. During warm weather they may be permitted to select their own roosting-places on the trees about a farm; but should be well watched, lest they stray away; and this indulgence should on no account be granted them if *frost* be anticipated, as their toes are tender and apt to become *frost-bitten*. Indeed summer is the only time of the year when this out-roosting may, with safety, be permitted.

The turkey is a profitable bird to the peasant, for it can almost wholly provide for itself about the roads and hedge-rows: snails, slugs, and worms are among the number of its dainties, and the nearest stream serves to slake its thirst. To the farmer, however, it is often a perfect nuisance, from its love of grain; and should, therefore, be kept in the yard until all corn is too strong in the root to present any temptations.

Notwithstanding the separation which, with the exception of certain seasons, subsists, in a wild state, between the cock and hen turkey, they have been brought to feed and live amicably together in a state of domesticity. The former, however, retains sufficient of his hereditary propensities to give an occasional sly blow to a chick, or forward poult, but that very seldom of a seriously malicious character.

Mascall, in describing a turkey cock (such as the breeder should select) says, that he should be "a bird large, stout, proud, and majestical; for when he walketh dejected, he is never good."—*Cheap Husb.*, p. 151.

M. Parmentier says that both cock and hen should have short legs, full shapes, and general vivacity and energy in all their movements; likewise, that they should be both well shaped and in healthy condition.

Mascall says, that the cock should not be "passing a yere or two yeres old: three yeres is the most, and too much," &c.

For my own part, I hold a turkey cock, at the age of three years, to be only in his prime, and to continue, in every respect, suitable for your purpose until five. The hen is at her prime younger,

and, probably, at the second year is as good as ever she will be afterwards.

It has been stated by some, and yet as positively denied by others, that one fecundation will render all the eggs of that laying fertile; still, however, were it my own case, I should prefer making "assurance doubly sure," by allowing one cock to every dozen or fourteen hens. Even this, however, will render it unnecessary for every poor man who may desire to breed turkeys to have a cock, as one cock will thus prove amply sufficient for the hens of a whole townland. This fact should encourage landlords to keep a good turkey cock of a valuable breed, and so afford their humbler tenantry an opportunity of improving upon the commoner varieties they may possess.

The approach of the laying season is easily known by the increased liveliness and proud strut of the hen; and she likewise further expresses her feelings by a peculiar self-satisfied cry, that soon becomes familiar to the observer. This usually takes place in the month of March (nearly a month earlier than with the wild bird). When the breeder perceives these symptoms, he should provide a nest, and put an egg, or a bit of chalk formed like one, into it, to induce the hen to commence laying there. Partaking of the retiring propensities of the wild hen (although she has not equal reason to dread the destructive passions of the cock), the turkey is a secret layer, and does her best to elude the vigilance of her keeper and steal away to some secluded spot. The peculiar note of which I have spoken, betrays, however, the fact; and whoever has the care of the fowl, should trace her to her retirement, and bring her back to the nest prepared for her.

The time when the hen turkey lays is usually morning. Some lay daily; others only every second day. The number of eggs laid is commonly from fifteen to twenty; but this varies with the age of the bird, a hen of mature age laying more and larger eggs than one of a year old. When the turkeys are to be let out in the morning, you may examine the hens, and keep in such as are about to lay. This precaution will, of course, prevent the loss of a single egg. When the hen is laying, the cock should be kept from her, as he would ill-treat her and break the eggs. The eggs should be taken away as soon as laid, lest they might be broken through the awkwardness of the hen, or sucked by vermin. They will keep till the hens are done laying, if put in a basket and hung up in a dry place. It is unnecessary to keep the eggs belonging to each in a separate place. The hen

turkey is not troubled with any very exclusive feelings, or, rather, her disposition overflows with an excess of maternal love: for she will rear a clutch belonging to another quite as carefully as if they were her own; and will also, if required, hatch the eggs of ducks, geese, or common fowl. In the second laying, the eggs are fewer in number, seldom exceeding from ten to thirteen; and on this occasion extra care is requisite.

A writer in the *Sporting Magazine* for August, 1824, thus expresses himself:—"The sooner that one hen is turned away from her brood, and the brood mixed up with that of another, hatched about the same time, the better chance there is of rearing it, as the hen which is so turned away, will lay again in a fortnight or three weeks, and thus hatch a second time before the month of July is out. Even under these circumstances, the chance of rearing the young ones is very uncertain, as they are hardly strong enough to meet the cold nights in the autumn, when they often become what is called *club-footed*, and die. I rather recommend letting the hen lay as many eggs as she will, and turning her off when she becomes broody. Hens thus treated will lay again in the month of August; so that, under all circumstances, they may be called profitable birds."

Mascall is similarly averse to late hatching. He writes—"Those hennse that lay their eggs later, laye and sitte, bring up their chickens about mid August, or after, which chickens are so tender in wintcr following, they will hardly prosper, for they may abide no cold."

The turkey hen is a most persevering sitter; and when her eggs are taken away, she would sit upon stones, if she could not procure the eggs of another bird, and would perish before quitting the nest. Eggs should, therefore, be left with her, not only to tranquilize her, but because sitting upon eggs fatigues her less than sitting upon an empty nest; but these eggs must be marked, in order to distinguish them from those the poor bird continues to lay; for any eggs that seem to her to be slow of hatching, will be abandoned, as she will quit the nest as soon as she perceives the chick; consequently, as soon as the eggs you have placed under her are hatchcd, she will leave the nest, and the eggs of her own laying will be sacrificed. Remove, therefore, the former; and it is for this reason that I recommend them to be marked. Keep the nest clean while the turkey hen is sitting, as dirt will injure the eggs. No one should go near a hen when sitting, except her keeper; and no one should turn the eggs, or meddle with them further than I have already indicated. The bird will turn her eggs with more judgment than you can do.

M. Parmentier relates that he successfully employed the turkey cock as a sitter, and found that he acquitted himself to admiration up to the period of hatching, but—"When the young chicks appear, their cries and motions scare him, and he either kills or abandons them."

On the thirty-first day of sitting, the chicks leave the eggs; but as some quit their prison before others, they must be placed in a basket filled with feathers, and if the weather be cold, placed in some warm spot. When all are out, they may be given to the hen, for six or eight hours before feeding. Sometimes the chick will require assistance in leaving the egg; and, if so, the same caution must be observed that I have insisted upon in the case of the common fowl. Be very sparing of your aid, or you may do far more harm than good.

Many writers recommend a vast deal of quackery in the treatment of the young chicks. Some go the length of ordering them *wine*, pepper, bathing in *cold water!* &c. It is far better to let them alone. For a few hours after hatching, the chicks require no food at all; and then, instead of *cramming* them—a process in which you are likely to break the tender beak of the little chick—chop up a few hard eggs with boiled nettles, parsley, and a little bread or curd; make this into a paste, and present it to the birds in the palm of your hand, or place it before them on a stone, taking care that the hen does not rob them. In supplying them with water, be careful to put it in such very shallow vessels that they cannot wet themselves; for the least moisture appears fatal to them. As the turkey chick does not seek its food immediately on leaving the egg, as the hen seems incapable of instructing her little offspring how to do so, it is a practice with some to put a few common hen's eggs among the turkey's (which must be done about nine or ten days after sitting), that these, coming out with the little turkeys, may, by force of example, teach them to provide for themselves.*

Unless in very warm weather the hen and chicks should be housed for a month. If they appear drooping, put powdered caraway seed, and a little Cayenne pepper into the food. If you mix the food with milk, let it be previously boiled. Unboiled milk will purge the chicks; but, for my own part, I prefer pure water.

At the age of about two months occurs the most critical period in the life of a turkey, called "*shooting the red;*" or the time when the head and neck acquire the reddish colour of the adult. This crisis once past, the birds may be regarded as past danger, and exchange

* See Note to Table. Page 43.

the name of *chicks* for that of *turkey poults*. The only treatment necessary when the bird is shooting the red is to furnish *nutritive food*, with the addition of a small pinch of Cayenne pepper. Bruised hempseed is also found serviceable.

I know of no birds better calculated to be profitable to the breeder, especially to the peasant, than turkeys. They will almost wholly provide themselves with food; and it is only the young chicks that require nourishment at our hands; and how inexpensive, also, is this nourishment! The nettles that grow in our ditches form its staple; and a few halfpence-worth of pepper will serve for many clutches. With care you may rear two clutches or broods in a year, and have from eight to fifteen survivors in each. Take the average at *ten*, and, supposing you have three hens, you may bring up thirty chicks. These will certainly not cost you quite a halfpenny per week each, for the first two months; but allow one shilling (which is over the mark) per week for the lot,—that, in two months, will amount to eight shillings; and at this age you may, if you desire to part with them, obtain, at least, from one shilling to one shilling and sixpence each for them, Call it the former, and you have thirty shillings in two months, in return for a gradual outlay of eight shillings. This will take place twice in the year. Your hens will cost you nothing for keep; and you must admit that your profit is handsome. This is, however, far below the mark. There is nothing to prevent an individual having *more hens*, rearing larger clutches, and disposing of them at nearly double this price. Recollect, also, that I am only speaking with reference to the *common* sorts,—the generous breeds will sell at a far higher price.

The well known William Cobbett, who, with all his failings, was a shrewd and accurate observer, thus writes—"To raise turkeys in this chilly climate, is a matter of much greater difficulty than in the climates that give great warmth; and so true is this, that in America, where there is always a 'wet spell' in April, the farmers' wives take care never to have a brood come until that spell is passed. In England, where the wet spells come hap-hazard, the first thing is to take care that young turkeys never go out, on any account (except in dry weather), until the dew be quite off the ground; and this should be adhered to till they get to be the size of an old partridge; and have their backs well covered with feathers; and in wet weather they should be kept under cover all day long. As to the feeding of them when young, many nice things are recommended—hard eggs, chopped fine, with crumbs of bread, and a great many other things; but that

which I have seen used, and always with success, and for all sorts of young poultry, is milk turned into curds. This is the food for young poultry of all sorts. Some should be made fresh every day; and if this be done, and the turkeys be kept warm, not one out of a score will die. When they get to be strong they may have meal and grain; but still, they always love the curds. When they get their head feathers, they are hardy enough; and what they then want is room to prowl about. It is best to breed them under a common hen, because she does not ramble like a hen turkey; and it is a very curious thing that the turkeys bred up by a hen of the common fowl, do not themselves ramble much when they get old; and for this reason, when they buy turkeys for stock in America (where there are such large woods, and where the distant rambling of turkeys is inconvenient), they always buy such as have been bred under the hens of the common fowl—than which, a more complete proof of the great powers of habit is, perhaps, not to be found. And ought not this to be a lesson to the fathers and mothers of families? Ought not they to consider that the habits which they give their children are to stick by those children during their whole lives?

"The hen should be fed exceedingly well, too, while she is sitting, and after she has hatched; for, though she does not give milk, she gives heat, and, let it be observed, that as no man ever yet saw healthy pigs with a poor sow, so no man ever saw healthy chickens with a poor hen. This is a matter much too little thought of in the rearing of poultry; but it is a matter of the greatest consequence. Never let a poor hen sit; feed the hen while she is sitting, and feed her most abundantly while she has young ones, for then her labour is very great. She is making exertions of some sort or other during the whole twenty-four hours; she has no rest; is constantly doing something, in order to provide food or safety for her young ones. As to fattening turkeys, the best way is never to let them be poor. Cramming is a nasty thing, and quite unnecessary. Barley-meal mixed with skim-milk, given to them fresh and fresh, will make them fat in a short time, either in a coop, in a house, or running about. Boiled carrots and Swedish turnips will help, and it is a change of sweet food. In France they sometimes pick turkeys alive to make them tender; of which I shall only say, that the man that can do this, or order it to be done, ought to be skinned alive himself."

As I observed already, once the turkey chicks *shoot the red* (which takes place at or about eight weeks old), they may be considered out of danger; hence, many persons consider it more profitable to buy

lean, young poults, after they have got the red, and then fatten them for market, to breeding them. If the mortality among the chicks were greater, and were not so easily to be avoided by a very little care, this might be the preferable mode of going about the matter; but as it is, there can be no doubt of the greater advantage to be derived from rearing your own chicks.

In feeding the poults, after the second month, it will suffice to give them such boiled common plants and herbs as are of a nutritive character—nettles, wild succory, milfoil, turnip tops, cabbage sprouts, or the outside leaves of greens well boiled down—with these, potato skins and an odd potato or two itself may be given. A friend of mine recommends acorns, if they can be had without expense. The meal of buckwheat, barley, beans, oats, according to whichever is most plenty with you, will, when incorporated as I have described with potatoes, fatten the poults with great rapidity. You may also use the meal of Indian corn with advantage, but recollect that it requires treble the boiling of oatmeal, and is more salutary when mixed with an equal bulk of the latter. If you desire to meet the market hastily, and with profit, you will be compelled to resort to more expensive feeding than otherwise, but you will be repaid by the result. When the poults are about five months old, or earlier, if it be late in the season and cold weather seems at hand, give them boiled potatoes mashed with meal, and then *chopped* small, as I have described. Let this be given *fresh and fresh*, and the vessel in which they are fed well washed daily, as otherwise it will speedily contract a sour smell and become repulsive to the birds, for turkeys are both cleanly and *nice* in their appetite. After having persevered in this feeding, morning and evening, for about a month, during which time the exercise of the poults should be greatly curtailed, and they should likewise be kept much of their time (especially after meals) in the *dark*, they will be found fit for use, and, if of a good kind, at least upwards of eighteen pounds weight.

As damp or cold is fatal to turkey poults, so is intense sunshine; and hence they should not be led to pasture under a scorching sun, unless, indeed, care be taken that the walk is shaded. Should rain come, let them be at once housed. Poults should also not be suffered to stray too far; for, independently of the risk they incur, in case of a sudden shower, it must be remembered that they are as yet incapable of encountering any great fatigue, and that their condition will be anything but benefited thereby. Every district seems to have its own peculiar mode of fattening turkeys. Mr. Dixon recommends a mode of diet that I have never seen tried, and wonder much if it be as

efficacious as he seems to imagine—"No food makes their flesh whiter and more delicate than kitchen stuff, or the dregs of melted tallow, more or less of which must be boiled according to the number that is to be fed; and being diluted in a boiling kettle, plants (and especially nettles chopped up) and pot-herbs are mixed with it. The whole being well boiled, barley-meal or maize is added (the latter can now be had very cheap), to form a kind of paste, which may be given twice a day at least—in the morning and at one o'clock—when it is wished to render them fat. But as the dregs of melted tallow are not everywhere to be procured, the dregs or refuse of the oil of nuts, linseed, or sweet almonds, may be substituted, the greatest care being taken not to fatten them wholly with such oily substances, for their flesh would partake of the flavour and be injured."

I have never seen this mode of treatment adopted; but from what we know of the value of oil-cake in the fattening of our cattle, I have no doubt of its efficacy in *fattening* turkeys, but it certainly renders the flesh rank and oily. It will always be recollected, in reckoning the advantages with the expense attendant on the rearing of these birds, that until you want to *fatten* them for sale or your own consumption, you need be at no pains relative to their food, as they are quite able to provide for themselves, being in this respect superior to any other of our domestic fowl. In thus readily providing for themselves, they are also greatly assisted by the easy character of their appetite—grass, herbs, corn, berries, fruit, insects, and reptiles; in short, hardly anything coming amiss to them.

Turkeys are represented by several of the older writers, among whom I may quote Mascall, as being more a delicacy than profitable —"They do rather enrich the mouth than bring any great profit to the farmer or breeder, and so many turkeys in his court, so many moile colts in his stable; for they are a coffer for oats, and a sack for corn—a gulfe, a swallower of barns, a devourer of much meat." The turkey evidently found but little favour with Mascall; but a still more eminent authority thus takes up the cudgels for it—"Turkeys, however by some writers they are held devourers of corn, strayers abroad, ever puling for meate, and many such-like fained troubles, as if they were utterly unprofitable, yet it is certain they are most delicate either in paste or from the spit, and, being fat, far exceed any household fowl whatever—nay, they are kept with more ease and lesse cost; for they will take more paines for their foode than any other bird, only they are enemies to a garden, and from thence must ever be debarred. Till you fat them, you need not care for

food for them."—Gervase Markham's "*Good and Cheap Husbandrie*," p. 150.

Audubon says, that in their native forests "they cannot be said to confine themselves to any particular kind of food, although they seem to prefer the peccan nut and winter grape to any other; and where these foods abound, are found in the greatest numbers. They eat grass and herbs of various kinds—corn, berries, and fruits of all descriptions. I have even found beetles, tadpoles, and small lizards in their crops."—*Ornith. Biog.* l. ii. A favourite repast of this bird in its native forests is said also to be the seed of a kind of nettle, and at another season a small red acorn, on which latter food they soon become so fat that they cannot fly, and are easily run down by dogs.

A writer in the "Sporting Magazine," whom I have already quoted, while endeavouring to prove that the domestic turkey does not inherit the clever foraging powers of its wild original, effectually clears its character of the imputation of devouring the farmer's crops—"They are dull and stupid at getting the corn out of the ear, unless very ripe, and will walk through a field of peas or beans without opening a single shell, even if they are ripe."—*Sporting Magazine*, August, 1824, p. 294.

It may not be generally known that there are many sorts of food which, though nutritious and highly salutary as concerns other fowl, are little short of downright poison to turkeys. Amongst others, I may enumerate vetches or tares, marrowfat peas, and most sorts of pulse, which are little less deleterious to them than such well known poisons as hemlock, foxglove, or henbane.

I think I have now afforded my readers not only all the information relative to the management of turkeys that I have been able to collect, but also all that my own experience enables me to add on my part. Miss Neville—a lady who has, with her usual benevolence, been very zealous in promoting the rearing of turkeys amongst her peasantry, and has, in order to aid them in their attempts, devoted much of her own time to the same subject—writes:—

"The following curious method of rearing turkeys is translated from a Swedish book, entitled 'Rural Economy:'—

"'Many of our housewives have long despaired of success in rearing turkeys, and complained that the profit rarely indemnifies them for their trouble and loss of time; whereas, little more is to be done than to plunge the chick into *cold water* the very hour, if possible—but, at least, the very day—it is hatched, forcing it to swallow one whole pepper-corn, after which let it be returned to its mother. From that

time it will become hardy, and fear the cold no more than the hen's chick; but it must be remembered that this useful species of fowl are also subject to one particular disorder while they are young, which often carries them off in a few days. When they begin to droop, examine carefully the feathers on their posterior extremity, and you will find two or three whose quill part is filled with blood; upon drawing these the chick recovers, and after that requires no other care than what is commonly bestowed on other poultry that range the court-yard. The truth of these assertions is too well known to be denied; and, as a convincing proof of the success (of this mode of treatment), it will be sufficient to mention that three parishes in Sweden have for many years used this method, and gained several hundred pounds by rearing and selling turkeys reared in this manner.

"'The Norfolk turkeys are of this breed, and do not arrive at their full perfection till their seventh year, but are sent to market at two and at four years old, when they fetch from two to three and four guineas a pair, for the table. They are fed for the last two years chiefly on *sunflower* seed, which makes them attain an enormous size.'"

I trust I have already said enough as to the delicacy of the young turkey chick, to prevent any person from following the advice of this Swede, as far as the cold bath and pepper-corn are concerned. The medical treatment for the *roup* seems just enough; and I can state, from my own experience, that were the sunflower to be extensively cultivated, there is, perhaps, no crop which would be found to pay better. Swine and cattle will greedily devour the leaves; the stalks, when dried and stacked, will serve for winter fuel, and the yield of seed per plant will average at one-half pint each. This calculation will give the enormous amount of nearly £100 per acre profit, but let us even take it at the half. Follow my advice as to air and exercise; avoid damp and dirt; pay no attention to the nostrums of ignorant quacks; and I feel assured that you will find the breeding and rearing of turkeys to be, in its way, one of the most profitable branches of rural economy.

The weight of turkeys has been much exaggerated by careless, ignorant, or, perhaps, credulous writers; and 60 lbs. is, by some, mentioned as a common weight. On the contrary, 20 lbs. is a fair weight for any fat yearling bird (and a very great weight for a bird of six months old); 30 lbs. is a fine turkey of any age; and few, save the Norfolk, ever exceed 40 lbs. The greatest weight that these have been known to attain, recorded by such authority as we can rely upon, is

56 lbs. I have never seen a turkey of 60 lbs. weight: nor do I know any one that has. The hen takes fat more readily than the cock, and is, in proportion to her size, a tenderer and better dish. The Norfolk turkey, property of Mr. J. J. Nolan, of which we have given a figure, and which obtained the prize at the show of the Royal Dublin Society of 1846, did not weigh quite 35 lbs.

THE GUINEA HEN, OR PINTADO.

It would be difficult to determine the precise period at which the Guinea fowl was first brought into Great Britain. Its introduction must, at all events, have taken place at a remote date; for we are informed, in "Kennet's Parochial Antiquities," that it was well known in England so early as the year 1277.

The original country of the Guinea fowl is, as its name implies, Africa; but it is likewise common in America, where it is supposed to be indigenous, as well as the turkey.

The Guinea fowl is slightly larger than our ordinary barn-door fowl, but is inferior in size to the larger foreign breeds, as the Malay and Spanish; in both aspect and character it appears to occupy a position between the pheasant and the turkey.

Although long familiarized, the Guinea fowl has never been fully domesticated, still retaining much of the restlessness and shyness of its primitive feral habits. It is very courageous, and will not only frequently attack the turkey, but even prove victorious in the encounter.

The cock and hen are so nearly alike, that it is not easy to distinguish them; there is sometimes a difference of hue in certain parts; but this difference only occurs occasionally, and indeed, it is on gait, voice, and demeanour, that we must chiefly depend. It must be remarked that they pair; therefore a second hen will be neglected and useless except for eggs.

As a source of profit I cannot recommend these fowl: the eggs are very small, three of them being scarcely equal to an ordinary hen's egg, and the flesh not being likely to please every palate, though indeed it is in tolerable request in the London markets, when the game season closes, its flavour resembling pheasant: still, however, as the Guinea fowl require but little trouble or attention, and their eggs, though of small size, are well flavoured and numerous, they are generally kept wherever there is accommodation for them. The chief objection to them is their *cry*, or scream; and even this, again, has its advantages, invariably predicting a change of weather: they can hardly, however, be kept with other poultry, on account of their pug-

nacity. They have been let out on the heaths and mountains in this country, with a view to their naturalization. During summer they did very well, but were unable to stand the winter.

The Guinea fowl dislikes confinement, and will not thrive unless it has free liberty; where such, therefore, cannot be afforded, it is useless to attempt keeping it.

These fowl are prolific; the hen commences to lay in May, and lays throughout the entire summer; for the table they are in season from February to June. The period of incubation is twenty-eight days; but it is more advisable to keep the Guinea hen entirely for laying, and if you desire to hatch any of the eggs, to do so under the hen of the common gallinaceous fowl. You must keep the male bird away, or he will, like the pheasant, destroy the eggs.

The chicks, while young, require careful management, and must be constantly fed; in a short time they become perfectly hardy. At nine months they are fit for the table.

PEA-FOWL.

A Peacock in full feather, parading on a green lawn, or from the extremity of a terrace-wall, displaying the full length of his gorgeous tail, is one of the most beautiful of living additions to garden landscape. But of fruit he will prove a devourer, not to be guarded against, and both he and his mate are not unfrequently murderous assassins of the young of other fowl. The cock does not attain the full splendour of his plumage until he is three years old, and the hen does not lay until the same age. She lays from five to seven eggs, and sits twenty-nine days. If the first batch of eggs be taken away, she will lay a second, so that by having a hen turkey foster nurse you may manage to have two broods in one summer. The peahen generally chooses a very retired spot, quite out of the way of the peacock, who is often a cruel unnatural father. I remember a peahen at an old mansion-house who regularly made her nest on the roof behind a stack of chimneys. The young must be hatched like Guinea fowl and young turkeys: unless amply and regularly fed they are apt to wander. When fat and hung long enough, they make a delicious and splendid roast. They should be larded or barded with slices of fat bacon, the head and neck with the feathers on, carefully wrapped in paper, and tucked under the wing away from the fire, and when ready set up in purple glory, to match the tail adorned with feathers, neatly stuck in at the last moment, If you wish pea-fowl to agree with other poultry, they must be reared with them.

PHEASANTS.

To hatch pheasants' eggs, employ a bantam hen; leave the young ones with her after hatching for twenty-four hours without disturbance; and then feed them every hour with bread-crumbs, a little bread and milk, hard boiled eggs, lettuce, or young nettles, chopped fine, and eggs from ants' nests. Keep them in a warm dry place, with plenty of fine soft sand. Put a piece of meat in a convenient place, to become fly-blown, and give them a few of the maggots every day. A little boiled rice will be found useful during moulting. Alum curd, made by boiling new milk with a lump of alum until it is of the consistence of custard, is another kind of food, useful in preventing and curing disease, to which young pheasants are subject. If vent-bound, cut off the vent-feathers carefully with a pair of scissors, and anoint the part carefully with sweet oil. The vessels in which they are fed must be kept scrupulously clean.

When full-grown, feed them on buckwheat, wheat, barley, with occasionally Jerusalem artichokes, cabbage, lettuce, and other vegetables. Have plenty of sand on their walk, and a secret place for the hens to lay in, taking care to have bantam or game hens as sitters.

CHAPTER IX.

WEB-FOOTED BIRDS.

(ANATIDÆ).

A FAMILY of web-footed birds whose habits are, generally speaking, aquatic, though some of them are more so than others. I will not enter into any of the varieties of systematic arrangement further than is necessary to identify the birds described with the writings of others; giving them in the following notes the common English names by which they are known. This family of the Palmipedes of Cuvier have a large and broad bill, the edges of which are beset with *laminæ* placed transversely. They are divided into SWANS, GEESE, and DUCKS. The limits of each, however, are not very well defined.

THE SWAN.

Swans (*Cygnus*) are found on the rivers and small pools of fresh water, rather than on the sea or the larger lakes, and, when they do appear on these, they are always found near the shores, and never on the expanse of the broad waters. The chief reason of this is, that they are vegetable feeders, and although their long necks enable them to reach the bot-

tom at considerable depths, they never dive, and they rarely feed upon the land, or in any other mode than by floating on the surface of the water. They are among the most ornamental of all the water birds, on account of their great size, the gracefulness of their forms and motions, and the snowy whiteness of the plumage of those species with which we are most familiar. Swans have, from the remotest antiquity, attracted the attention of poets and other describers, and the ancient fable of their acquiring a musical song when they are dying, instead of the husky voice which they have when alive, is still repeated, though wholly destitute of foundation. That it should be true would, indeed, be contrary to the whole analogy of nature, the voices of pain, and especially at the hour of death in animals, being, without a single exception, unpleasant to the ear. Even those song birds, whose notes are the most mellifluously sweet when they are in good health, are all painful to hear when they meet with a violent death: the only time at which they utter unpleasing sounds is when that catastrophe is approaching them.

In some of the species, the swans approach the geese in many of their characters, while the typical ones differ considerably.

The *Wild Swan*, Whistling Swan, Whooper, or Hooper (*Cygnus ferus*). The bill of this species is semicylindrical, and of a black colour, but with the cere on the base of the upper mandible yellow; the body is white, but with a yellowish tinge on the head and upper part of the hind neck; the irides are brown, and the naked parts of the feet black; the bronchial part of the trachea is very much enlarged and convoluted; the length of the full-grown male bird is rather more than four feet and a half; and the extent of the wings two or three inches more than five feet. The female is less than the male, but of the same colours.

The *Whistling Swan* is a bird very generally distributed over the northern parts of both the eastern and western continents. In severe winters they come south in small flocks to the fresh waters near the shores both of England and France; but it does not appear that they reach the south of Europe, excepting very rarely, and that only when the winter storms are more than usually general and severe. Early in the spring they quit the more southerly places; and in the longitude of the British islands, they do not remain to breed except in the far south, and then only in very small numbers. We are not aware that any have ever been found breeding on the main land, excepting in Caithness and Sutherland; but they were once, at least, more numerous in the Orkney and Shetland Isles, and some of the more northerly of

the Hebrides. In the Faroe Isles, they are, of course, still more numerous; but the great body of them must breed further to the north than these islands; for they arrive there, and also in Shetland, in numerous flocks about the month of October, the time varying according to the character of the season. When the severe weather sets in, they diminish in number by breaking into small parties, and moving further to the south. If the winter is comparatively open there, they continue in considerable numbers upon the fresh-water lakes, feeding upon the submerged roots of aquatic plants, which on account of the stems lying completely down, are very farinaceous in these high latitudes.

The young swans, which are bred in Iceland and other northerly places, are not able to take their departure the first year. They moult in August, at which time they are incapable of flight; and so the people hunt them with dogs, or fell them with clubs, their flesh being much relished in those countries, where dainties are but few.

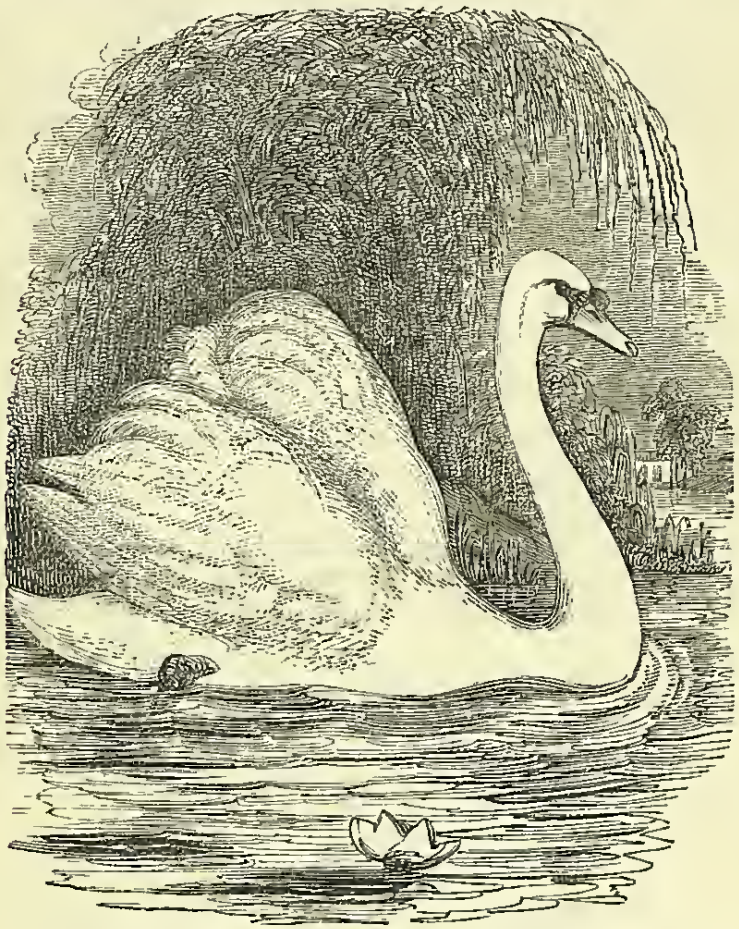
The female swan builds a large but rude nest, very near the margin of the water, but on a place where there is no chance of inundation, and where she can command a view of danger should it approach. From the water she has nothing to fear; and thus, if she finds a little jutting promontory of the land suitable to her purpose, she prefers that, and sits with her head to the land, unless when the state of the weather renders another position more convenient and safe. The eggs vary from four to seven in number. They are very thick and strong in the shell, of a rusty-brown colour, and marked with white blotches about the middle of their length. The incubation lasts for about six weeks. The northern people, as has been said, are fond of the flesh of the cygnets, or young of these birds; but the adults are not relished by them, though much less particular as to the quality of their food than the inhabitants of more favoured climates. They, however, make considerable use of the skins, dressing them with the down upon them, and sewing them together, in which state they form strong and warm garments; or weaving the down into a sort of framing of network, in which state it is almost equally warm, and exceedingly light and pliable. The down, the feathers, and the quills, are also of considerable value as articles of commerce.

The *Mute* or *Tame Swan* (*Cygnus olor*) is "the Swan," by way of eminence; and though differing from the other in the particulars already alluded to, it is nearly similar in the leading points of its economy. It is rather shorter than the Whistling Swan, but longer in the wings,

these measuring about seven feet, or even a few inches more when they are fully extended. The body is rather thicker too in proportion to the length, and it is, upon the average, a heavier bird when full grown, The bill of the mute swan is of a red or salmon colour, with the margins and the basal cere, which swells into a tubercle of considerable size, black; the whole plumage of the mature bird, when on the water in a pure atmosphere, is beautifully white; and few of the living productions of nature are more beautiful than swans, especially when they are upon the small expanses of clear water which occur in many of the rich little valleys in the south of England. Though a majestic creature in its motion upon the water, the appearance of the swan harmonizes best with water which is clear and tranquil, and grasses and green meadows add greatly to the effect.

In a state of nature this species is not so migratory or so polar in the breeding season as the whistling swan. Some of them, especially in the east of Europe, and in Siberia, where the seasons run more into extremes than they do in Britain, are compelled to move southward when the weather is severe; and even in Britain they are sometimes driven from the waters of particular places by the severity of the weather; but where the waters are open they continue on the same grounds for the whole year round, and where they are placed upon ornamental waters in pleasure-grounds, or even in the close vicinity of cities, they show no very strong disposition to shift to more sequestered haunts, at any season of the year. In places that are much frequented they soon become very familiar; indeed they are far from being timid birds under any circumstances. They appear to be quite confident in that power which nature has given them; and, as they have little to fear from enemies, they are not much given to be pugnacious, at least in ordinary times of the year. When, however, they have nests, they not only defend them with great bravery, but attack in the most resolute manner, any animal that approaches, not excepting man himself. The female is a close sitter during her incubation, which is about the same length as that of the Whistling Swan; and while the female sits, the male is very assiduous in watching for the safety of the family. He is ready to resist, and by the most vigorous means to repel, every intruder, not excepting his own species, who cannot come within a short distance of the nest without being attacked. Severe contests often take place between the males upon these occasions, more especially if, as is sometimes the case, there is an odd or unpaired male upon the same water. This odd one is not the assailant; for, as he is not in the guardianship of a female and nest, he does not appear to

have the same exeitement as those whieh have this trust eommitted to them; but if he is attaeked, he is bold enough in self-defenee; and it has been stated, although we will not voueh for the faet, that if he should sueeeed in killing or beating off the legitimate possessor of the ground, even after the ineubation is considerably advaneed, he takes the plaee and diseharges the duties of watehman and proteetor, with the same vigilant assiduity as the one whieh he has vanquished.



DOMESTIC SWAN.

The Swan, as already stated, forms one of the finest ornaments of a suffieiently extensive sheet of water, and a pair will keep down weeds mueh more eheaply and effeetually than any meehanieal appli-anee. An island will be found the best breeding plaee. They require feeding during winter, at least; but, it is better to feed them constantly. A fat young eygnet affords a delicious dish, whieh will

readily feteh ten shillings in the London markets. Swans, as well as all kinds of wild or semi-wild water fowl, must be pinioned, or they will be apt to depart without leave at the improving period of the year. To effeet this operation, find the joint of the bastard wing, whieh will inelude about five flight feathers, introduce a sharp knife between the joints, eut steadily and boldly: no injury will ensue. If you have not nerve enough, any medieal student of your aequaintanee will be delighted to try his "'prentiee hand." The Swan begins to lay at three years old, and sits forty days.

The nest of the SWAN IN A DOMESTIC STATE is very similar, both in plaee and strueture, to that of the Whistling Swan, but the eggs are different; they are of a white eolour, and vary from six to eight in number. The eygnets are grey, and do not aequire their full plumage till the seeond year, and till then they usually keep in company with eaeh other, which they also do with the old birds, uutil the time of pairing again eomes on. The eygnets, while they are in their grey plumage, havo very little of the majestie appearanee of the adult swans. As artieles of food, they are, however, the only ones that are held in mueh estimation at the present time, and there is probably more of the want of rarity than that of nature in them. Taken from the water in their natural eondition, they are eomparatively of little value; but, when they are artifieially fattened, they feteh a high priee in the market. When tame, swans are kept with a view to profit as well as ornament; their down and the quills of their wings are pulled twiee in the year. This is a very eruel operation; but then, the feathers pulled from the live bird are better than if they were taken from it when dead; and, if the operation is performed near the time of the moult, and the birds are well fed, it is not so hurtful to them as might at first be supposed.

Bewick's Swan (*C. Bewickii*). This species has a eonsiderable resemblanee to the common Wild or Whistling Swan, and probably has been often eonfounded with it; but there are suffieient differenees between them, both external and internal, for entitling them to be considered as distinct speeies. It is a smaller bird than the Whistling Swan, in the length of the body, the extent of the wings, and espeeially in the weight, whieh is eonsiderably less in proportion to the dimensions: the bill is of the same eolour, namely, blaek in the greater part of the mandibles, and yellow in the eere, and the general colour of the plumage is white; instead, however, of the dull yellow on the top of the head and the nape, this bird has the front mottled with rust eolour. The ehief natural distinetion is in the bronehial part of the traehea, whieh, instead of having a short convolution in this part of the ster-

num, as in the other, has a large duplicature within the substance, as between the plates of that bone. The habits of this species have been but imperfectly observed: they do not, however, appear to differ much from those of the other Wild Swans, only as the bird is much more rare in this country, and little adapted for long migrations, it is probable that it inhabits still further to the north in the breeding season, but the fact is not established.

The Black Swan (*C. niger*), which is a native of Australia, but has been domesticated in some parts of this country, and appears to bear the climate very well. It is much more of a tyrant on the waters than the White Swan, and will allow no other swimming bird to live in its vicinity. The whole plumage is black, with the exception of the first six quills, which are white; the bill, and a naked space round the eye, are red; the length is about four feet and a half, and the wings rather shorter in proportion than the White Swan, but they are broad and strong. The plan and structure of the nest are about the same as those of the White Swan, and there does not appear to be much difference either in the food or the general habits. The male is particularly watchful of the female when sitting, and of both female and brood when they are on the water; he not only drives off all other birds, but if any animal, or even a human being approaches, he lands and marches forth to give him battle at a distance from the family; his wings are raised ready for the stroke, his feathers are ruffled, and he puts on altogether rather a formidable appearance, only it is rendered not a little ludicrous by the awkwardness of his gait, which makes it appear that walking is really more than he can manage, without any toil or battle in supplement to it. It is probable, however, that the strong excitement that he is under is the real cause of this curious waddling motion, and that it helps to "scare the enemy" not "in," but "from" battle. In this country the young are produced about the same season as those of the White Swan, and the number in a brood appear also to be the same. They are of a blackish ashen grey, which continues the whole of the first year. As a curiosity the Black Swan is all very well, the more especially that it was for such a length of time implicitly looked upon as the impossible bird that was nowhere to be met with; but it has none of the beauty and grace of the White Swan, which must continue to be the favourite as an ornamental bird.

THE GOOSE (ANSER).

Geese are very numerous, as well in species as in varieties. They are more abundant in the polar countries than in the southern regions;

and, with few exceptions, are completely web-footed, and can swim. Swimming is not, however, their proper and peculiar, or, in general, even their chief motion. If the structure of a goose, and the way in which the legs support the body, are compared with those of a duck, we shall perceive a very remarkable difference in the purposes for which they are best adapted. The bodies of ducks are "boat-built," and evidently formed for getting through the water rapidly at a small expense of effort; their legs are placed far backward, so as to strike against the water which follows in their wake; while the Goose is properly a walker, although the power of swimming is added, and in some of the species the two powers are nearly equal, while there may be some in which the swimming predominates.

Geese are also much more exclusively vegetable feeders than the rest of the *Anatidæ;* at least, with the exception of the swans, which are also much more aquatic in their feeding than the geese, for which habit they are well adapted by the greater length of their necks. Geese never dive, nor do they, in many instances, feed below the surface of the water, though they often feed, while swimming, on the seeds and succulent leaves of floating aquatic plants.

The generic characters are: the bill shorter than the head, higher than wide at the base, diminishing towards the tip, and thus having a slightly conical form. The teeth, in the margins and toward the tip of the bill, are conical, and the point of the upper mandible is generally furnished with a nail of harder consistence than the rest, and sometimes differently coloured. They are, generally speaking, polygamous; but there is no great external difference between the sexes. The old males are, indeed, rather larger than the females; but, before they reach maturity the two sexes are very much alike both in size and colour.

Among the many species now known, four are pretty clearly established as natives of this country. The wild geese of Britain are the Grey-lag, the Bean-Goose, the Pink-footed Goose, and the White-fronted Goose. The others, although they have been found in a wild state, are too irregular in their nests to be classed as British species.

The natural habitats of the geese are damp meadows, and tufted marshes which abound with plants, a species of pasture which naturally points out why geese in a state of nature should be very migratory birds,

The common Wild, or Grey-lag Goose (*A. palustris*).—This is generally understood to be the parent stock of all the domestic species of Europe; and, according to all accounts, it is now much

less plentiful in England, even during the winter, than it was formerly. This is, no doubt, in a great part owing to the drainage of the fens, the increase of cultivation, and the greater breadth of land which has been covered with artificial plantations of trees; for the Wild Goose loves humidity, but shuns alike the corn-fields and the woods. In some parts of the north of Scotland, this goose still rears its young; but it is doubtful whether there are any absolutely wild in the fens of England: though, as geese are reared in much greater numbers, and more in a state of nature there, than they are at the farm-yards and on the commons in other districts, they no doubt approach more nearly to the wild state.

When domesticated, highly fed, and left perfectly at ease, geese grow to a much larger size than they ever attain in a state of nature. Various arts, and often very cruel ones, have been, and are still, resorted to for the purpose of fattening them for the table, and especially for enlarging their livers, which, when thus unnaturally enlarged, and consequently diseased, are much prized by a peculiar class of epicures, although it is impossible that any part of animals which are treated in this manner can be wholesome. One mode of managing them is, to nail the webs of their feet to a board on the floor near a strong fire, to sew up the vent, and forcibly to cram them with rich food, until they are at the point of death by suffocation: by this means the liver grows to an enormous size, and the goose itself increases in weight to twenty pound and upwards. The fat of geese principally accumulates externally; and, generally speaking, it is difficult of digestion, and therefore unwholesome. In upper Languedoc, near the Cevennes Mountains, in France, there is said to be a breed which accumulates a great lump of fat on the lower part of the belly, which touches the ground when they walk. In other places there have been breeds that have showed considerable departures from the type of the Wild Goose, not only in colour, but in size, and other particulars, which are understood to be less subject to those casual changes. It is mentioned that, a good many years ago, one family near Highworth, in the county of Wilts, were in possession of a breed of geese, which they nursed and fattened in such a manner that they attained to a very extraordinary and almost incredible size, insomuch that some of them would weigh from twenty to thirty pounds. The owners could scarcely be induced, on any consideration, to part with an egg of this breed; and they sold the yearly produce of the flock to a few opulent families in the neighbourhood, at the rate of a shilling the pound. As an important department of the poultry establishment, the goose, we need hardly

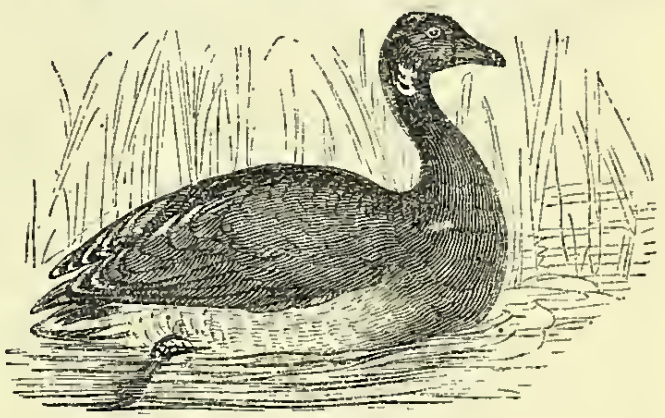
observe, is cultivated in almost every civilised quarter of the world, and, when under proper management, forms a profitable article of the farmer's produce, its quills, down, flesh, and even dung, being all turned to account.

Michaelmas, or *stubble* geese, should immediately after harvest be turned out on the wheat fields, where they pick up flesh very fast; but, when taken up to be fattened, they should be fed with ground malt mixed with water, or boiled barley and water; and, thus treated, they grow fatter than would at first be imagined, and acquire a more delicate flavour than those in the London market. The old breeders may be plucked thrice a year, and at an interval of seven weeks, without inconvenience; but, young ones, before they are subjected to this operation, should have attained to the age of thirteen or fourteen weeks, otherwise they will pine and lose their good qualities. It is scarcely necessary to add, that the particular nature of the food, and the care that is taken of the birds, materially contribute to the value of the feathers and the down. In those neighbourhoods where there is a good supply of water, they are not so subject as elsewhere to the annoyance of vermin; and they furnish feathers of a superior quality. In regard to down, there is a certain stage of maturity, which may be easily discovered, as it is then easily detached; whereas, if removed too soon, it will not keep, and is liable to be attacked by insects and their larvæ. Again, the feathers ought to be plucked, at the latest, before they are quite cold, else they will contract a bad smell, and get matted. Under proper management, and when unmolested by plucking, &c., the tame goose will live to a great age—even, it is alleged, to fourscore years, or perhaps a century.

The Gray-lag is about thirty-five inches in length, the female being somewhat smaller. Its beak is of a pale flesh colour, with the *nail*, or horny tip, white; the iris is brown; the head and neck of an ashy gray; the inner part of the wings pale leaden gray; belly and under surface of neck white; legs of a very pale flesh colour. The chief characteristics of the Gray-lag are the light ashy-blue colour of the outer portion of the wing, and the conspicuous white extremity of the beak. Formerly the Gray-lag resided in Britain all the year round, and bred amongst the fens; but the system of draining so extensively pursued in the fenny counties—as in Norfolk, Cambridgeshire, and Lincolnshire—has gradually driven them away. The Gray-lag wild goose is now rarely to be met with. It formerly was well known, and even bred in Ireland; but is now rarely seen there even in winter.

The Brent Goose (*A. bernicla*) is a much smaller species. It rarely measures more than two feet in length, and about four and a half in the extent of the wings. Its general colour is brownish, with ash-coloured margins to the feathers. This extends over the upper part, the lower part of the neck and the breast, while the remainder of the under part is dappled with ash colour and grey. The head and upper part of the neck is black, with the exception of a spot on each side of the neck immediately behind the throat, which is white, as are also the vent-feathers and the upper and under tail-coverts. The lower part of the back and the rump are also black. The tail-feathers, the quills, and also the feet, are dusky. The bill is dark horn colour, narrow and short, not exceeding an inch and a half. The eyes are light hazel, forming a very striking contrast with the black of the head. The most remarkable external character, however, is the white spot on the back of the neck, and next to that the uniformity of the upper plumage. In the females and young birds, the colours are not so well marked, and the neck spots are mottled with dusky.

This is a more discursive bird than the larger geese, being better winged in proportion to its weight, which seldom exceeds five pounds. The Brent Goose breeds chiefly in the very extreme north. It is found both in the eastern and western continent, and in all probability ranges round the whole shores of the polar sea, the islands in which are its favourite resting places. It migrates southward in the winter, as far as the middle of France; and when the winters are peculiarly severe in the northern countries, the Brent Geese often come in immense flocks, which are very destructive to the wheat fields. Buffon mentions that in 1749 and 1765, which were winters of great severity, Brent Geese attacked the cornfields in such multitudes that the whole inhabitants were raised *en masse*, and had no small labour in driving off and destroying these



BRENT GOOSE.

unwelcome strangers. In mild seasons these birds do not come so numerously as the common wild geese, neither are they so destructive; for, if the marshes are open, they prefer the roots of marsh plants to the *braird* of the wheat fields. We may mention here, as closely connected with the habits of this goose, that their chief attraction to the polar marshes, is not the developed or green vegetation, which appears in those countries during their brief summer, but the hybernating roots. In those countries the plants, marsh plants especially, work more by roots than by seeds; and, though the leaves when they come up are generally coarse, the roots contain a vast accumulation of nutritious matter—far more than those of the larger marsh plants of more temperate countries. This is accumulated as a store for the action of the year, which, under the influence of a never-setting sun, is exceedingly rapid; and the moment that the snow melts and the ice breaks up, the geese are on the grounds, where, by partaking of this rich and abundant supply, they are soon in high condition, notwithstanding their long journey. They breed soon after their arrival, and their broods are out in time to nibble the young leaves of the plants.

Bernacle Goose (*A. leucopsis*).—This species of goose is of some celebrity in the annals of fabulous natural history, being the one which was anciently described as being bred, not in the common way in which birds are, but growing out of the bernacle shell, which is a well-known pedunculated or stalked molluscous animal, having shells at the extremities of the stalks. Those animals are rooted, and they attach themselves to the bottoms of ships and floating wood, as they are thereby carried from place to place. There is always a great deal of drift wood in the North Sea: the storms, while they collect it in some places, scatter it to others, so that the pieces float in all directions, and have very often bernacles on the under sides of them. In violent and long continued storms these bernacled logs of wood are frequently cast ashore; and the same circumstances often exhaust the bernacle geese, who do not come southward in very great numbers, unless the storm drives them. Their exhausted or dead bodies are often cast ashore along with the bernacled logs; and thus, at the time when stories were believed, not in proportion as they were true, but in proportion as they were wonderful, the bernacle shells were set down as producing the geese which came ashore along with them.

The bernacle goose is still smaller than the brent goose, being less than two feet in length, and only a little more than four in the stretch of the wings; but it is not an unhandsome bird. From the tip to the

corner of the gape, the bill is scarcely an inch and a half long, black, and crossed with a pale reddish streak on each side; a narrow black line passes from the bill to the eyes; the irides are brown; the head is small, and, as far as the crown, together with the cheeks and throat, white; the rest of the head and neck, to the breast and shoulders, is black. The upper part of the plumage is prettily marbled or burred with blue, grey, black, and white; the feathers of the back are black, edged with white; those of the wing-coverts and scapulars blue grey, bordered with black near their margins, and edged with white; the quills black, edged a little way from the tips with blue grey; the tail-coverts and under parts white; the thighs are marked with dusky lines or spots, and are black near the knees; the tail is black, and five inches and a half long; the feet and legs are dusky, very thick and short, and have a stumpy appearance. This structure of the feet answers well, however, with some of the habits of the bird, as it is much more of a swimmer than most of the geese; and it does not migrate so far or so much inland.

Its visits to Britain are during winter, and the severer the weather the greater the numbers in which they come. Although naturally shy, they are easily domesticated, and will pair with other species. The Earl of Derby has produced hybrids with this bird and the Canada goose; and also, I believe, but am not certain, with the White-fronted. They are common in Ireland, and have frequently been taken in the neighbourhood of Dublin. From November to February they are not very uncommon on the stall of the London poulterer. The egg is of a greenish white. This bird is very prettily marked.

The Bean Goose (*A. segetum*). This species is the wild goose of the more northerly parts of Britain; and it gets its name, not from any partiality that it has for beans, but from the nail on the tip of its bill bearing some slight resemblance to a small black horse-bean. In its general characters it bears a very considerable resemblance to the grey lag, or common wild goose, and on that account some naturalists have confounded them. They are distinct species, however, and the bean goose does not come quite so far to the south as the other; though it occasionally makes its appearance in great numbers, which are very destructive to the fields of autumn-sown wheat.

The bean goose varies considerably in size; but, generally speaking, it is about two inches shorter, and three or four inches less in extent of wing, than the grey-lag goose. The bill is also smaller in proportion, and more compressed towards the tip. It is of a pale flesh

or orange colour, with the exception of the nail, which is black, and which, as has been said, is the foundation of the trivial English name. This black nail is indeed the principal distinction; for, in other respects, excepting size, which is not a character, there is often a great resemblance between this and the other wild goose. Both mandibles of the bill are toothed rather more strongly than in the other. The eyes are hazel or brownish. The head and neck are ashy brown; the whole of the under part, as far as the legs, is of the same colour, but paler, though on the thighs the colour is deeper. The forehead is speckled with white, behind which the feathers are dusky brown. The back is ash-colour; the lower part of the belly, upper and under tail-coverts white; the scapulars brown ash-colour, edged with white; the greater quill-feathers black; exterior webs grey; secondaries cinereous grey, margined with black on the outer webs. The coverts are grey, excepting the larger ones, which are grey, tipped with white. There appears to be some little variation in the plumage of these birds: in some, the bill is of a dull brownish red; the upper part of the back, scapulars, and wing-coverts brown, dashed with cinereous, and tipped with white; the greater quills, plain dusky black; secondaries grey, tipped and margined with white. On the elbow of the wing there is a callous knob. The windpipe is enlarged about the middle, and its branchings into the lungs are short and inflated. These characters are quite sufficient to distinguish this species from all the others; and there is another character about them which is peculiar, that they are more impatient of restraint, and therefore not so easily tamed. They come to the British islands in the autumn, spread themselves over the country, frequenting the pools on the moors, but dispersing themselves during the day in the fields of autumn wheat, on which they levy pretty heavy contributions.

The bean goose breeds in Britain. Mr. Selby says (speaking of an excursion in the summer of 1834), "We were agreeably surprised to find that the bean goose annually breeds upon several of the Sutherland lakes. The first intimation we received of this interesting fact was at Lairg, where we were informed that a few pairs bred upon some islands about twelve miles up Loch Shin. We, accordingly, took boat the following morning, and, upon arriving at the place, discovered a single pair, attended by four or five young goslings."

Mr. Selby states, also, that he found others with goslings on the islands of Loch Laighal; and, at Tongue, some goslings that had been hatched from eggs taken at Loch Laighal, following a hen. He was

also informed that these, when full grown, remained almost as tame as eommon geese, but would not intermix or breed with them. Mr. Yarrell also mentions that these birds breed in some parts of Westmoreland, and in the Hebrides; also, that a pair of Bean geese produeed, in St. James's Park, a brood in 1842. The egg of the Bean goose is smaller than that of the eommon goose, but, in every other respeet, similar.

The Bean goose is common in Ireland and in North Wales during winter. The north seems to be its favourite dwelling-plaee; and it is very numerous in Norway and Sweden, as also in Finland, breeding among the islands. It is a frequent visitor, also, to the eold elimes of Ieeland, Greenland, and Nova Zembla. In the eentral parts of Europe it is rare; but it is to be found in Holland, Germany, Spain, Italy, and Franee, where it is ealled the "Harvest goose" (*Oie des moissons*), from its partiality to corn and the destruetive effeets produeed by the ravages of large floeks feeding upon the green erop. The Bean goose is somewhat less than the Gray-lag; and it is also mueh slighter, and apparently better adapted for long flights. When flying, the wild geese usually adopt a peeuliar order. If in numbers of four or five only, they usually fly in a straight line, with the leader (usually a vigorous and experieneed gander) flying first. If the floek be numerous, they assume a wedge shape, like the letter ⊱ plaeed horizontally, the leader being at the apex. The praetice must have arisen from the birds having diseovered by experienee, or having been, perhaps, taught by instinet, that the *angle* thus presented to the air was ealeulated to diminish atmospherie resistance.

The White-fronted Goose (*A. albifrons*). There are some doubts whether this speeies, whieh eomes to Britain in winter rather as an aeeidental straggler than as a regular visitant, may not be the young of the snow goose. At least this is the opinion of some of those who have written on the subject, although others consider it a distinet species. Its breeding in this eountry in a wild state is very doubtful, but Mr. Yarrell states, that those kept in the Zoologieal Soeiety's Gardens, bred in the year 1842. When they come to the British islands they do not attaek the eornfields, but eonfine themselves to the more humid parts of the marshes; and as the small floeks that do make their appearance are generally of one eharaeter, the probability is in favour of their being distinet, though they certainly have the same habit in feeding as the snow goose, and are the laughing geese of those who deseribe British birds.

The length is about two feet four inehes, the extent of the wings

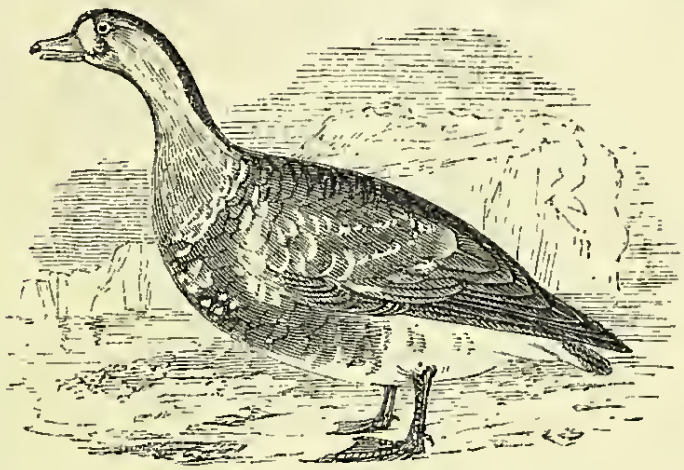
about four feet and a half, and the weight about five pounds. The bill is thick at the base, of a yellowish red colour, with the nail white. A white patch is extended over the forehead from the base of the bill and corners of the mouth. The rest of the head, neck, and the upper parts of the plumage in some specimens are dark brown, and each feather is margined more or less with that colour; the primary and secondary quill feathers are of the same, but much darker, and the wing-coverts are tinged with ash. The breast and belly are dirty white, barred with irregular patches of very dark brown, and tipped with lighter shades of the same colour. The tail is horny ash-coloured brown, and surrounded with white at the base; the legs yellow.

Of these four varieties, the Gray-lag and the White-fronted are obviously the originals of our domestic geese. On this subject I shall quote Mr. Yarrell, who establishes the question in a manner at once simple and satisfactory:—"Almost all the species of geese, swans, ducks, and mergansers," he says, "are remarkable for the peculiar form of their organ of voice, or windpipe; and so peculiar, as well as permanent, is this anatomical character, that the males of the British species of this family, consisting of about forty, almost all of them, but more particularly the swans, ducks, and mergansers, can be immediately identified by the examination of this organ alone." Again:—"In the wild Gray-legged goose, the tube of the windpipe is nearly cylindrical; and this form of trachea I have frequently found, on examination of domestic geese intended for the table; but I have also frequently found the tube flattened at the lower portion—a character which is constant in the *Anser albifrons*, or White-fronted goose. The legs of many of our domestic geese are orange coloured, like those of the White-fronted. The legs of the wild Gray-lag goose are of a pale flesh colour."

I have never seen any specimens of the Albifrons in a state of domestication; but I had recently the pleasure of seeing two very fine and remarkably tame specimens of the Gray-lag, in the Gardens of the Zoological Society of Dublin, the property of Mr. Nolan. There are, at present, I understand, only *three* specimens of this interesting variety in a state of domestication in the British islands. The third is the property of Lord Oxford.

The Red-breasted Goose (*A. ruficollis*). This is unquestionably an eastern species, and in the British islands it occurs only as a straggler. It is one of the most beautiful of the whole genus, both in its figure and in the markings of its plumage. It is above twenty

inches in length, and about three feet ten inches in breadth. The bill is short, and of a brown colour; the nail is black; irides yellowish hazel; the cheeks and front dusky, speckled with white; and there is a white spot occupying the space between the bill and the eyes with a black stripe beneath it, which is bounded above, on each side of the head, by a black line which falls down the hinder part of the neck towards the back; the chin, throat, and crown of the head are also black. Two stripes of white fall down from behind each eye, on the sides of the neck, and meet in the middle; the other parts of the neck and the upper part of the breast deep rusty red, and the latter terminated by two narrow bands of white and black. The back and wings are dusky; the greater coverts edged with grey; sides and lower part of the breast black; belly, upper and under tail-coverts white; legs dusky.



THE RED-BREASTED GOOSE.

So far as is known, this species of goose belongs only to the eastern portion of those arctic regions in which this genus of animals have their principal abode; at least we have no distinct account of their occurrence in America. The very few specimens which have hitherto been found in the British islands have been met with on the eastern side, and in the southern parts rather than in the northern. This is of itself sufficient evidence that the birds do not come from America, or from the polar regions of western Europe, but that they find their way across the low countries to the southward of the Baltic.

The Egyptian Goose (*A. Egyptica*). This also is a very beautiful species, resembling in its general form and characters the Bernacle and Brent geese, though its colours are more brilliant and the turn of the wing is furnished with a small spur. It has been long known in Egypt, and in ancient times it was much venerated in that country on

account of the attachment which it has for its young. The ancient Egyptians style it the Fox goose, but it is not easy to say for what reason. It has no character in common with any species of fox; and though foxes are particularly fond of all species of geese, it does not appear that they have any more partiality for this one than the rest. It is understood to be rather discursive, and on that account it is with difficulty retained in a domesticated state. It also suffers more from severe cold than any of those species which are natives of the north; and hence we may conclude that it does not in any of its migrations reach the cold latitudes. The length of this species is two feet two inches and five-eighths; breadth four feet four inches; weight six pounds. The bill is of a reddish colour, and, including a protuberance on the base of the upper mandible, is two inches in length; the nail black, nostrils dusky, irides pale yellow; a dark reddish chesnut patch surrounds the eyes and the base of the bill; the crown of the head and the cheeks are of a dull dirty white, mixed with indistinct spots of rusty brown; the rest of the head, from the nape downwards over the whole neck, is of a dingy chesnut, mixed and tipped with a lighter colour. There is a reddish chesnut patch on the breast, the upper part of which, with the shoulders, scapulars, and sides, are pale brownish yellow, beautifully marked or pencilled with dusky waved lines; the lower part is less distinctly marked, and appears of an ash grey colour; the belly white, as also are the wing-coverts; the greater ones are crossed or barred with a black line about half an inch from their tips. The secondary quills are clear reddish chesnut; those of the primaries, which join them, forming the speculum which in varied lights are either of a resplendent green or purple; the rest of the first quills, the back, and tail are black; the under coverts of the latter pale chesnut; the legs are long, and, as well as the webs, are of a pale flesh-colour; nails black.

It is now generally admitted to be a British bird, though for a long time such specimens as were shot in England were supposed to have been only individuals escaped from confinement. They breed freely in captivity, and lay eggs of a dull white colour, tinged with buff. Yarrell relates that, "in the summer of 1838, an Egyptian goose, in the garden of the Zoological Society, paired with a Penguin drake, and the eggs were productive. The same two birds were kept together in the following season, and the result was more productive eggs. The young birds were preserved, and kept by themselves experimentally. In the following season many eggs were produced between these hybrid brothers and sisters; the female sat steadily, but

the eggs were not productive, and those examined exhibited no appearance of embryotic formation."

This is a very beautiful bird, but wild and extremely pugnacious in the poultry yard. It is the "Vulpanser," the goose of the Nile—the hieroglyphic goose of the ancient Egyptian temples.

The Canada Goose.—In the slenderness of its make, and the form of its neck, this bird somewhat approaches the swan. The back and wing coverts are dull brown, each feather having a whitish tip; sides pale ashy brown; upper part of head and neck black, with a broad patch of white spreading from the throat over the lower part of cheeks on each side; the bill is black; legs and feet grayish black. This bird is easily naturalized amongst us, and affords good flesh for the table; in captivity it readily pairs with the common gray goose, and the young are superior to either parent in point of size. The principal objection to the breeding of the Canada goose as a member of our poultry establishment, is its not being prolific, and hence not affording promise of being profitable.

The flesh of these wild geese with this solitary exception, that it is fishy to the taste, might, during the season of their visit to us, be made a very profitable *industrial resource* for the inhabitants of the west coast of Ireland; but this fishy taste renders it unfit for the table until it has undergone the process of being interred in the earth for a couple of days; this has the effect of removing this rank flavour—*parboiling* or immersing in boiling water for a short time previous to roasting, is also an improvement. The goose is a bird of no mean consequence in history. The Roman geese gave warning of the approach of the foe, and saved the Capitol; and it is from this circumstance, according to some, that this bird has since been a favourite Christmas dish. On account of this valuable service rendered by the goose to the Roman state, it had the honour of being eaten with great pomp at important public festivals; amongst which were the *Julian* games. The Romans introduced the goose into Britain; *Yule*, the Scotch term for Christmas, is derived from *Julius*, and hence the goose is a Christmas dish. I confess I think this a little far-fetched, and suspect the true reason to be, that at that period of the year the goose is in the best condition, and fittest for the table.

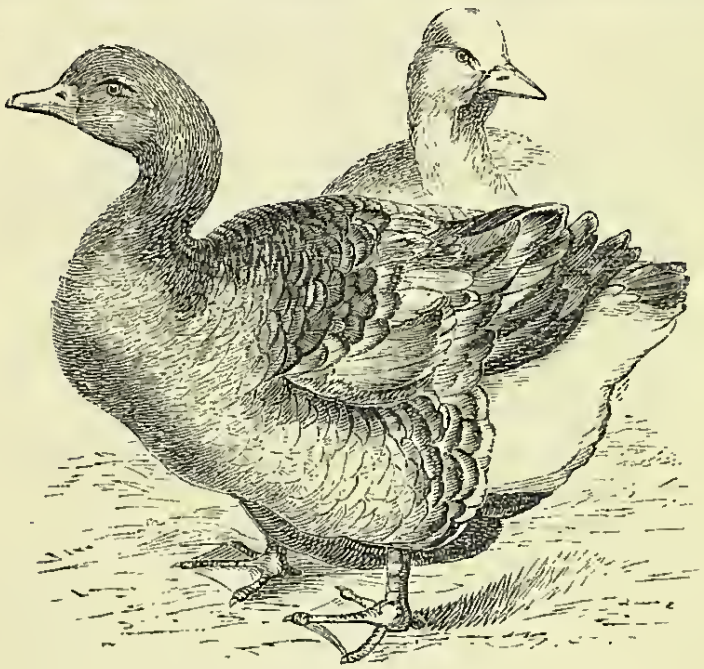
DOMESTIC GEESE, AND THEIR MANAGEMENT.

Amongst the varieties of our common domestic goose we must first describe one which, though of comparatively recent introduction into the British islands, and as yet not generally to be met with as an

ordinary inhabitant of our farm-yards, bids fair, from its unusual size, and capacity of carrying flesh, shortly to supersede every other in the estimation of the fancier or breeder. This is

THE TOULOUSE GOOSE.

This bird was originally imported from the Mediterranean by the Earl of Derby, and is known indiscriminately by the names of Mediterranean, Pyrenean, or that of Toulouse, which I have here given it. This bird is chiefly remarkable for its vast size—a property in which it casts every other known breed far into the shade; it is, indeed, the MAMMOTH of geese, and is to be regarded as a most valuable addition to our stock. The prevailing colour of the Toulouse goose



TOULOUSE GEESE.

is a slaty blue, marked with brown bars, and occasionally relieved with black; the head, neck, as far as the beginning of the breast, and the back of the neck, as far as the shoulders, of a dark brown; the breast is slaty blue; the belly is grey, as also the under surface of the tail; the bill is orange red, and the feet are flesh colour. There can be little doubt of this valuable bird being the unmixed and immediate descendant of the Gray-lag, and it was, indeed, at once pronounced to be such by the Royal Zoological Society of London, at

their poultry exhibition of June, 1845, when the pair figured above, the property of Mr. Nolan, of Dublin, obtained the first prize.*

In habit the Toulouse goose resembles his congeners, but appears to possess a milder and more easy disposition, which, I need scarcely add, greatly conduces to the chance of his early fattening, and that, also, at little cost. Of his other peculiarities I need only observe, that the *curl* of plumage on the neck comes closer to the head than in the common geese, and that the abdominal *pouch*, which, in other varieties is attendant only upon age, exists in these birds from the shell; the flesh of the Toulouse goose is said to be tender and well flavoured; they are however, as yet, rather too scarce to permit of ordinary persons trying the experiment, a pair of young, half-grown birds, costing from three to five pounds. As a cross with our common domestic goose, I am certain they will be found most valuable, and we may thus expect eventually to arrive at a degree of perfection not hitherto anticipated. It is, however, proper to state, that Mr Dixon considers this to be no species or variety, but merely a well grown specimen of the common goose, raised in warm weather, and amply fed, and he is probably correct; as I have reason to believe that we diminish the size of our geese, and other poultry, by killing them off before their maturity.

The Chinese Goose (*A. Cygnoides*). This species is not called cygnoides, or swan-like, from any actual resemblance that it has to a swan in any other respect than in colour; and that is not constant, for though it is sometimes entirely white, it is subject to great variety of shade. Though specimens have been brought from China, it is perhaps not very correctly styled the Chinese goose, inasmuch as it is found in many other parts of the south-eastern world, from China to the Cape of Good Hope, and it is said, from New Zealand, though it does not appear to be met with in New Holland.

Several other species of southern geese are mentioned as being found on the Falkland Islands, on Terra del Fuego, and some other places of the southern lands; there have also been others brought from South America; but all these are too little known, we are too little acquainted with the migration of birds in the southern hemisphere, and those migrations are in themselves on so small a scale compared with the migrations in the north, that all that could be said about

* These fine birds also obtained the prize at the exhibition in the Royal Dublin Society's yard, April, 1846, and subsequently at that of the Zoological Society of London, in the same year, when they were purchased by his Royal Highness Ibrahim Pacha, and taken by that prince with him to Egypt.

those birds would be little else than a description of colours. There are, however, some other species which require a brief notice, because they deviate in some respects from the typical characters of the genus.

These species which deviate from the proper character of the geese in many points, but which still essentially retain that character in others, may be divided into two sections: First, those which form a sort of intermediate link between the geese and the swans; and secondly, those which form a similar link between the geese and the wading birds, more especially the Crane family, or perhaps the Herons. We shall take them in the order now stated, without being very particular as to the correctness of the names, because, though we are not quite satisfied with the existing ones, we do not feel ourselves called upon to contrive new ones, as our object is not to make systems but to give useful information.

In addition to the Chinese Goose, already described, there are three subvarieties, each presenting striking points of difference, and yet being sufficiently alike to justify me in classing them together. These are—

1. The Hong Kong.—This bird has a large horny knob on the bill and forehead; its prevailing colour is gray, with a longitudinal stripe of a deep brown running above the back of the neck. The legs are of a red colour, whence it is sometimes distinguished as the "Red-legged China goose." This is the same long known amongst us under the erroneous name of the "Poland goose."

2. The Black-legged Chinese Goose. Also knobbed, and usually with a *white edging* round the *knob*, somewhat similar to that of the wild breed called the "White-fronted goose."

3. The White Chinese Goose. A very handsome bird, knobbed as the rest, of a snow-white colour, and with legs of a bright orange red.

These geese are inferior in size to the Toulouse, but nevertheless very fine birds, and worthy the attention of the breeder. The white variety, especially, with red legs, is very beautiful, and would form an appropriate ornament on a piece of water. The flesh of the Chinese goose is also good; they feed well, fatten easily, and are very prolific.

Of our ordinary and well known domestic geese there exist but two sorts, whose only distinction seems to rest in their relative size, they being divided into the *large* and *small;* and by some, according to their colour, into the *white* and the *gray*. These divisions are, to a certain extent, arbitrary; as out of one clutch you will generally find

the several varieties, both as to size and colour, that you seek. I may, however, inform the reader that the best sorts of geese are those which vary least in colour. Those approaching most nearly to the primitive stock, are the birds which every best judge will prefer breeding from. *Gray* is the best colour as coming nearest to the original Gray-lag; white is not quite so good; but avoid *mixed* colours; they will not prove so prolific, and the young will be more difficult to feed up to the required standard.

I have heard it recommended to try the experiment of crossing with the original wild stock. This would, no doubt, be a most excellent plan; but, unfortunately, the only wild geese now within our reach, unless, indeed, on very rare occasions, are the Bean or the Brent goose birds even *lighter*, and less adapted to the purposes of the breeder, than the stock more immediately within his reach. The Gray-lag would be the mark; but it is now so scarce that but three specimens are known at present to be in a state of confinement in Great Britain. This was doubtless the plan resorted to by the Spaniards, whom we have to thank for our recent invaluable acquisition of the Toulouse variety. All we have to do now is to avail ourselves, as far as possible, of the superb cross thus brought within our reach; and we may, ere long, bring up our common breed of gray geese to equal that of the continent.

With respect to the favourite colour of which the careful breeder should choose his geese, much has been said. I have merely to recommend that my readers avoid *party-coloured* birds; let them be either gray or white, but do not select birds of two colours; and the old and practical Markham agrees with me in this. "The largest is the best, and the colour should be white or gray, all of an paire, for pyed geese are not so comfortable, and black are worse."

It would be an omission were I to neglect mentioning a singularly large and beautiful variety of geese, exhibited recently at our Irish cattle show, by Mr. Nolan, of Dublin, and called by him the "*white Irish geese.*" These birds are of a pure white colour, are fully equal in bulk to the best specimens of Toulouse, and are likely to prove a most valuable addition to our stock.

As to breeding geese. These birds, as has been ascertained by M. St. Genis, will *pair* like pigeons; and even if the number of ganders exceed that of the geese, no noise or riot takes place, mutual choice being evidently the ruling principle. Amongst other experiments tried by M. St. Genis; he left, besides the patriarch of the flock, two of the young ganders, unprovided with mates, but still those couples that had

paired kept constantly together, and the three single ganders never attempted to approach any of the females during the temporary absence of their lords. M. St. Genis also remarked, in the course of his observations, that the gander is more frequently *white* than the goose.

Some writers recommend a gander to be mated with from four to six geese. As I have already remarked, when treating of poultry, this must entirely depend on the object the breeder may have in view. If he desire eggs, and eggs alone, one gander is plenty for six or even eight geese. He may, indeed, abandon the *unnecessary* trouble of keeping a gander at all, but just only occasionally send his geese to his neighbour's. It, however, so happens, that keeping geese for the produce of their eggs alone, is anything but profitable; and hence these must be rendered duly fertile; and, to effect this, one gander to an almost indefinite number of geese will not answer. For the purpose of hatching, a gander should be mated with, at most, four geese. Let him be, if of the ordinary kinds, amongst which colour varies, of a pure white or ash-gray colour; but not at all of *two colours*. Let his size be large, his gait active, his eye lively and clear, his voice ever ready and *hoarse*, and his demeanour full of boldness and impudence. Select the goose for her *weight of body*, steadiness of deportment, and *breadth of foot*—a quality that, however it may appear *unfeminine*, happens, in the instance of geese, to indicate the presence of such other excellence as we require.

The goose deposits from ten to twenty eggs at one layer; but, if you do not desire her to sit, you may, by removing the eggs as fast as they are laid, and, at the same time, feeding her highly, induce her to lay on from forty-five or fifty. This is, however, unusual, and, I may add, that it is unprofitable. When tolerably well cared for, geese may be made to lay, and even hatch, three times in the year. This care consists merely in high feeding and good housing early in the spring, so as to have the first brood early in March; but I would rather have two good clutches reared than three bad ones, and I am, therefore, more disposed to recommend patience and moderation.

The goose will, when left to the unassisted promptings of nature, begin to lay about the latter end of February, or the beginning of March. The commencement of the laying may be readily foreseen by marking such geese as run about carrying straws in their mouth. This is for the purpose of forming their nest, and these individuals are about to lay. They should, then, of course, be watched, lest they drop their eggs abroad; on which account Mascall recommends trying the geese *manually* over-night, and confining such as you find ready

to lay. Once a goose is shut up, and compelled to lay her first egg of that laying in any particular nest, you need be at no further trouble about her; for she will continue to lay in that spot, and will not stray on any account elsewhere.

We can always detect the inclination of the goose to *set* or *hatch*. This is known by the bird keeping in the nest after the laying of each egg longer than usual. The hatching nest should be formed of straw, with a little hay as a lining; and so formed that the goose will not fling the eggs over the side when in the act of turning them. You need not banish the gander; on the contrary, let him remain as near the nest as he chooses: he will do no mischief, but will act the part of a most vigilant guardian. About fifteen eggs will be found as many as a good-sized goose can properly cover. Do not meddle with the eggs during incubation, and do not meddle with the goose; but, as she is somewhat heavier than the hen of a domestic cock, you may leave her food and drink rather nearer to her than is necessary with common poultry, as, if she chanced to absent herself from her eggs sufficiently long to permit them to cool, she might become disheartened, and desert her task altogether. It is, however, unnecessary to put either vinegar or pepper in her food or water, as recommended by some, or, in short, to meddle with her at all.

The goose will sit on her eggs for nearly two months; but the necessary period of incubation being but one, the early hatched goslings must be removed lest the more tardy might be deserted. About the twenty-ninth day the goslings begin to chip the shell; and if their own powers prove inadequate to their liberation, aid may be rendered them, and that, also, with much less risk than in the case of other young birds, the shell and its membranes being very hard and strong, and the young themselves also hardy, and capable early of enduring hardship. The best plan is to have the eggs set, of as nearly as possible equal freshness, that they may be hatched at the one time.

On first being hatched, turn the goslings out into a sunny walk, if the weather will permit of such procedure; but do not try to make them feed for, at least, twelve hours after leaving the shell. Their food may then be bread soaked in milk, porridge, curds, boiled greens, or even bran, mixed with boiled potatoes, taking care not to give the food in too hot a state, while you equally avoid giving it cold. Avoid rain or cold breezes; and see, therefore, that the walk into which you turn the young goslings be sheltered from both wind and weather. The goslings should also be kept from water for at least a couple of days after hatching. If suffered too early to have free access to water,

they are very liable to take *cramp*—a disease which generally produces permanent lameness and deformity, and but too frequently proves fatal.

Geese should have an enclosed court or yard, with houses in which they may be shut when occasion requires. It is better, however, to confine them as little as possible; and, by suffering them to stroll about, and forage for themselves, the expense of rearing them will fall comparatively lightly on you, so that you will not be conscious of any outlay. Geese require water, and cannot be advantageously kept when they cannot have access to it; still, however, I have known them thrive where they had no access to any pond or river, but had only a small artificial pool, constructed by their owners, in which to bathe themselves. When geese are at all within reach of water, they will, when suffered to roam at liberty, usually go in search of, and discover it, and will, afterwards, daily resort thither. I have frequently myself seen flocks of geese travelling noisily along the road between Harold's-cross and the canal, in the morning, towards the water, and in the evening on their return home. Though the birds are thus fond of water, all damp about their sleeping places must be scrupulously guarded against. Grass is as necessary to the well-being of geese as water; and the rankest, coarsest grasses, such as are rejected by cattle, constitute the goose's delicacy. Such grasses as they prefer will be found on damp, swampy lands, of which, perhaps, no more profitable use could be made. The stubble-field is, in its season, an excellent walk for geese; for they there not only find the young grass and other herbage springing up amongst the stubbles, but likewise pick up much corn that would otherwise be lost. When the stubble-field is not to be had, there is usually something in the kitchen-garden that would be wasted if the geese were not turned in; and, observe, that this is the only season when these birds can be suffered to enter a garden; for they are very destructive both to farm and garden crops, and even to young trees. Geese do not answer to be wholly fed on such green food as they can provide for themselves; but if they get a few boiled potatoes occasionally, bruised up with a little bran, and not given too warm, they will be raised for the market at scarcely any cost, and will, consequently, be found very profitable to the farmer. Market gardeners should never be without geese, which would consume all their refuse, and bring money into their pockets, in return for their consumption of what would otherwise be wasted.

Various measures have been adopted for fattening geese. Goslings

produced in June or July, will fatten without other food than what they will have afforded them on the stubble-fields, as soon as they are ready to consume it; but, if you are in haste, give potatoes, turnips, or other roots, bruised with meal, at least, once daily. The goose is very voracious, and only requires to get plenty to eat in order to accumulate fat. Geese, fed chiefly on grass and corn, as I have described, do not, perhaps, attain the same bulk with such as are crammed; but their fat is less rank, and they are altogether much more desirable for the table.

Early geese require home-feeding, as they have no stubble-fields. The London feeders, therefore, when they receive goslings from the country about March or April, feed them, first, on meal from the best barley or oats made into a liquid paste, and, subsequently, with corn, to give greater firmness and consistence to their fat.

M. Parmentier describes the French process of fattening. This consists in plucking the feathers from the belly, giving them abundance to eat and drink, cooping them up closely, and keeping them clean and quiet. The month of November is the best time to fatten geese. If the process be delayed longer, the pairing season approaches, which will prevent the birds being brought into condition.

In Poland, geese are, with this view, put into an earthen pot without a bottom, and of such a size as not to allow the bird to move; they are then fed on a paste made of ground barley maize, buckwheat, boiled potatoes, and milk; the pot is so placed that no excrement remains in it: and the birds get very fat in about a fortnight. Even these modes appear to me cruel and unnecessary; and geese may be made fat enough for any purpose (and, indeed, too much so for the taste of most persons) by keeping them in coops in a dark place, and laying before them as much nutritious food as they can eat. This is certainly done by our continental neighbours; but then, as soon as the bird's appetite begins to flag (which is usually in about three weeks,) they are forcibly crammed by means of a tin funnel, until, in about a month, the poor birds become enormously and unhealthily fat. They must then be killed, or they would die of repletion. By this process a disease of the liver is induced, in consequence of which that organ attains an unnatural size, and is regarded as a *bonne bouche* by the gourmand. Ordinary geese may readily be fattened, without cramming, to fourteen or fifteen pounds; cramming will bring up their weight to eighteen or twenty; but the excess consists of rank *fat*, and the flesh is deteriorated in quality, becoming actually unwholesome. The Toulouse geese readily fatten, without

any cramming, up to twenty-five or even occasionally thirty pounds weight.

In some countries, the barbarous custom of plucking live geese for the sake of their feathers is resorted to. I am sorry to have to say that this cruel practice still obtains extensively in Ireland, and in Lincolnshire in England. Of its barbarity, I presume I need say nothing; but I may observe, that geese so treated usually become unhealthy; many of them die; and even of such as survive, the flesh is rendered tough and unwholesome. If it be ever true, as is asserted, that the quills cast in the natural process of moulting are of inferior quality, why not *clip* them away close to the skin before that operation of nature begins? Then the geese will only require warmth and housing if the weather be not mild, and you will have the feathers and the geese both unimpaired in quality, and your consciences unburdened by any reminiscence of inhumanity on your part.

THE DUCK (ANAS).

Wild Ducks.—Ducks properly so called admit of a natural division into three groups, two of which have distinctive characters, while the third, which is intermediate, partakes somewhat of the character of both. This distinction is at once structural and strongly indicative of the habits of the bird, the one consisting of species which have the toes webbed together, the other of those which have the back toe loose or separate from the others. The third group alluded to, partakes more or less of the characters of each; in common language, however, the General Character Duck founded upon the Mallard or Common Wild Duck, may be considered as typical of the whole three. The older naturalists divided these into Sea Ducks, being more perfectly web-footed, feeding principally in salt water, diving much in feeding, having a broad bill bending upwards; and Pond Ducks, haunting ponds and pools, having a straight and narrow bill, a very little hind toe, separated.

The whole tribe of Ducks, whether aquatic or more landward in their habits, find their food more by the sense of touch than by sight, and the bill is a very beautifully organised instrument for that purpose. It is covered by a sentient membrane; and the edges, which come in contact with foreign substances, are covered with papillæ, and abundantly furnished with nerves, so that when a duck dabbles in the water, the feeling in the bill enables it to distinguish eatable substances from the sludge and pebbles with which they are mixed.

The Duck in a domesticated state is an interesting and valuable

bird, and an important object in rural economy. They are more intelligent than most races of ornamental poultry, and from their habit of feeding they are much less destructive, if they do not materially assist the efforts of the husbandman. When kept in a proper situation, have due access to pure water, and are fed with proper food, they are also very profitable animals; and though the flavour of their flesh is peculiar, and the fat, especially of the aquatic species, is oily and indigestible, yet they are far from unwholesome. If they have access to running streams, or even a pond of clean water, it is to be preferred, though even the ponds usually attached to farms answers very well for ducks. Where ornamental pieces of water exist in parks or pleasure-grounds attached to a gentleman's residence, ducks may be introduced with very pleasing effect, and this not only with the domesticated varieties, but even with those species which are in their natural habits the most aquatic. Even the Migratory Duck may be attracted permanently on ornamental waters and tamed. In the wild state little is known of the duck: the habits of the whole race in the breeding season is retired and silent, and as they breed in places not easily accessible to man, it may be doubted if the accounts of naturalists are to be relied upon. It has been stated that the MALLARD has been hooked instead of a trout in sedgy streams in the Highlands, and in situations where the voice of the Wild Duck had not been heard for months; therefore, it is neither impossible nor unlikely that the species described as being only winter visitants may be constant residents with us. The males are peculiarly retiring and silent after the pairing season, and the female does not come abroad till she can launch her ducklings on the waters.

I shall now notice a few of the leading species, beginning with those which have the hind toe plain, and without any membrane or web; these have the legs articulated more forward, and the *tarsi* larger and rounder; the toes shorter, and the whole foot more adapted for walking: they have also the wings larger, and the means of flying more developed than in the diving species. Towards the end of the year ducks flock in large numbers to the estuaries and low flats on our coasts, attracted by the sludgy ground, which is alternately covered by the tide and left dry by its receding. These places contain, during the winter months, vast quantities of animal matter, washed down by the inland waters or left by the retiring tide. On this debris the Wild Duck in all its varieties makes its annual harvest-home. In these spots are found the decoys in which man wages war with the wild fowl in all its varieties.

The decoys consist, in the first place, of an expanse of water, which is called the pond, and which is placed in the shelter of reeds, and, generally speaking, also of bushes. The banks of the pond are left clear for some little way, so that the birds may rest upon land, and, in short, this portion of the contrivance is made as tempting as possible, as much of the success depends upon this requisite. But, though the ducks resort to the pond in vast numbers, and pass the day in an inactive state, yet great skill, or, at all events, practice, is required in examining the pond, because they are exceedingly watchful, take wing on the least alarm, and do not readily settle. The sense of smelling is remarkably acute in those birds, as one might naturally suppose, from the margins of their bills being so copiously supplied with nerves. In consequence of this, when it becomes necessary to approach them on the windward, it is usual to carry a little bit of burning turf, the acid smoke of which counteracts the smell of the carrier, which would be sufficient to alarm the birds, except for this precaution. The inland extremity of the pond is formed into pipes, or funnel-shaped channels, which narrow gradually, and have at the end a permanent net placed upon hoops. This net forms the trap in which the birds are taken often in vast numbers at one time. In order that the decoy may be worked in all weathers, it is necessary that there should be one to suit each of the prevailing winds. We need not farther go into the details of this mode of bird-catching. The ducks are enticed by tame ones, which are trained for the purpose; and it is from them that persons employed to entice others to their injury are called decoy-ducks

These birds may be taken from October till the end of February, between which time and the following October operations are prohibited.* Besides these decoys, there are, in the places where ducks are numerous, many of the country people who shoot them. They are called *punt-shooters*, or *punt-gunners*, in the creeks and openings of the streams in the lower part of the Thames estuary; and as they ply night and day, according as the tide answers, their labour is very severe. In the south of England it is a still more serious labour; and as the following account, by Gilpin, is very characteristic, we shall introduce it:—"The drawn up coast between Hampshire and the Isle of Wight is peculiar, consisting, at ebb-tide, of vast muddy flats covered with green sea-weed. It affords the fowler an opportunity of practising arts perhaps not elsewhere resorted to. Fowling and fishing are, indeed, on this coast, commonly the employments of the same person. He who, in summer, with his

* A volume of this series, "The Sportsman," will enter more particularly into the History and Habits of the Game Birds and other *Feræ Naturæ*.

line or net, plies the shores when they are overflowed by the tide, in winter, with his gun, as evening draws on, runs up in his boat among the creeks which the tide leaves in the mud-sands, and lies in patient expectation of his prey. Sea-fowl usually feed by night, when, in all their multitudes, they come down to graze on the savannahs of the shore As the sonorous cloud advances (for their noise in the air resembles that of a pack of hounds in full cry), the attentive fowler listens which way they bend their course. Perhaps he has the mortification to hear them alight at too great a distance for his gun (though of the longest barrel) to reach them, and, if he cannot edge his boat round some winding creek, which is not always in his power, he despairs of success that night. Perhaps, however, he is more fortunate, and has the satisfaction to hear the airy noise approach nearer, till at length the host settles in some plain upon the edge of which his boat is moored. He now, as silently as possible, primes both his pieces anew (for he is generally double armed), and listens with all his attention. It is so dark that he can take no aim, for, if he could discern the birds, they would also see him, and, being extremely timorous, would seek some other pasture. Though they march with noise, they feed in silence; some indistinct noises, however, if the night be still, issue from so vast a concourse. He directs his piece, therefore, towards the sound, fires at a venture, and, instantly catching up his other gun, discharges it where he supposes the flock to rise on the wing. His gains for the night are now decided, and he has only to gather up his harvest. He immediately puts on his mud-pattens (flat square pieces of board, which the fowler ties to his feet, that he may not sink in the ooze), ignorant yet of his success, and goes groping about in the dark in quest of his booty, picking up sometimes many, and perhaps not one. So hardly does the poor fowler earn a few shillings, during a solitary winter night, be the weather as it comes, rain, hail, or snow, on a bleak coast, a league probably from the beach, and often liable, without great care, to be fixed in the mud, when he would become an inevitable prey to the returning tide. One of these poor fellows, I have heard say, never takes a dog with him on these expeditions, because no dog could bear the cold which he is obliged to suffer; and, after all, others frequently enjoy more from his labours than himself, for the tide often throws on shore, next day, many of the birds which he had killed, but could not find in the night."

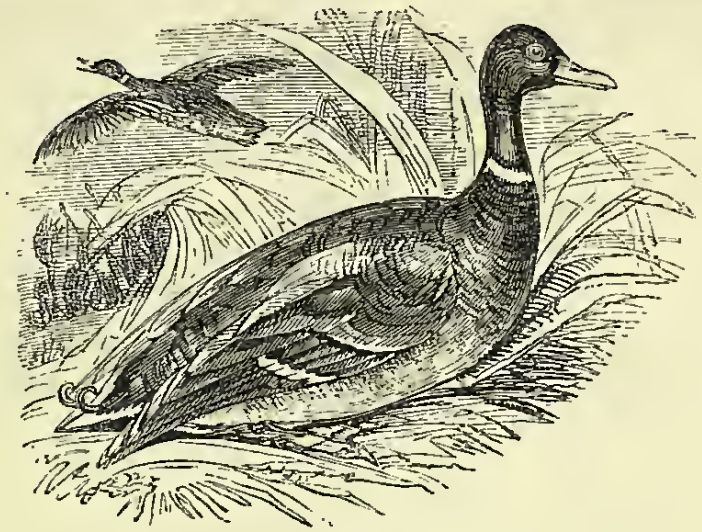
This hazardous occupation once led a fowler into singular distress. It happened, too, in the daytime, which shows still more forcibly the risk of such nocturnal expeditions:—"Mounted on his mud-pattens,

he was traversing one of these oozy plains in search of ducks, and, being intent only on his game, suddenly found the water, which had been accelcrated by some peculiar circumstance affecting the tide, had made an alarming progress around him, and he found himself completely encircled. In this desperate situation an idea struck him as the only hope of safcty. He retired to that part which seemed the highest, from its yet being uncovered by water, and, striking the barrel of his long gun deep into the ooze, he resolved to hold fast by it, as well for a support as a security against the waves, and to wait the ebbing of the tide. He had reason to bclieve a common tide would not have flowed above his middle; but, in the midst of his reasoning on the subject, the water had now reached him. It rippled over his feet, it gainod his knees, his waist, button after button was swallowed up, until at length it advanced over his shoulders. With a palpitating heart he gave himself up for lost. Still, however, he held fast by his anchor; his eye was eagerly in search of some boat which might accidentally be passing, but none appeared. A head upon the surface of the water, and that sometimes covered by a wave, was no object to be descried from the land, at the distance of half a league; nor could he exert any sounds of distress that could be heard so far. While, as the exigence would allow, he was thus making up his mind to the terrors of certain destruction, his attention was called to a new object. He thought he saw the uppermost button of his coat begin to appear. No mariner floating on a wreck could behold approaching succour with greater transport than he felt at this transient view of the button; but the fluctuation of the water was such, and the turn of the tide so slow, that it was yet some time before he durst venture to assure himself that the button was fairly above the level of the flood. At length, a second button appearing at intervals, his sensations may rather be conceived than described, and his joy gave him spirits and resolution to support his situation four or five hours longer, until the waters had fully retired."

Ducks with the hind toe free. The common WILD DUCK, or MALLARD (*Anas boschas*), is not perhaps the most typical duck of this division; that is to say, it is not the one which is the least aquatic in its habits, but still it is the bird from which the name is taken; and when we use the word duck, without qualifying it by some epithet, it is always this one which is meant. This is also the largest in size, at least of the species which frequent this country; and though its flesh is not reckoned so great a delicacy as that of some of the smaller ducks, it is the one which appears most frequently at market. It is

from the female that the general name duck is taken, while the male is the mallard, or drake.

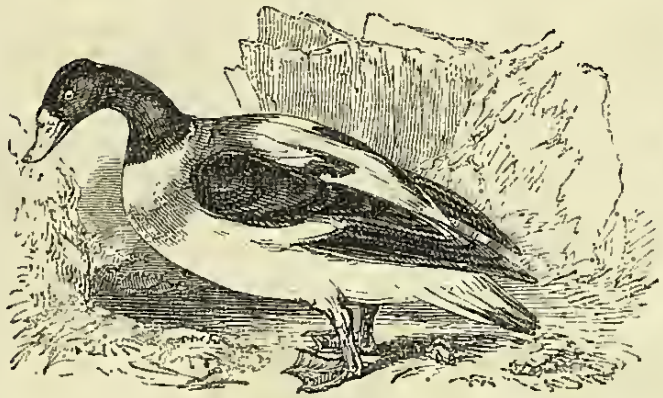
The length of a full-grown mallard is about two feet, the stretch of the wings about three feet, and the weight about two pounds and a half, though there are some individuals which are heavier than this. The bill is greenish yellow, the irides hazel, and the feet orange, with a tinge of red. The head and neck are of a dark green colour, remarkable alike for its gloss and for the fineness of the feathers. Below this there is a white collar; and the neck, breast, and shoulders are



MALLARD.

purplish brown. The scapular feathers are a mixture of silver white and rust colour, finely streaked with waving lines of brown. The wing-coverts are ash-coloured, with white and black on the tips, and the primary quills are dusky black. The wing-spot, or speculum, on the secondaries, is rich purple, with metallic reflections of blue and green. The lower part of the back, the rump, the tail-coverts, and the four middle tail-feathers, which are curled up in the mallard, are black, with green reflections on the rump, and purple on the tail. The other feathers of the tail are dusky brown, margined with dull white. The under part, from the breast downwards, is whitish grey, with slight mottlings of brown. The duck is considerably smaller than the mallard, and wants the green and white on the head and neck. The general colour is rusty brown, lined and mottled with black, and she is without the curled feathers on the tail; but the speculum on the wing very much resembles that of the male bird.

Sheldrakes (*Tadorna*). There are several varieties of these birds, the distinctions of which are tolerably well marked in a state of nature, though each variety is remarkably true to its own particular colour and marking. This is the case also with the mallard in a state of nature, though, as is more or less the case in all animals, the colours are broken down in the domesticated state.



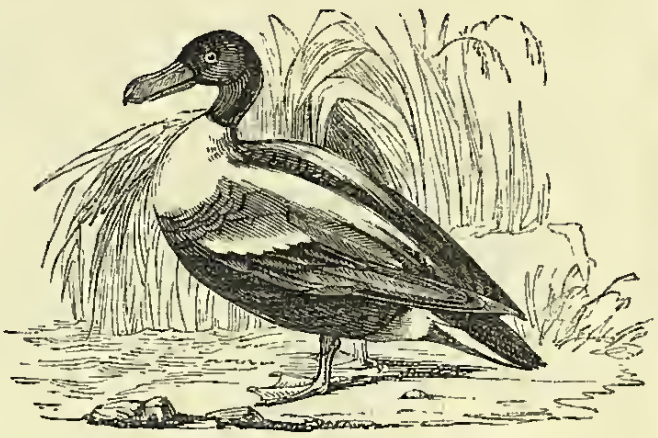
SHELDRAKE.

The Common Sheldrake (*T. vulpanser*). These are handsome birds, and birds of very quiet dispositions, and not very difficult to tame in the individual, though they do not breed readily in confinement, and therefore would not be so profitable for domestic purposes as the common duck; their flesh, also, is rank in its flavour.

The head and neck are of a beautifully rich green; the lower part of the neck, the back, the rump, the tail-coverts, and basal part of the tail feathers, are white. There is a band of reddish bay, which forms a collar on the lower part of the neck, and proceeds along the sides and flanks, and through this band a list of blackish brown extends to the vent. The onter half of the scapulars, and the principal quills, are black, and the secondaries glossed with a wing spot of green and purple reflections. In so far as colour is concerned, the sheldrake is one of the handsomest of our aquatic birds. The female has much more resemblance to the male than in the common wild duck, being only rather less in size, and not quite so bright in the colours.

The Shoveller (*Spathulea clypeata*). The shoveller is a very handsome bird, only its bill is disproportionally large, and very peculiar in shape. It is about three inches in length, of a black colour, widened towards the extremity; and the fibres along the margin are so much produced, that the bill has the appearance of being surrounded all along the gape with a fringe of hairs. This form of the bill is well adapted to one of the habits of the animal, which is that of picking up very small animal matters in the shallows and runs of the rivers; and as

these fibrous appendages are very sensitive, they enable it to detect with great nicety all substances that are edible. Its flesh is highly esteemed for the table, and is thought by many to excel that of the Mallard or Common Wild Duck in flavour.



SHOVELLER.

The shoveller is a much more inland bird than the sheldrake, and it is also rather more discursive. The shoveller is thus described: The bill is of a brownish black colour, three inches in length, greatly widened near the extremity, closely pectinated on the sides, and furnished with a nail on the tip of each mandible; irides, black orange; tongue, large and fleshy; the inside of the upper and outside of the lower mandible are grooved so as to receive distinctly the long separated reed-like teeth; there is also a gibbosity in the two mandibles which do not meet at the sides, and this vacuity is occupied by other appendages; head and upper half of the neck, glossy, changeable green; rest of the neck and breast, white, passing round and nearly meeting above; whole belly, dark reddish chesnut; flanks, a brownish yellow, pencilled transversely with black, between which and the vent, which is black, is a band of white; back, blackish brown; exterior edges of the scapulars, white; lesser wing coverts and some of the tertials, a fine light sky blue; beauty-spot on the wing, a changeable resplendent bronze green, bordered above by a band of white, and below with another of velvety black; rest of the wing, dusky, some of the tertials streaked down their middles with white; legs and feet, reddish orange. The female has the crown of the head of a dusky brown colour, and the rest of the head yellowish white, thickly spotted with dark brown, the spots on the breast being larger and crescent-shaped. The back and scapulars are dark brown, with orange shafts and margins to the feathers. The under part is white with a slight reddish tinge. The wings differ little from those of the male bird, and, indeed, in all kinds of ducks, it

is in the wings that the two sexes correspond the most with each other.

The Gadwall (*Chauliodus strepera*). The gadwall is still smaller than the shoveller; like that, it is an inhabitant of marshy situations in both continents during the summer or breeding season; and it is probable that, in Europe, these birds follow the line of the central marshes rather than that of the meridian. The male bird is in length about nineteen inches, breadth about thirty-three, bill two inches, flat, and of a black colour; markings of the plumage exceedingly minute, giving it a sort of appearance as if it were marked with delicate stripes, and enclosed in a net-work. The ground colour of the head and neck is grey, marked with brown points; but the lower part of the neck, the back, and the breast, are marked with small black crescents; the scapulars and flanks pencilled with zag-zag lines of black and white. Lesser coverts of the wings, chesnut; greater coverts, rump, and tail coverts, black. Primary quills of the wings dusky, tail reddish, but white at the tip, which is very much pointed; under part white, and the wing-spot white, with a red margin on the one side and a chesnut-coloured one on the other. The female differs in having the wing-covert duller, more brown on the neck and back, and wanting the crescent spots on the fore part, and the fine pencillings on the flanks and scapulars; she is also rather smaller in size than the male. The nest is always constructed in a place of great concealment, such as a thick tuft, a close bush, and sometimes the hollow of a tree; and the birds glide so softly, and at the same time so swiftly through the herbage, that they may be close at hand without the least chance of noticing them. These birds are not quite so prolific as some of the others, the eggs in a hatch being about eight or ten in number, of a greenish ash-colour. The flesh of the bird is held in much estimation. This bird, though it has not the web on the hinder toe, is a very expert diver; and for this reason it cannot be shot while swimming without the greatest difficulty; it is very watchful, and as it plunges the instant it sees the flash, it can scarcely be hit by the best directed shot.

Teal (*Querquedula*). There are several species to which this name is applied in common, and they are remarkable for the beauty of their colours, and also for the superior flavour of their flesh; and it is probable that some of these have been multiplied by considering difference of age and sex as difference of species. They are the smallest of our ducks, and more prized than any others for the table. The Common Teal is plentiful throughout the British Isles, and it remains with us from Autumn till Spring. In Ireland it remains in considerable

numbers all the year round. All the family are easily domesticated, and they breed freely in confinement. They are brisk and lively in their movements, thus forming most agreeable objects on a sheet of water; but it is extremely difficult to keep them within bounds unless the pond is completely encircled with wire-work.

The Pintail (*Q. acuta*). This is a very beautiful species both in its form and its markings,—one of the chief ornaments being the produced tail, which is of considerable length, pointed, of a black colour, glossed with rich green reflections. The pintail, or as it is sometimes called, the sprigtail, is a common and well-known duck in our markets, much esteemed for the excellence of its flesh, and is generally in good order. It is a shy and cautious bird, feeds in the mud flats, and shallow fresh water marshes; but rarely resides on the sea coast. It seldom dives, is very noisy, and has a kind of chattering note. When wounded, they will sometimes dive, and, coming up, conceal themselves under the bow of the boat, moving round as it moves; are vigilant in giving the alarm on the approach of the gunner, who often curses the watchfulness of the sprigtail. Some ducks, when aroused, disperse in different directions; but the Pintails, when alarmed, cluster confusedly together when they mount, and thereby afford the sportsman a fair opportunity of raking them with advantage. They generally leave the Delaware about the middle of March on the way to their native regions, the north, where they are most numerous. On the marshy shores of some of the bays of Lake Ontario, they are often plentiful in the months of October and November.

The following is an outline of the external characters of the pintail. The bill of moderate length, black in the middle, but of a bluish colour at the sides, on which account it is called the blue-bill in some parts of America. The head is round, and the neck long and slender: the nape and hind part of the neck are dusky; and the top of the head and fore part of the neck rich dark brown; while this colour is separated from the former by a narrow white line down each side of the front. These lines are broader as they advance forward, and uniting, form a pretty large collar on the lower part of the neck, and the upper part of the breast. The remaining part of the breast, and the sides of the neck and middle of the back, are marked with fine lines of black and white, and the flanks and lower parts of the back are mottled with the same colours. The scapulars are long and pointed, black in the centre, bordered with white; and the hand pendent over the bend of the closed wing. The coverts are brownish and tipped with pale orange, and the wing-spot is purple with green reflections. The

quills and feathers of the tail, with the exception of the two produced and more finely coloured ones in the middle, are dusky. The markings of this bird are altogether very beautiful; but as the form of the tail is subject to some variations in different individuals, these have been sometimes elevated into varieties without any just cause. It is a winter visitant of this country, and is taken in large numbers in the decoys and by nets. Its flesh is excellent, and its capture a valuable one to the fowler; it has been known to breed in captivity both with the Widgeon and Common Duck. In December, 1831, the Hon. T. Fiennes exhibited at the meeting of the Zoological Society, a brood of six, bred between the Common Duck and the male Pintail; these afterwards bred again, and of this second brood a female was exhibited.

Common Teal (*Q. crecca*). This is rather a small species; but its colours are very beautiful, and it is highly esteemed as food; the flesh being sometimes sold in the London market as high as five shillings a pound. The male is about fourteen inches long, twenty-three in the stretch of the wings, and about twelve ounces in weight. The female is a fourth lighter, and of a smaller size in proportion. The feet and bill are dusky, and the irides pale hazel: in the male the head and upper part of the neck bay with a broad bar of glossy variable green, bordered with a white line on the under side, extending from the bill to the hind part of the head on each side. The fore part of the neck and breast are dull white, marked with roundish black spots. The belly is white, the vent black; the coverts of the wings brown, and the quills dusky; but the outer webs of the secondaries are marked with a green spot, with a white line above and below, and a black bar over it. In the breeding season the breast of the male acquires a slight tinge of salmon-colour. The female is all over of a brownish ash-colour, with part of the sides and the belly white, the vent also white, but with a green spot on the wing, resembling that of the male, only less bright in the colour.

The common teal spends the winter season in a state of very great concealment; so that very little is known of its breeding places. There is no doubt, however, that it breeds among the reedy pools near the margins of most of the humid districts, more especially in the richer parts of the country. Indeed, it is not uncommon in the more retired morasses in most parts of Britain, and also of the eastern part of the continent generally, as there is nothing to give it a decided seasonal migration in latitude. It is met with as far to the north as Iceland, and as far south as between the thirtieth and fortieth parallels of latitude; and it is highly probable that its character, in every

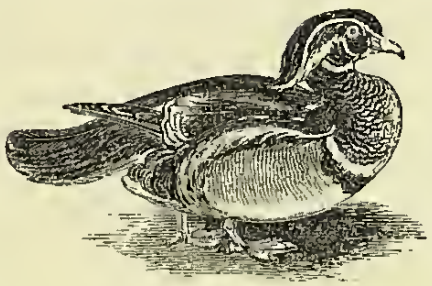
part of this wide range, is that of a resident bird. In tidal rivers the teal feed chiefly when the water is at an ebb; and are driven from their grounds as the tide rises, and as their haunts are among the tall reeds some art is required in arriving at them. The nest is carefully concealed among the herbage, and composed of a very considerable quantity of grass and stalks lined with finer ones, and sometimes with a few feathers. The eggs are numerous, being from ten to sixteen or seventeen; they are about the same size as pigeons' eggs, and of a dull yellowish colour.

Gargany, or Summer Teal (*Q. circia*). This species is about the same size as the common teal, which it resembles in very many of its habits, though the body is a little more elongated, and this form is generally accompanied by a more discursive habit. The leading characters of the gargany are: the bill black, the feet dusky grey, the wing-spots greyish green bordered with white; a white streak down the side of the neck from the eye; the back and breast purplish brown, marked with crescent-shaped dusky spots; the belly cream-colour; the flanks and vent dusky, as are also the quills and tail feathers; the coverts grey with white margins; and the wing-spots green, but very inconspicuous in the female, which has the upper part brown with dusky streaks. This bird is, like all the rest, chiefly seen in England during the winter only; and for this reason, though it is called "summer" teal, it is usually described as a winter visitant. In France, where it is more common than in England, it begins to build its nest in the beginning of April, whilst it begins in England a month later than this; so that there is little chance of the same individual birds being seen in both countries; and thus it is probable that it not only breeds in some parts of the British islands, but in many of them, though nowhere very abundantly, and always in a very concealed and hiding manner. The pairing cry of the male bears some slight resemblance to that of the corn-crake, only it is harsher, and not nearly so loud, and it ceases before the time at which the other begins. The nest is placed on the ground among thick herbage; and the eggs, which are greenish fawn-colour, are said to be more numerous than the common teal.

Bimaculated Teal (*Q. glocitans*). This species is rather larger than the common teal. Its bill is lead-colour, with the margin and nail on the tip black; the feet are of a dull yellowish colour, with the webs dusky; the head and upper part of the neck are deep black, with rich reflections of purple and green; and on each side of the head there are two bright spots of rust colour, one before the eye and

the other behind, and it is from these spots that it gets its common name of bimaculated, or two-spotted. The prevailing colour is ash, passing into purplish-brown, with a wing-spot of bright green, bordered with white, and divided in two by a black bar. This species is very rare indeed, even as a straggler, though it is abundant in the marshes of eastern Europe and of western and central Asia. Its manners are therefore little known, though it is understood that both it and some other species of teal, which inhabit still further to the south-eastward in Asia, differ so little from those of the teal of western Europe, that a particular description of them is not necessary, at least for popular purposes.

The American Summer Teal, or Summer Duck (*Q. sponsa*). This is one of the most beautiful of the whole family of ducks, of gentle habits, and trained without much difficulty. It inhabits the warm parts of North America, and many of the West India islands, and remains during the breeding season. Its habits differ from those of the European teal, though these probably depend more on the different nature of the two countries than of any great differeuce of the birds. The chief habit is, that this one builds very frequently in the hollows of old trees, in consequence of which it is called the wood-duck, while the teal of Europe builds on the ground or among the herbage. There are, however, other instances of its nestling on trees in America, while the corresponding species in Europe nestle on the ground. This is a very neat and compact little species, and has been introduced into the Zoological Society's gardens by the late able and enterprising naturalist who met with so dreadful a death in the trap for wild bulls in the Sandwich Islands. These birds have bred readily in the gardens, and there is no doubt that they might be generally introduced into this country. Their chief value, however, would he as ornamental birds on the waters of pleasure grounds, for their flesh is described as being of very inferior quality. We subjoin Wilson's description of this bird, as it is exceedingly accurate; so much so, that it does not admit of improvement. It is "nineteen inches in length, and two feet four inches in extent; bill red, margined with black; a spot of black lies between the nostrils, reaching nearly to the tip, which is also of the



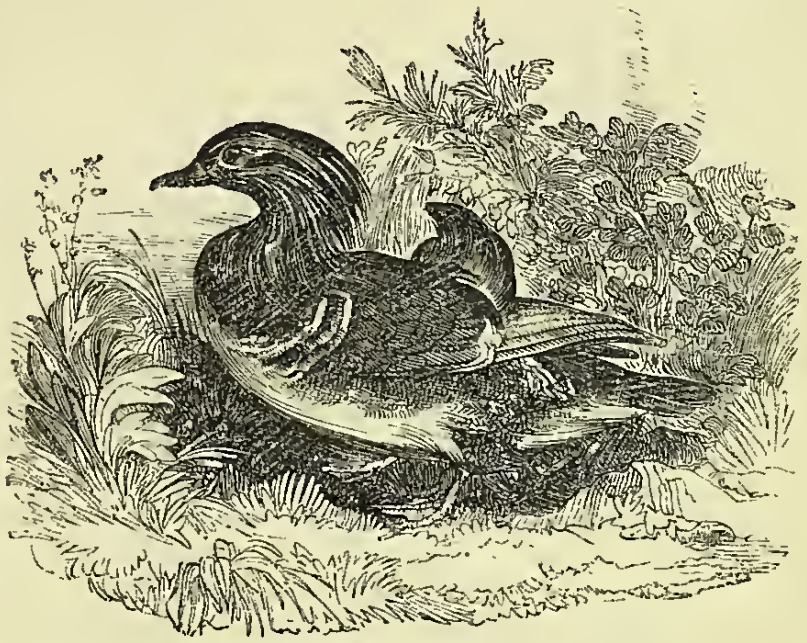
SUMMER DUCK.

same colour, and furnished with a large hooked nail; irides orange red; front, crown, and pendent crest rich glossy bronze green, ending in violet, elegantly marked with a line of pure white running from the upper mandible over the eye, and with another band of white proceeding from behind the eye, both mingling their long pendent plumes with the green and violet ones, producing a rich effect; cheeks and sides of the upper neck violet; chin, throat, and collar round the neck, pure white, curving up in the form of a crescent nearly to the posterior part of the eye; the white collar is bounded below with black; breast, dark violet brown, marked on the fore part with minute triangular spots of white, increasing in size till they spread into the white of the belly; each side of the breast is bounded by a large crescent of white, and that again by a broader one of deep black; sides under the wings thickly and beautifully marked with five undulating parallel lines of black on a ground of yellowish drab; the flanks are ornamented with broad alternate semicircular bands of black and white; sides of the vent rich light violet; tail-coverts long, of a hair-like texture at the sides, over which they descend, and of a deep black, glossed with green; back dusky bronze, reflecting green; scapulars black; tail tapering, dark glossy green above, below dusky; primaries dusky, silvery without, tipt with violet blue; secondaries greenish blue, tipt with white; wing-coverts violet blue, tipt with black; vent dusky; legs and feet yellowish red; claws strong and hooked. The female has the head slightly crested; crown dark purple; behind the eye a bar of white; chin and throat, for two inches, also white; head and neck dark drab; breast dusky brown, marked with large triangular spots of white; back dark glossy bronze brown, with some gold and greenish reflections; speculum of the wings nearly the same as in the male, but the fine pencilings of the sides, and the long hair-like tail-coverts, are wanting; the tail is also shorter."

It is well worth the attention of those who do not mind the expense of the first purchase, as being in beauty of plumage, among waterfowl, what the pheasant is on land, and very tame, therefore an appropriate denizen for garden ponds and fountain basins. They breed freely in confinement. Some very good specimens were lately to be seen in St. James's Park, sharing the crumbs scattered by children and nursery-maids; and a very beautiful pair may now (Dec. 1850), be seen at Messrs. Baker's establishment at Chelsea.

Mandarin Duck (*Dendronessa galericulata*). A remarkably beautiful addition to our ornamental water fowl, contributed by the Celestial Empire. In many respects it resembles the Summer Duck, and is

even more beautiful and velvety in its plumage. They have been bred in the Zoological Society's Gardens, and while I write a most beautiful pair may be seen at Messrs. Baker's Pheasantry, King's Road, Chelsea. Mr. Yarrell recommends that this species and its congeners, should have grain which has been steeped in water until



MANDARIN DUCK.

macerated, given to them when in confinement; others recommend barley-meal mixed with water, and sopped bread, and similar mixtures. I would recommend a variety of soft food for these birds, as most conducive to health; an occasional supply of insects and larvæ will also be useful where they cannot pick up such food for themselves.

Blue-winged American Teal (*Q. discors*). This inhabits more northerly than the Summer Duck, and ranges as far to the north as the valley of the St. Lawrence, if not farther. They return early to the middle and southern states of the American Union, and appear in large flocks, which squat on the mud very closely together, so that the sportsmen find them a very profitable description of game. Their flesh is also highly esteemed. They are, to a great extent, vegetable feeders, and greedily consume the seeds of Canada rice, and many other aquatic plants. They are rather small birds, measuring rather

more than one foot in length, and rather less than two feet in the stretch of the wings. The front and back of the head are black; a crescent-shaped gorget of white extends from the eye under the chin; and the rest of the head, and part of the neck, are slate colour, with rich reflections of green and violet; the lower neck dusky, with bars of pale white; the belly brown, with dusky lines; the sides of the vent pure white, but the lower tail-coverts black; the lesser coverts clear blue, from which the common name is given; the quills dusky, the secondaries black; the wing-spot rich green; the tail pointed, and two inches longer than the closed wings. The female wants the black on the head and the rich reflections on the neck, and is rather smaller in size. These birds are exceedingly abundant in all those places which suit their habits.

The common teal also occurs in America, very little different, either in appearance or manners, from what it is in the eastern continent. It is there called the green-winged teal, to distinguish it from the others, and, as is the case in Europe, it is rarely seen during the summer months.

Widgeon (*Mareca*). This bird is much larger than the teal, and its flesh also ranks higher in the estimation of epicures. The common species (*M. Penelope*) is twenty inches in length, and about twenty-three ounces in weight, or double that of the common teal. The bill is narrow, about an inch and a-half long, of a bluish lead colour, but with a nail on the tip almost black; the crown of the head is cream-colour, passing nearly into white at the base of the bill; the rest of the head and neck are light bay, the upper part and flanks marked with waving lines of black and white; the coverts of the wings brown and white; the quills dusky; the wing-spots green; the tail-feathers ash-colour, except the two middle ones, which are considerably produced, and of a black colour, as are also the vent feathers; the legs and feet are nearly of the same colour as the bill. The female has the head rusty brown, mottled with black, and the back deep brown, with paler margins to the feathers.

In its general shape the widgeon more resembles the ducks, properly so called, than any of the teal; but the male is subject to considerable variations of colour, by losing his grey tints in the winter. It is understood that the nest of the widgeon, which is very little known, resembles that of the common teal; the eggs also are about the same number, and of a dull greenish grey. In England these birds are most abundant in the southern parts of the country, and they are described as advancing more towards the western shore than any

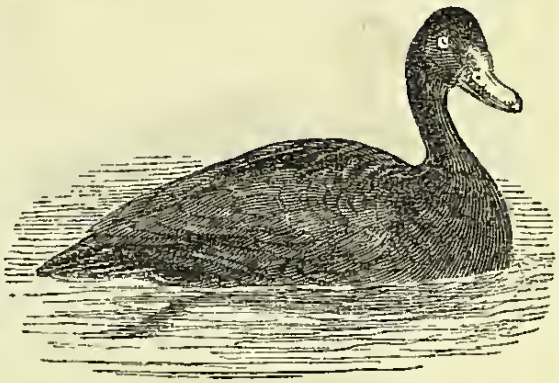
other of the family which make their appearance in the winter season. They are very generally distributed over the continent, both in Europe and Asia, and they range as far south as Egypt. Very little is known of their summer habits in any locality, and therefore it is not improbable that they are resident in many more places than is usually supposed.

There are several other species of fresh-water ducks, having the hind toe free, unincluded in the membranous web of the foot, but those which we have noticed will afford to the general reader some notion of the leading characters of these birds; and considering their numbers, and the little that is known about many of them at that season when their history is most interesting, it would neither suit the space to which we are confined, nor the purpose of this work, to enter more at large into the details. We shall therefore proceed with a short catalogue of the leading members of the second division.

II. With the hind toe webbed.—The birds of this division carry us more to the deep waters and the sea than those of the former; and the general form of their bodies, and also the structure of their legs and wings, are all modeled to accord with this habit; the head is thicker, the bill more inclining to pointed, the neck shorter, the wings rounder and more hollow, and the whole plumage more compact, and furnished with closer down among the roots of the feathers. As they are all more of a ranging character than the land, or rather fresh-water, ducks, and generally speaking, inhabit more northerly, they are more under the influence of the seasonal action of the hemispheres, and therefore their migrations have been better observed. There are differences in their haunts when they come southward in the winter season, some proceeding more inland, and others keeping more to the sea or the estuaries; and those which have the latter habit perhaps keep more to the north, even in winter, than those which have the former. It has been thought convenient to subdivide them into several divisions, which may either be considered as genera or sub-genera.

Scoter (*Oidemia*). These birds are about the size of the common mallard, but they have an enlargement more or less turgid at the base of the upper mandible. Their wings and tails are very close and stiff, and not liable to be injured when they are immersed in the water. They do not come much upon the fresh waters, but keep the shores of the sea, and find great part of their food by diving. Their breeding places are not much known, but it is supposed that they resort far to the northward in the winter. Most of them are common to the northern shores of both continents, and are found in the extreme north

during the summer months. Their flesh has a rank and fishy taste, and is inferior to that of any other ducks. In former times, when the use of flesh was prohibited with great strictness during lent, and in many countries still, the ecclesiastical authorities decided that scoters were a sort of fish, and so might be eaten with impunity on the meagre days and during lent.

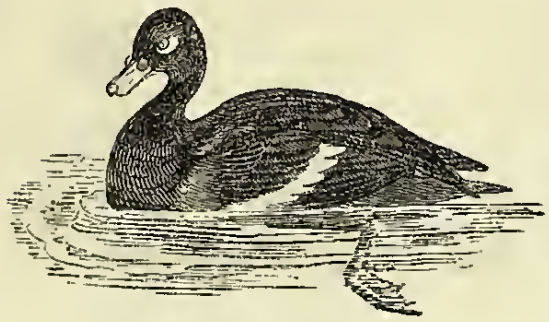


BLACK SCOTER.

The Black Scoter (*O. nigra*). The plumage of this species is entirely black, without any marking, or even any wing-spot. There is an indistinct knob at the base of the upper mandible, which, together with the streak down the middle of the mandible, is of a reddish yellow, but the rest of the bill is black, without any appearance of a nail at the tip. The orbits of the eyes are yellow, and the irides brown; its tarsi and toes of the feet are dusky, and the webs black. The female is rather less than the male, and the black has a rusty tinge. They frequent the coasts of Britain in considerable numbers during the winter season, and are understood to feed almost exclusively on shelled mollusca, for which they dive in water of considerable depth, so that they are often caught in the nets of the fishermen. Scoters come with the flood tide, and any one who has attended to the economy of nature on the shores will at once see the cause of this. When the tide ebbs, the shelled mollusca shut themselves up, or, where they have that habit, plunge down into the sand or mud; but when the tide returns, they come up and open their shells, and thus they are readily captured by the scoters, which are found numerous and active in proportion as their peculiar food is abundant. This species is found equally in all places of the North Seas.

The Velvet Scoter (*O. fusca*) is perhaps not quite so abundant as the black scoter, and the one has often been confounded with the other, as they are about the same size, and differ little in their habits. They may, however, be distinguished from each other without any difficulty. The plumage of the male is velvet black, without any gloss, and there is a crescent-shaped spot of white under each eye, and wing-spots of the same colour. The irides, the tarsi, and

the toes, are also reddish; the bill dusky at the base and the margins, but dull yellow in the greater part. The black on the female is not so intense, and the under part of that sex has a whitish tinge. They are also a little larger in size than the black scoter. Their flesh, like that of the former, is rather rank in flavour, but still it is readily eaten by those northern people who depend chiefly upon the sea for subsistence.



VELVET SCOTER.

Pochard (*Fuligula*). The birds of this sub-genus are much more interesting to those who are fond of water-fowl than the scoters. They are short and dumpy in their forms, but exceedingly well made both for swimming and for diving. When they visit Britain in the winter, they are much more inland or fresh-water ducks than the scoters: and therefore, though their breeding places are not much known, the probability is that they are the fresh-water marshes and lakes of the polar countries rather than the shores of the sea. There are a good many species that come regularly to the fresh waters of Britain, and also to those places of the estuaries to which we have so often referred as the chief haunts of water-fowl. They are also pretty generally distributed over both continents, though it has not been ascertained that any of them pass the summer far to the south on either continent. They are understood, however, to be much more easily kept in a state of domestication than those diving ducks which are more partial to the sea; and as they are very handsome and lively upon the water, as well as very excellent eating, they are worthy of more attention than they have hitherto received.

The red-headed Pochard (*F. ferina*). This duck is common to the two continents; and in England, where it comes in the winter, it is called the red-headed widgeon. It is also, from some of its colours, called the "dun-bird," by the fowlers and dealers. The weight of this duck is about a pound and three-quarters: its length nineteen inches, and the extent of its wings about thirty. Its bill is rather broader than that of the widgeon, of a deep lead colour, and with the tip black; the tarsi are also of a red colour, and the irides orange. The head and neck are deep chesnut, the feathers on the top of the

head being considerably produced. The lower part of the neck, the breast, and the upper part of the back, are dusky black; the scapulars and coverts next the body greyish white, pencilled with delicate lines of black; the exterior coverts and quills are dusky brown; the belly ash-coloured and brown; and the tail, which is short, and consists of twelve feathers, is of a deep grey, inclining to black. The female has the upper part of the head dusky brown; the remainder of the head and part of the neck pale blackish brown; the breast brownish ash, closely margined with whitish; and the back dark ash with little or no appearance of pencilling. The bill, wings, and feet, are nearly the same as in the male.

This species comes very plentifully to the oozy runs and partially concealed waters of those districts where ducks are caught in so great numbers; and therefore it is plentiful in the London markets, especially in Leadenhall, which is the grand mart for all this race of birds. They are taken in decoys, but not in the same kind of decoys or in the same manner as the mallards, which are the game principally alluded to in noticing the structure of decoys in a former part of this article. A pond is prepared for the pochards, as well as for the others, and a situation is chosen which shall possess in the most eminent degree the three attractions of quietness, cover, and proximity to the feeding grounds; but this pond does not terminate in pipes with tunnel nets permanently stretched over them. It is technically called a flight pond, because the birds are captured when they are first on the wing; and the nets, by which this is effected, are so placed as that they may act to windward of the birds, as ducks always fly to windward when they take the wing. The net is kept ready extended on the top of the reeds or other cover, upon poles, which by means of a counterpoise at the bottom, can be instantly erected, upon withdrawing the pins by which they are held down; when this is done, the poles rise and elevate the net to the height of about thirty feet; and this takes place just as the birds are alarmed and made to take the wing. They strike against the net, are thrown off their balance, and are thrown on the ground, which, all under the net, is formed into little pens or traps, into which the birds fall, and are unable again to take the wing. The numbers caught in this way, at one skilful application of the net, are often perfectly astonishing; and they tumble into the pens one over the other, till the lower ones are killed, and sometimes pressed nearly flat with the burden of their companions. It is mentioned that, in some parts of the Essex coast, a waggon-load of pochards have been taken at one drop of the net. This species is common to the two

continents, appearing in the temperate climates only during the winter; and resorting to the more northerly ones in the breeding season. It is, properly speaking, a fresh water duck; but it never, in its winter haunts at least, ranges to any great distance from the sea. This however, is no proof that it does not breed far inland in the marshes; because food is most abundant in those marshes in the summer; while the portions of the rivers next the sea in the rich flat countries abound most in food during the winter, even in countries where the inland and upland pools and marshes are not frozen at that season. It is much esteemed for the table.

The Scaup Pochard (*F. marila*). This species is also a native of both continents, having nearly the same habits as the others, breeding in the northern marshes, and migrating southward in the winter. It is smaller than the last mentioned, or than the red-headed pochard, being about eighteen inches long, and twenty-nine in the stretch of the wings, and weighing rather more than a pound and a half. The colours both of the naked parts and of the plumage are subject to variations at different ages, and also in different individuals. In general the bill is bluish, the feet lead-colour, the irides golden yellow, and the wing-spots white. The head, which is tumid, is glossy green half way down the nape; the neck, breast, and lower part of the hind neck black; the back and scapulars white, with waving lines of black; primary quills brownish black; secondaries white with black tips; belly white, marked with black near the vent; vent feathers, rump, and tail coverts black, and tail feathers dusky brown. The female has the front and sides of the head white, the rest of the head brownish, and the general colour inclining more to brown in the male bird. In consequence of this colour of the female, the species is sometimes called the white-faced duck. Their principal food is understood to be small shelled mollusca and aquatic worms; in search of which they range the flat banks in the bays and estuaries; but they are indiscriminate in their feeding, and very easily tamed.

White-eyed Pochard (*F. nyroca*). This species gets its name from the whiteness of the irides, which give it a peculiar expression. It is about seventeen inches in length, and two pounds weight. Head and all the fore part rust-colour, with a collar of darker, and a white spot on the chin. Back and wings black, glossed with purple, and marked with small red spots. Primary quills dusky; secondaries with white bases, and black tips, forming a white and black wing-spot. Tail dusky brown. The female has the head brown, and the back dusky, and without the reflections. This species has the same habits as

the other pochards; and, like them, resorts to the "ducking-grounds" during the winter; but it appears to come to England from an eastern migration, and is almost, if not altogether, unknown in Scotland.

Tufted Pochard (*F. cristata*). This species gets its name from a crest of about two inches in length, which is pendent from the hind part of the head. It is a migrant bird like the others, though, probably, it does not range so far; because though not so common in this country as several of the others, it continues longer, chiefly on the fresh waters, and more inland than the other pochards. It is about a foot and a-half long, and weighs twenty-six ounces. Bill and legs black; the former broadened towards the tip, and with a black nail; irides dull, yet low; the head, neck, and crest black, but with rich reflections of green and purple. The middle of the back and the breast black, without any reflection; the scapulars and sides mottled black and grey; lower breast and belly pure white; flanks and vent feathers black; tail feathers dusky, wings black, but having a white spot on the secondaries. The female and the young are dusky brown on those places which answer to the white in the male, and they are without any crest.

Red-crested Pochard (*F. rufina*). This species belongs chiefly or exclusively to the eastern hemisphere, ranging as far as the mountains of Central Asia. It is much less known in Western Europe; and its appearance in Britain is very rare, and always in the south-east, where a small flock may be seen at long intervals. From what is known of its habits, it appears to be less a sea-bird than any other of the pochards. The male is a particularly handsome bird. The bill is red with a white nail, and the feet red with black webs. The nail of the bill is much produced and pointed, and extended over the lower mandible, like a hook. The head and crest, the latter composed of long silky feathers, and very handsome, are rich reddish chesnut, with purple reflections. The hind part of the head, breast, and middle of the belly, are brown, and the vent feathers black; the back is brownish ash, with two crescent spots of white on the scapulars, which nearly meet. The sides are white, mottled with brown at the margins; the wing-spot is also white, and the rump and upper coverts of the tail green with purple reflections. The female has no crest, and the head and upper parts are more inclining to brown than in the male.

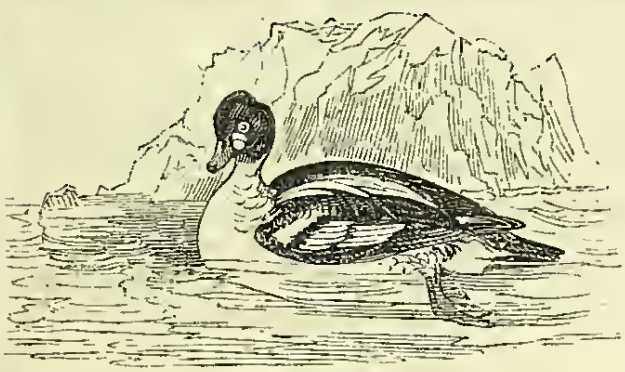
There are several other varieties of pochards, or, at least, of diving ducks, analogous to them, especially on the northern shores of America, and in some of the Antaretic countries; but too little is known respecting them for their being admitted into a merely popular list.

Long-tailed Hareld (*Harelda glacialis*). This species is in many respects analogous to the pochards; it is a diving duck, and makes its appearance at the same season, and is like them, common to the colder regions of the whole northern hemisphere. It has sometimes been confounded with the pintail, principally, we believe, because both agree in having their tails longer than any other ducks; but still they are different in their habits, and belong to separate divisions. This species has the bill very short, and black, with a transverse red stripe; a large patch of chesnut brown on the sides of the neck. Length from twenty to twenty-one inches, owing to the elongation of the middle tail feathers; but the bird is only about the size of a pigeon. This bird inhabits Europe, Asia, and America; frequenting both the interior lakes and the sea shores of those quarters of the world. The birds of this species do not, like many other of the tribes, entirely quit their northern haunts in winter, but considerable numbers reside permanently in the polar regions. Numerous flocks, however, spread themselves southward in the winter from Greenland and Hudson's Bay, as far as New York, in America; and from Iceland and Spitzbergen, over Lapland, the Russian dominions, Sweden, Norway, and the northern parts of the British Isles, in Europe. The bands which visit the Orkneys appear in October, and continue there till April. About sunset they are seen in large companies, going to and returning from the bays, in which they frequently pass the night, making a noise, which, in frosty weather, may be heard at the distance of some miles. They are rather scarce in England, to which they resort only in very hard winters, and even then in small straggling parties. They fly swiftly, but seldom to a great distance, making a loud and singular cry. They are expert divers, and supposed to live chiefly on shell-fish. The female places her nest among the grass, near the water, and like the eider duck, lines it with the fine down of her own body. In the northern parts of the American continent these ducks are found in vast numbers during the summer; but as they are more marine in their habits than most of the species, they do not move farther to the south in winter, at least in their more numerous masses, than they are compelled to by the freezing up of the shoals and shallows where they seek their food. Their nests are described as being hid in the grass or other coarse herbage; but never at any very great distance from the sea. On their southward migrations they seldom resort to the inland marshes, but take short flights from channel to channel in the broken parts of the shores. Their style of flight is rapid, and they utter a singular, and when in numbers, a very loud cry while on the wing.

Their flesh is rank in flavour, and little esteemed; and thus they are apt to take their flights and carry on their fishing without being much disturbed. The down of this duck is said to be valuable.

Garrots (*Clangulæ*). These are northern species, found, we believe, most abundantly in the northern parts of the Atlantic, and therefore more plentiful on the shores of America than on those of Europe, even in the winter months, when they quit their polar habitations, or rather are driven from them by the ice. The position of the Scandinavian mountains forms a sort of barrier, excluding the polar birds of the Atlantic from the north of continental Europe; and besides, the waters of the Baltic do not partake of any of the advantages of the Gulf Stream, and the fertility which it brings; and this farther arrests the progress of those birds, which otherwise might be much more abundant in the marshy districts of Central Europe during the winter. The general characters of the garrots are: the bill short and narrow; the feathers on the scapulars produced, pointed, and apart from each; the third quills passing over the primaries in the closed wing, but not being loose and pendent as they are in some birds. They are rather small in size, but very active.

The Golden Eye, or Common Garrot (*C. vulgaris*). This species is named from the colour of the iris of the eye, which is very brilliant, of a bright yellow colour, and shines like a little spot of gold upon the side of the head. They swim swiftly and beautifully, dive with great expertness, and live upon aquatic animals, including reptiles, and even water mice. On the wing their motion is very swift; but their flight is usually low, and accompanied by a peculiar whistling or clangulous noise. Their breeding places in the eastern continent are little known; but in America they are said to build on the stumps and in the hollows of old trees. The golden eye is about eighteen inches long, and thirty in the stretch of the wings, and weighs about a pound and three quarters. The bill is of a bluish colour. The upper part of the neck and the head, the



THE GOLDEN EYE.

feathers on the top of which are very thick and much produced, forming a sort of crest, but not a pendent one, are of a rich glossy green, with the exception of a white spot just behind the gape. Below the green there is a collar of deep velvet black, below which the whole under part is pure white, with the exception of a few black feathers on the flanks and thighs. The middle of the back and the rump black, and the tail brownish; some of the scapular feathers produced and of a white colour, the rest are black, as are also the tertiary quills, which cross over the primaries. General colour of the wings brownish black, with the coverts and secondaries white, crossed on the middle by a black bar. The female is brown on the head and dusky on the back, with paler margins to the feathers. The males do not attain the full colours of their mature plumage until the second year.

Harlequin Garrot (*C. histrionica*). This species is named from the similarly contrasted colours of its coat. The harlequin inhabits the same parts of the world as its congener, the golden eye, but it inhabits more northerly, and does not appear in the low latitudes of either continent in even the severest winters. This does not arise from its being a scarce bird in the high latitudes, but from its polar habits. It is abundant on the shores of the Arctic Ocean, both in America and in Siberia, and also in the islands to the south of Behring's Strait. Indeed, excepting as an occasional straggler, it appears to keep, at all seasons, as near to the polar ice as the water is open. In Britain we believe it has never once appeared in the south, or even on the mainland of Scotland, though it may at some times be driven upon those inhospitable shores near Cape Wrath, which are not very accessible to observation during the winter storms. It is sometimes seen in the more remote isles of the north, though only a straggler. On the coast of America it is a little more common, because that coast lies nearer to the Arctic countries in which it breeds; but even there it is very rare on the shores of the midland states, and quite unknown on those of the southern.

It is smaller than the golden eye, and much more peculiar in its markings, though that also is a gaily coloured bird. Its length is about seventeen inches, the stretch of its wings about twenty-six, and its weight a pound, or perhaps a little more. The general colour of the upper part of the body is a deep glossy green, which in some lights appears almost black, but in others it throws out brilliant reflections of lighter green and purple. The green is marked with lines of white and black, very conspicuous and well defined, and placed differently from similar markings on any other birds. On each side of the head

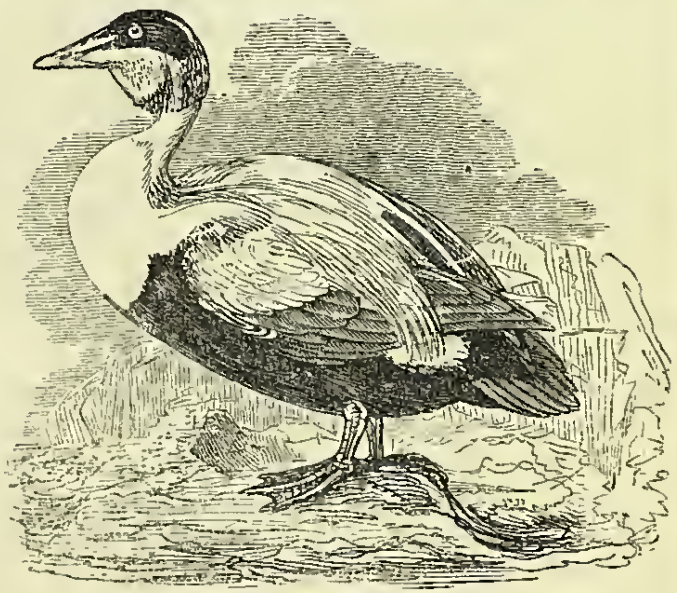
there is a curved white line, beginning near the nape, passing over the eye to the gape, and returning on the cheek, where it has a reddish tinge. This white curve is margined on its under side by a very narrow line of intense velvet black, without any reflections, which contrasts strongly with the ground-colour of the head, notwithstanding the deep tint of the green on that. A circular spot of white is placed immediately behind the eye; and from a little behind that, a white line passes from the head down the side of the neck, and another narrow line of white, margined by black, almost surrounds the lower neck as a sort of collar. These distinct arches of white, with the convex sides upward, reach from the shoulder to the breast, the one next the shoulder having a black margin on the under side, and the remaining two, a similar margiu on the upper. These arches form nearly a continuous band, and the portion of the breast which they enclose is of a bluish ash-colour, relieved by lighter margins to the feathers. The remainder of the under part is brown, with a tinge of red toward the flanks. The scapular feathers are pretty long, pointed, distinctly separated from each other, and of a white colour in the middle, but with black margius. The wings and tail are dusky black, and the wing-spot blue, with purple reflections. The bill is dusky, the feet are bluish, and the irides brown. The female has a rusty tinge on the head and neck, the upper part brownish, and the under part dull white. The nesting-places are said to be in the herbage on the marshy places on the Arctic shores, and also near the pools of fresh water in the same region, but never at any great distance from the sea. If we take the whole race of ducks, in their latitudes from the equator to the pole, the harlequin may be considered as the last, and it certainly is one of the most beautiful. Its flesh is also described as being excellent.

Eiders (*Somateria*). On a strictly systematic arrangement of the duck family, it is not very easy to determine with perfect satisfaction what should be the place of this highly interesting genus. They are much larger birds than any of the other ducks, being as weighty as the average of the geese. They have also some peculiarities in their structure, and more perhaps in their manners. All the species, for we are acquainted with at least three of them, are remarkable for the immense coating of down by means of which they are protected from the cold; and thus, though they are gentle creatures, and to appearance delicate, they are perhaps more proof against the severity of the northern winter than most of the family. In the southern parts of England they are unknown, but there are a few which inhabit the Fern Isles on the coast of Northumberland; and there are some also

on the small islets in the Firth of Forth. From there, northward, they are not met, because the shores are not suited to their habits; but in the Orkneys, the Shetland Isles, and some of the more remote Hebrides, they are found in greater numbers. Wherever they are met with, they may be considered as resident birds, rather than wanderers; for, though they take long flights when out of the breeding season, they are understood to return to the same haunts.

It is in the more dreary and inhospitable parts of the north that those birds are found in the greatest numbers, and where they may be said to be quite at home. In Iceland, in the Fern Isles, and in other northerly places, they serve many important purposes, and the inhabitants would find their comfort much diminished if they were deprived of the eiders. Their eggs and their flesh serve for food; their skins form under clothing, which is proof against very severe cold; and, without very serious injury to the birds, a vast quantity of the finest down is procured from them every year. So firm and elastic is this down, that the same quantity which can be compressed and concealed between the two hands will serve to stuff a quilt or coverlet, which, while it has hardly the weight of a feather, has more warmth than the finest blanket. We must, however, shortly notice the species.

Common Eider (*S. mollissima*). This is the best known species; it is the one of which a few specimens are found on the British shores, and also the one which may be said to be domesticated by the northern people, though its domestication costs them no expense, as the birds feed entirely on seaweed, and other products of that element.



EIDER DUCK.

The common eider has been known from a very remote antiquity, and its manners have been well described by almost all who

have written on the natural history of the north. During the summer months they are very abundant on all the isles in the Greenland seas; and they are also met with, floating in pairs, or solitary at great distances from the land; but in these cases they are usually near the ice. In spring they swim in flocks, and in fine weather one of those flocks is a very beautiful sight. They ride high in the water, their attitudes are elegant, and their motion, though swift, is smooth and gliding, and apparently performed with great ease. They can also make excursions on the wing; and, though they are heavy birds, it has been estimated that they can move along, when they are on their high flight, at the rate of ninety miles an hour, without apparent effort or fatigue.

But it is perhaps when they are on their breeding grounds that their manners are most interesting, The nest is made on the ground, composed of marine plants, and lined with down of exquisite fineness, which the female plucks from her own body. The eggs are usually four, of a pale olive green, and rather longer than those of a common duck. About Iceland the Eider duck generally build their nests on small islands not far from the shore, and sometimes even near the dwellings of the natives, who treat them with so much attention and kindness as to render them nearly tame. Two females will sometimes lay their eggs in the same nest, in which case they always agree remarkably well. As long as the female is sitting, the male continues on the water near the shore; but as soon as the young are hatched he leaves them. The mother, however, remains with them a considerable time longer; and it is curious to observe her attention in leading them out of the nest almost as soon as they creep from the eggs. Having conducted them to the water's edge, she takes them on her back, and swims a few yards with them, when she dives, and leaves them on the surface to take care of themselves; and they are seldom afterwards seen on land. When the natives come to the nest, they carefully remove the female, and take away the superfluous down and eggs. They then replace the mother, and she begins to lay afresh, covering the eggs with new down; and when she can afford no more, the male comes to her assistance, and covers the eggs with his own down, which is white. When the young ones leave the nest, it is once more plundered. The best down and most eggs are got during the first three weeks of their laying; and it has been generally observed that they lay the greatest number of eggs in rainy weather. One female, during the time of laying, usually yields half a pound of down, which, however, is reduced one-half after it is cleaned. It is probable that the eiders, at least in very many of their localities, depend upon the cur-

rent of the Atlantic for their food, and also for the materials for the nests; and that, while this circulating of the ocean waters brings the *sporæ* or germs of the sea-weed, and also the small animals which are buried in these annually renewed deposits, the drift-grass brought by the same current serves the birds for the materials of their nests, just as the drift-wood serves the people for their domestic purposes. This wood furnishes an abundant supply in places where not a tree grows; and the drift-grass, in like manner, brings a store for the birds to those dreary rocks upon which there is not a particle of land vegetation.

The length of the male eider is about two feet three, and the stretch of the wings about three feet; the head is large, and the bill very peculiar: it is three inches long, and two plates from the side of it extend up the forehead, with feathers between them; the colour of the bill is dull yellow; the top of the head is velvet black, divided posteriorly by a white line on each side; a portion of the side of the head is pea-green, divided by a white patch; the plumage from this part to the throat is very thick, and the feathers appear as if the ends were cut off; the upper part of the neck, back, scapulars, wing-coverts, and sides of the rump, are pure white, the under part black; the tail and the primary and secondary quills, dusky black; the tertiaries yellowish white, and curving down over the closed wing; the tarsi are short, and of a yellow colour, as are also the toes; but the webs are black. The female is considerably different: it is smaller; the bill does not rise so high on the forehead, and the general colour is dark reddish drab, with lighter blotches, and spots of black, and the under part dusky, mottled with black.

The King Eider (*S. spectabilis*). This species does not come so far southward as the common eider, and therefore its history is less known, though it is probable that some individuals breed in the more remote British islands. It may readily be distinguished both by the bill and the plumage, and is somewhat less than the other. The lateral prolongations of the bill on the forehead are arched, ridged, and furrowed; the colour of the bill and feet is a bright reddish orange, but the terminal parts of the plates toward the forehead are black; the feathers over the eye, at the base of the bill, and partly down the sides of the neck, are bright green, meeting in front, and gradually passing into whitish on the chin, which is marked with an angular bar of black; the top of the head and back of the neck are ash-coloured; the middle of the back black; the coverts dusky, with a patch of white in the centre; the quills black, and the tertiaries curled over them; the tail, which is short and wedge-shaped, black, as are also the belly and

vent, but the lower neck and breast are whitish. The female is smaller, of a brown and dusky colour, has the plates of the bill less conspicuous, and the tertiaries not curled over the wing.

Western Eider (*S. dispar*). This is an inhabitant of the North Pacific, though it sometimes finds its way to the Atlantic, and, in a solitary instance, has been found in Britain. Bill black, hooked at the tip; ground-colour of the head and neck white, with a green band on the forehead, and another on the nape, with a black collar, and the chin black; upper part black, pied with white, with the tertiaries much produced, and curving gracefully over the wings; under part white forwards, and brown to the rear; feet lead-coloured, large and strong; the whole body elongated, and the head slender.

Such is an outline of the interesting family of the ducks; but it would take much space, and more labour and research, to fill up that outline with the requisite minuteness of detail.

THE DOMESTIC DUCK.

The duck should always find a place in the poultry-yard, provided that it can have access to water: without water it is useless endeavouring to keep these fowl; but even a very small supply will suffice. I myself have kept them with success, and fattened the ordinary duck to the weight of eight pounds, with no further supply of water than what was afforded by a large tub sunk in the ground, as I have already described when treating of poultry-yards. It must be remembered, that the flesh of these birds will be found to partake, to a great extent, of the flavour of the food on which they have been fattened; and as they are naturally very foul feeders, care should be taken for at least a week or so before killing, to confine them to select food. Boiled potatoes are very good feeding, and are still better if a little grain be mixed through them; Indian meal will be found both economical and nutritive, but should be used sparingly at first.

Some recommend butchers' offal; but I may only warn my readers, that although ducks may be fattened on such food to an unusual weight, and thus will be profitable for the market, such feeding will render their flesh rank and gross, and not at all fit for table. In a garden, ducks will do good service, voraciously consuming slugs, frogs, and insects; nothing coming amiss to them; not being *scratchers*, they do not, like other poultry, commit such a degree of mischief in return as to counterbalance their usefulness.

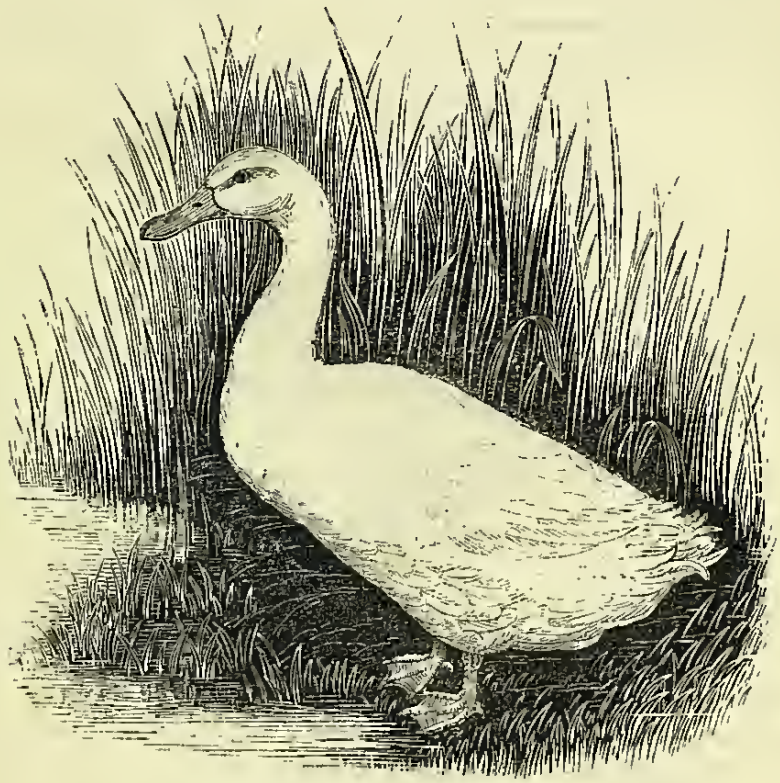
The duck is very prolific. I recollect reading an account in an English newspaper, of a duck belonging to a Mr. Morrell, of Belper

Dally, which laid an egg daily for eighty-five successive days. This was in 1823-24. The egg of the duck is by some people very much relished, having a rich piquancy of flavour, which gives it a decided superiority over the egg of the common fowl; and these qualities render it much in request with the pastry cook and confectioner—three duck eggs being equal in culinary value to six hen eggs. The duck does not lay during the day, but generally in the night: exceptions regulated by circumstances, will, of course, occasionally occur. While laying, the duck requires more attention than the hen, until they are accustomed to resort to a regular nest for depositing their eggs—once, however, that this is effected, she will no longer require your attendance.

The duck is a bad *hatcher;* she is too fond of the water, and is, consequently, too apt to suffer her eggs to get cold; she will also, no matter what sort of weather it be, bring the ducklings to the water the moment they break the shell, a practice always injurious and frequently fatal; hence the very common practice of setting duck eggs under hens. The eggs of the duck are thirty-one days in hatching; during incubation, they require no turning or other attention; and when hatched only require to be kept from water for a day or two; their first food may be boiled eggs, nettles, and a little barley; in a few days they demand no care, being perfectly able to shift for themselves; but ducks at any age are the most helpless of the inhabitants of the poultry-yard, having no weapons with which to defend themselves from vermin, or birds of prey, and their awkward waddling gait precluding their seeking safety in flight; a good stout courageous cock, and a sharp little terrier dog, are the best protectors of your poultry-yard. The old duck is not so brave in the defence of her brood as the hen; but she will, nevertheless, although Mr. Waterton thinks otherwise, occasionally display much spirit. I have witnessed this repeatedly, and I recollect a striking painting illustrative of my remark, by the artist, Charles Grey, representing a duck rushing furiously on a magpie, which had transfixed a duckling with its talons. Grey, like Landseer, never paints from imagination; he never depicts scenes that could not happen, and he is a close observer of nature.

There are many varieties of the Domestic Duck, the origin of which is by no means determined. White ducks have the preference with many; and of all the white ducks, the Aylesbury is the favourite. This variety is remarkably easily tamed, and in Buckinghamshire it lives with the cottager on much the same terms as does the pig in the Irish cabin; they are, however, rather difficult to be procured of late.

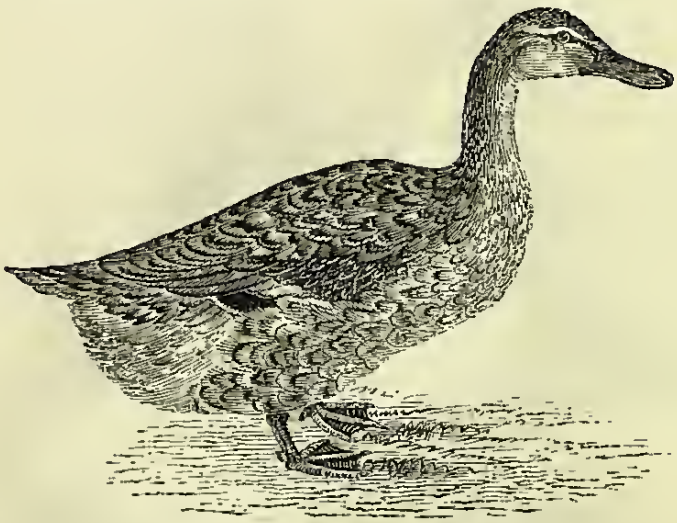
In Buckinghamshire, where many of the cottagers add to their little incomes by rearing the Aylesbury Duck for the market, the interior of the cottages sometimes presents a curious appearance to the eye of the visiter, being furnished, as Mowbray tells us, with boxes and pens ranged round the walls for the protection of the early broods, which may be said to be brought up by hand. This is a large handsome bird, with plumage unspotted, and yellow legs and feet, and flesh-



THE AYLESBURY DUCK.

coloured bill. They are most assiduous mothers, and very productive. In the summer of 1850 I had two of these birds, both of whom set themselves twice, and in each case brought forth eleven and thirteen young ducklings; but from want of due precaution, they were suffered to wander in the long grass, and the whole of the four broods were lost. Until the introduction of the variety called Rhone, or Rohan, but more probably Rouen Duck, from the town of that name on the Seine, the Aylesbury Duck was esteemed the most valuable of all; the latter

bird, however, now fairly divides the honour with it, and is by some regarded as superior. The flesh of the Aylesbury duck is of a most delicate flavour, being by many compared to that of the chicken; but it is asserted that a cross between that and the Rouen Duck is superior in flavour to all others. The ducks of France are abundant and very fine, especially in Normandy and Languedoc, where duck-liver pies are considered a great delicacy. The barbarous practice of nailing these birds to a board, placing them before a fire, supplying them with food and water, and keeping them in this situation until the liver becomes morbidly swollen is of great antiquity, and appears to have been practised by the Romans.



THE ROUEN DUCK.

The Rev. Mr. Dixon seems to consider the Rouen Duck to be merely a dealer's name for the common duck. In this, however, he is scarcely justified, as it certainly possesses qualities not to be found in the common brown duck; these qualities, however, depend not on any specific differences, but on attention to a healthy mode of breeding and rearing them. The bird is very prolific, lays large eggs; and the name suits as well as another.

THE MUSCOVY OR MUSK DUCK

Does not, as some suppose, derive its name from having been brought from that country, but from the *flavour of its flesh*, and should more properly be termed the Musk duck, of which its other name is only a corruption; it is easily distinguished by a red membrane surrounding

the eyes and covering the checks. These ducks, not being in esteem on account of their peculiar odour, and the unpleasant flavour of their flesh, are not worth breeding unless to cross with the common variety, in which case, let it be remarked, that the Musk *drake* must be put to the common *duck;* this will produce a very large cross, but *vice versa*, will produce a very inferior one.

The Musk duck is a distinct species from the common duck; and the hybrid race will, therefore, not breed again between themselves, although they are capable of doing so with either of the species from the commixture of which they sprung.

THE BLACK EAST INDIAN DUCK.

These ducks are black, and all black, feathers, legs, and bill, with a tinge of deep rich green. On a pond, mingled with the white Aylesburies, they look extremely well, and on the spit they are more like the wild duck than any other. The varieties of waterfowl may be as well studied in the enclosure of St. James's Park as anywhere, unless it be in the magnificent aviaries of the Earl of Derby.

THE CALL DUCK.

The *bantam* of its race, usually coloured like the wild mallard, but often *white*. This colour is preferred by fowlers who use it in the decoys, as it is easily distinguished from the others. A beautiful pair of these birds was shown by Mr. Baily, of Mount Street, at the recent Poultry Exhibition at Birmingham, and attracted great admiration. Some of the tufted ducks were also exhibited and were much admired; these birds are a Wiltshire breed, with compact and elegantly rounded crests, and are very handsome.

The Aylesbury and Rouen varieties are the most valuable, and the only varieties to which I conceive it necessary to call particular attention.

The wild duck pairs strictly with a single mate; the domestic drake does not pair, and should have from four to six mates, as circumstances may indicate.

CHAPTER X.

THE DISEASES OF FOWL, WITH THEIR SYMPTOMS AND TREATMENT.

I MAY here premise, that when you see a fowl beginning to droop or to exhibit a deficiency of appetite, it is better at once to devote it to

table use. If, however, the fowl be of great value—perhaps a Spanish cock worth a guinea or upwards—we must make an attempt to save him.

The most common diseases to which fowl are liable, are as follow :—

1 Moulting.	5 Diarrhœa.	9 Consumption.
2 Pip.	6 Indigestion.	10 Gout.
3 Inflammation.	7 Apoplexy.	11 Corns.
4 Asthma.	8 Fever.	12 Costiveness.

ACCIDENTS

Producing fractures, bruises, ulcers, loss of feathers, &c., may, in most cases, be left to nature. When bones are broken, in most cases the patient had better be consigned to the cook. In other cases of accident the good sense of the owner will generally dictate the remedy.

MOULTING,

While, as being a natural process of annual occurrence, it can scarcely be called a disease, yet must be treated of as if it really were one, from a consideration of the effects which it produces. It is most dangerous in young chickens. With adult birds, warmth and shelter are usually all that is required, united with diet of a somewhat extra stimulating and nutritious character.

Dr. Bechstein remarks, that, in a state of nature, moulting occurs to wild birds when their food is most plentiful; hence, nature herself points out that the fowl should, during that period, be furnished with an extra supply of food. After the third year the period of moulting becomes later and later, until it will sometimes happen in January or February. Of course, when this occurs, every care as to *warmth* should be bestowed. The use of Cayenne pepper alone, administering two or three grains made into a pill with bread, will generally suffice. Do not listen to the recommendation of ignorant or presuming quacks; if this simple treatment do not help them through, they will die in spite of all you may do.

The feathers will at times drop off fowl, when not moulting, to a very considerable extent, rendering them often nearly naked. This is a disorder similar to the mange in many other animals; and the same sort of treatment—viz., alteratives, such as sulphur and nitre, in the proportions of one quarter each, mixed with fresh butter, a change of diet, cleanliness, and fresh air in addition to this—will generally be found sufficient to effect the cure. Be careful not

to confound this affection with moulting. The distinction is, that in the latter case the feathers are replaced by new ones as fast as they are cast; in the former this is not so, and the animal becomes bald.* Mr. Martin relates an anecdote which would indicate that fear has influences as great upon birds as on the human being. "A cock," he says, "belonging to a friend, was dreadfully frightened by a dog, and became white, but recovered his natural plumage at the next moult. A black Poland cock, belonging to Mr. Kendal, of Barnsley, was less fortunate; being seized near the house by a fox, but his screams being heard, he was rescued, desperately wounded, with the loss of half his feathers. In time the remainder of his feathers came off, and he became perfectly white."

PIP.

A disease to which young fowl are peculiarly liable, and that, too, chiefly in hot weather.

The symptoms are—a thickening of the membrane of the tongue, especially towards its tip. This speedily becomes an obstruction of sufficient magnitude to impede the breathing; this produces gasping for breath; and at this stage the beak will often be held open. The plumage becomes ruffled and neglected, especially about the head and neck. The appetite gradually goes; and the poor bird shows its distress by pining, moping, and seeking solitude and darkness.

The cause of this disease is want of clean water and feeding too much upon *hot exciting food.* Dr. Bechstein considers it to be analogous to the *influenza* of human beings. In fact, theories respecting its nature are too numerous to mention; and are of very little practical importance.

Cure.—Most writers recommend the immediate removal of the thickened membrane. I do not like this. Mr. Martin in his excellent work, recommends that the tongue be cleansed by applying a little *borax* dissolved in tincture of myrrh, by means of a camel-hair pencil, two or three times a-day, We would rather anoint the part with fresh butter or cream. Prick the scab with a needle, if you like; and give internally a pill about the size of a marble, composed of:—

Scraped { Garlic, / Horse-radish, } equal parts.

As much Cayenne pepper as will outweigh a grain of wheat.

* Sulphur has by many been absurdly set down as poisonous to fowl. I can only say, that such an assertion is not only contrary to reason but to practice; in my opinion it is one of the *safest* and most valuable medicines we can employ in the treatment of their diseases.

Mix this with fresh butter, and give it every morning—keeping the fowl warm. Keep the bird supplied with plenty of fresh water; preserve it from molestation, by keeping it by itself, and you will generally find it get well if you have taken the disease in time. Do not let any one, equally ignorant and cruel, persuade you to cram the mouth with *snuff* after having torn off the thickened membrane with your nail. This is equally repugnant to humanity and common reason. Miss Manning recommends forcing tobacco-smoke down the bird's throat; and when, as sometimes is the case, the disease depends on the presence of a worm, then it is most successful.

INFLAMMATION.

Most of the diseases to which poultry are subject may be traced to inflammation exhibiting itself in some part of the system.

Inflammation of the Trachea.—The disease to which this term is improperly applied is an inflammation of the tail-gland. The true roup is a disease extremely analogous to influenza in man, or even more so to the well-known distemper among dogs; and, in some forms, perhaps, to the *glanders* of the horse, and is sometimes termed Gapes and sometimes Roup or Croup.

The symptoms are—difficulty of breathing, constant gaping, dimness of sight, lividity of the eyelids, and the total loss of sight; a discharge from the nostrils, that gradually becomes purulent and fetid: appetite has fled; but thirst remains to the most aggravated extent. Sometimes this disease appears to occur independently of any obvious cause; but dirt, too hot feeding, and want of exercise are amongst the most usual.

The remedies recommended are various. Mr. Martin* prescribes one grain calomel made up with bread into a pill, or, if preferred, two or three grains Plummer's pills (*pil. hydr. Submur. co.* Lond. Pharm.). after which let flour of sulphur be administered mixed with a little ginger, mixed barley meal reduced to a paste, and the mouth well washed in a weak solution of chloride of lime. In the mean time, let the bird be kept in a dry, warm, well ventilated apartment, and apart from the other fowl. When the bird dies of this disease, the trachea will be found replete with narrow worms about half an inch in length imbedded in slimy mucus. This singular worm is the *distoma lineare*, a long and short body united, the long body being the female, the short the male; they are permanently united, otherwise they are quite perfect in themselves. Mr. Martin is uncertain if these worms are

* Penny Cyclopædia.

the cause or consequence of the disease; but it is certain when they have once established themselves, their removal is necessary to give the bird a chance of recovery. This is sometimes done by means of a feather, neatly trimmed, which is introduced into the windpipe, and turned round once or twice, and then drawn out; this will dislodge some of the worms if dexterously performed, and with some knowledge of the anatomy of the parts.

A correspondent of the Rev. Mr. Dixon administered spirit of turpentine in rice, and afterwards a little salt in the water given them, by which he saved sixteen out of twenty chickens attacked with this disease. For my part, I shall record a case related by an intelligent Middlesex farmer:—

"A cock, of about four or five months old, apparently turned out by somebody to die, came astray, and was in the last stage of roup. The discharge from his mouth and nostrils was very considerable, and extremely pungent and fetid; while his eyes appeared to be affected with an inflammation similar to Egyptian ophthalmia. The cock was placed at the fireside, his mouth and nostrils washed with soap and warm water, his eyes washed with warm milk and water, and the head gently rubbed with a dry cloth. Internally he was given long pellets formed of—

Barleymeal, Flour, } equal parts.
Mustard, Grated ginger, } equal parts and half the above.

He was also given to drink, lukewarm water sweetened with treacle.

"In three days this bird began to see, and in a week his sight was almost perfectly restored. A little mustard was still given him in his water; and then some flower of sulphur. He had also a pinch of calomel in some dough. He was generally brought out so as to inure him to the cold, and in a month was as well as ever.

"Having moulted late, the same bird caught cold at the first frost, and suffered a relapse—from which, however, he was recovered by warmth alone."

My treatment would merely be a modification of the above—warmth and cleanliness, as matters of course; but, for pellets, I prefer—

Powdered gentian.	- - -	1 part,
Powdered ginger,	- - -	1 ,,
Epsom salts,	- - -	1½ ,,
Flower of sulphur,	- - -	½ ,,

Make up with butter, and give every morning.

If the discharge should become fetid, the mouth, nostrils, and eyes may be bathed with a weak solution, composed of equal parts of chloride of lime and acetate of lead. Fomentation with an infusion of camomile flowers is also highly beneficial.

The other affection—that improperly passed under this name—viz., swelling of the tail-gland—may be treated as a *boil*. If it become inconveniently hard and *ripe*, let the *pus* or *matter* out with a penknife, and it will soon get well.

Inflammation of the Lungs is attended by quick breathing with a rattle, an audible dulness, disorder of plumage, vacancy in the eye, and general indisposition. Bleeding, the natural remedy for such symptoms, is out of the question, for how is a bird to be bled, and where?

Inflammation of the Heart.—A fatal disease among poultry, and only detected by examination after death. The patient appears to droop, refuses to eat, retires to roost, and is found dead in the morning. In this case, the peritoneal membrane exhibits indications of active inflammation. Inflammation of the heart is more peculiar to parrots and caged birds of that description.

Inflammation of the Mucous Membrane.—Generally proceeds from aggravated diarrhæa. The bird is severely purged, and the evacuations become more or less tinged with blood, and death ensues unless a speedy remedy is applied. Damp and improper food are the cause of the disease. The remedy, to be successful, must be administered early; first, give a small quantity of castor oil; this will clear the bowels of irritating secretions; afterwards, give doses of *hydrargyrum cum creta*, (Lond. Pharmacopœia), with rhubarb and laudanum, as follows:—

Hydr. cum creta - -	3 grains.
Rhubarb. - - -	2 or 3 grains.
Laudanum, - - -	2, 3, or 4 drops.

Mix in a teaspoonful of gruel, and give twice a day.

ASTHMA

Is characterised by gaping, panting, and difficulty of breathing.

We need not go far to seek for a cause. Our poultry are originally natives of tropical climates; and, however well they may appear climatized, they, nevertheless, require a more equable temperature than our climate, unaided by artificial means, can afford. Hence coughs, colds, catarrh, asthma, pulmonary consumption.

Cure.—Warmth, with small repeated doses of hippo powder and sulphur mixed with butter. The addition of Cayenne pepper will be an improvement.

DIARRHÆA

Is occasioned by damp, and sometimes by improper food. Remove the bird into dry quarters; change the food; if it become very severe, give chalk; add a little starch, mixed with Cayenne, to porridge, and give it moderately warm.

INDIGESTION.

Caused by over-feeding and want of exercise.

Cure.—Lessen the quantity of food; turn the fowl into an open walk, and give some powdered gentian and Cayenne in the food.

APOPLEXY.

Symptoms.—Staggering, shaking of the head, and a sort of tipsy aspect. Some persons have, from ignorance of the true cause of this affection, treated it as proceeding from intestinal irritation, and prescribed castor-oil with syrup of ginger, &c. Scanty food, and that of light quality, and the application of leeches to the back of the neck, constitute, in my opinion, the only effectual remedy. Perhaps, however, it is better to have the poor bird at once handed over to the cook.

PARASITES IN FOWLS.

The insects which infest animals of all kinds, more especially domesticated ones, are the bane of their existence. In poultry they are particularly obnoxious, and the utmost possible cleanliness and frequent lime-washing and fumigation, are necessary to keep them in proper condition. L. B., a correspondent of the Agricultural Gazette, had a beautiful brood of black Spanish chickens hatched; taking one in his hand on the second day, he was much struck by observing on its poll five or six full-sized lice (*Goniocotes hologaster*), evidently caught from the mother. All the brood he found similarly affected. Some white precipitate powder, applied with a small camel-hair pencil, was powdered over them, and the day after the parasites had disappeared, nor could he afterwards discover one during their after growth. This powder must be applied in very small quantities.

Like the domestic fowl the peacock has also its parasites in the

Goniodes pulcicornis. "After the death of the bird," says Mr. Denny, in the *Monograph. Anapluroruin Britanniæ*, "the insect may be found congregated in numbers about the base of the beak and crown of the head." Mr. Denny was afterwards induced to examine all the genera of domesticated birds, and he found on the Turkey *Lipeurus polytrapezius* as a common parasite; the *Goniodes stylifer* is also frequent in the head, neck, and breast. Over the domestic fowl he found three species of parasitic *Goniodes dissimilis* of rare occurrence. *Lipeurus variabilis* preferring the primary and secondary feathers of the wing, among the ribs of which they move with great celerity. *Menopon pallidum* he also found in great abundance on the domestic fowl; and, as a general rule, he observed that when two or more species frequented the same species of bird, each had their own locality.

The remedy in all cases is cleanliness, and where the fowls are over infested, fumigation and a plentiful sand bath of clean dry and rough sand; for the white precipitate powder, named above, is poisonous, and only fit to be used on very young birds which have not yet learned the art of preening their feathers with their bill.

FEVER.

Fowl are frequently subject to febrile affections.

The mode of treatment is simple—Light food, and little of it; change of air; and, if necessary, aperient medicines—such as castor-oil, with a little burnt butter.

CONSUMPTION

I regard as incurable; but, if anything will do good, it is change of air and warmth.

GOUT.

Its effects are obvious. Pellets of Colchicum may be used; but if you had, as you should have done, killed your fowl before they became *so old*, it would have been more rational. They are now past use. Sulphur may also be found useful.

CORNS.

These may generally be extracted with the point of a penknife. If *ulcerated*, as will often occur when neglected, touch with lunar-caustic, and you may thus succeed in establishing healthy granulations.

COSTIVENESS.

This affection will, in general, yield to castor-oil and burnt

butter. The diet should be sparing. Thin porridge will be found useful.

In the case of fractures, my advice is to put the fowl to death without loss of time. The same may be said of bruises. By this you not merely avoid some loss, but save the poor bird much protracted suffering.

The accidental stripping of the feathers must not be confounded with the mangy affection already treated of. The difference will be seen by examining the state of the skin where it is exposed.

Ulcers may be kept clean, dressed with a little lard, or washed with a weak solution of sugar of lead, as their aspect may seem to indicate. If they appear sluggish, they may be touched with *bluestone*.

CHAPTER XI.

CAPONIZING.

In former editions of this work, I omitted all allusion to the above practice; since, however, I have heard so much upon the subject, and have had so many inquiries made of me, in relation to it, that I conceive the devotion of an additional chapter to its consideration will prove anything but unwelcome to my readers.

The objects proposed in converting a cock into a capon are the following:—His natural fierceness is quelled; he becomes placid and peaceful; his pugnacity has deserted him; he no longer seeks the company of the hens; he grows to a far larger size than he otherwise would have done; he acquires flesh with far greater rapidity, and that flesh is peculiarly white, firm, and succulent, and even the fat is perfectly destitute of rankness. To these advantages another may, perhaps, be added—viz., the capon may, by a little management, be converted into an admirable nurse, and will be found particularly valuable, in this respect, to parties using the *eccalobeion*, or hatching-machine.

I shall now proceed to a description of the process, relative to which I may just remark, that it has been made a subject of much unnecessary mystery, and, I regret to add, of much unnecessary *cruelty*. In point of fact, the process of caponizing is an extremely simple affair, and one which the country henwives in France perform with facility and certainty (assuredly there are some "things" which "they

manage better in France"). The practice of the French country women is to select the close of the spring, or the beginning of autumn, as well as fine weather, for the performance of their work. The parts necessary to be removed being fixed in the abdomen, and attached to the spine at the region of the loins, it is absolutely necessary to *open the abdominal cavity* for the purpose of their extraction. The bird should be healthy, fasting, and about three months old. He is then to be secured by an assistant, upon his back, his belly upwards, and his head down, that the intestines, &c., may fall up towards the breast; the tail is to be towards the operator. The right leg is then carried along the body, and the left brought backwards, and held in this position, so as to leave the left flank perfectly bare, for it is there that the incision is to be made. The said incision is to be directed from before backwards, transversely to the length of the body, at the middle of the flank and slightly to the side between the ends of the breast-bone and the vent. Having plucked away the feathers from the space where it is intended to make the incision, you take a bistoury or a razor, and cut through the skin, abdominal muscles, and peritoneum; it is better to do this at two or more cuts, in order to avoid the possibility of wounding the intestines—a casualty that would, in most cases, be attended with fatal results. The intestines present themselves at the orifice; but you must not suffer them to come out; on the contrary, you press them gently aside, so as to have room for action. I may observe, that the incision should have been sufficiently large to admit of the fore-finger, previously well oiled, being passed into the abdomen, and carried carefully towards the lumbar region of the spine: you will there find what you are in search of. You first reach the *left* substance, which you detach with your nail, or with your finger bent hook-fashion; you then arrive at the right, which you treat similarly—bring both substances forth; you finally return the intestines, sow up the wound with a silk thread—a very few stitches will suffice—and smear the place with a little fresh butter. Some persons recommend the amputation of the comb, close to the skull of the newly-made capon; but this is surely an unnecessary piece of torture—a useless addition to the sufferings of the poor bird. The proposed object of this amputation is to insure the recognition of the capon amongst his co-mates of the poultry-yard. Were such a distinctive mark necessary, it strikes us that the operation must have been, so to speak, thrown away; inasmuch as the superior size and bulk of the capon should, of themselves, be sufficiently indicative of his identity; but independent of these, I may observe that the *comb* of the capon does

not grow to any size, and always retains a *pallid* colour. Should it be proposed to caponize cocks belonging to varieties not naturally possessing combs, it will surely be found, at the very most, sufficient to cut the tail feathers down to a stump. In some parts of the continent, the caponizers resort to still more unnecessary brutality. They cut off the spurs of the poor caponized bird, and, making an incision in its comb, as it were *plant* them in it; they are so held for about tweuty minutes—in short, just until the blood coagulates; they then become not merely permanently adherent, but actually *grow*. The less, however, said about these very, and needlessly, inhuman practices the better.

To return to our more immediate subject:—The process having been performed as above described, the bird is placed in a warm house, *where there are no perches*, as, if such appliances were present, the newly-made capon might very probably injure himself in his attempts to perch, and perhaps even tear open the sutures, and possibly occasion the operation, usually simple and free from danger, to terminate fatally. For about a week, the food of the bird should be soft oatmeal porridge, and that in small quantities, alternated with bread steeped in milk: he may be given as much pure water as he will drink; but I recommend that it be *tepid*, or at least that the *chill* be taken off it. At the end of a week, or, at the farthest, ten days, the bird, if he has been previously of a sound vigorous constitution, will be all right, and may be turned out into the walk common to all your fowl.

I have observed that the principal objects proposed to be attained by the operation of caponizing are, a remarkable facility of fattening, and, consequently, enhanced profits to the feeders or breeders, and, under some circumstances, the acquisition of a greater degree of docility, so that the capon may even be taught to tend a brood of chickens. This practice is pretty extensively adopted on the Continent; and, although I can say but little in its defence, I cannot avoid detailing the *modus operandi* resorted to in such cases. Where it is deemed desirable to compel a capon to perform the office of a "dry-nurse," one of the vigorous and hardy birds is selected, the feathers are plucked away from his belly, and the denuded part rubbed with nettles; the capon is fed upon bread steeped in wine, until he becomes quite drunk. In this condition the poor bird is put into a cage with two or three half-grown chickens; these, by rubbing their soft little bodies against his denuded nettled skin, assuage his smarting, and the ease they thus impart, not only induces him to tolerate their presence after he becomes

sober, but even causes him to conceive a strong attachment for them. After this proceeding has been repeated once or twice, the capon becomes so fond of his young charge, that he may be safely intrusted with as large a clutch as his size will admit of his covering. The poor, ill-used bird seems delighted with his new occupation; he attaches himself to his little flock, leads them about, and even caters for them as assiduously as the most constant hen. The *Malays* are particularly adapted for caponizing, and, when properly fattened, at a suitable time after the operation, attain a bulk and weight that would surprise such persons as have never seen a caponized specimen of that breed, the birds, in fact, rivalling the finest turkeys.

An operation of a similar nature is, in some places, performed upon hens, either before they have begun to lay, or after they have ceased to do so, for the purpose of preventing them from laying in future. This renders them, as the other does the cock, more susceptible of taking flesh, and that of a finer quality than ordinary. It is proper to remind the reader that, of course, when it is deemed advisable thus to deprive a hen of the power of reproduction, such a one should always be selected as presents deformities or other defects that ought to render her unfit for breeding purposes.

The caponizing of pullets is performed in much the same manner as in the case of cocks. The oviduct is found towards the loins, and is extracted in the same manner as already described in the former case. Some French writers, however, and Schreger amongst the first, state, that in the case of pullets or hens the operation is unnecessary, it being only required to make a small incision just above the vent, on a little eminence that will be perceived in that place; then, by repeated pressure, you cause the protrusion of the uterus—a little whitish body; this is cut away, the wound heals of itself, and nothing further is required.

It is, perhaps, proper to remind the operator that when he conceives it necessary, in either case, to employ sutures for the purpose of closing the wound, great care must be taken to avoid involving the *intestines* in the stitches. It is also right that I should warn the operator that, if he be tedious in the performance of his work, the chances are greatly against his success. On this account I would strongly advise that whoever proposes to caponize should acquire dexterity of manipulation by practising on the dead bird, before he endeavours to use his knife upon the living: when such precautions are used, the operation will be divested of much of its apparent cruelty; and if it *be to be resorted to at all*, surely every precaution should be

taken that is calculated to cause as little outrage to humanity as possible.

Sometimes, but rarely, this operation is performed on turkeys, geese, and ducks; the reason why it is performed so rarely on these birds is, that, from the great plumpness of their bodies, what we want to arrive at is farther from our reach, the operation, of course, so much the more difficult, and the probability of success so much the more remote.

The capon is so very much disposed of itself to take on flesh that it will, in general, attain to sufficient condition in the yard, or about the barn door. Sometimes, however, it is deemed advisable to *cram* him. This practice induces rapid growth in little time, a very delicate quality of flesh (I except the caponized gander from this), and also causes him to fetch a higher price in the market. When it is considered desirable to cram a capon, he is taken and placed in a dark and quiet house, or coop, so small that he shall be unable to exercise; he may then be fed with pellets of meal and milk. Some recommend *barley-meal* for this purpose: I do not; as I consider its laxative qualities would be calculated to frustrate the end in view; but I *do* recommend pellets formed of any of the descriptions of food mentioned in my chapter on feeding. *Pea-meal* or *bean-meal* will be found to impart a fine flavour to the flesh, but if this description of food be found too *binding*, let *pellets of barley*-meal be given, till the undesired effect is removed; the bird should be left as much food as he will eat, and should, besides, be *crammed* at least three times a day. In three weeks he will be ready for use. It may not be amiss here to remind the reader that the *droppings* of the bird are almost, if not quite, as valuable as guano for the purpose of manure.

A little dish of fine gravel or coarse sand, left in the feeding trough, will be relished by the birds, will promote digestion, and will, of course, thus aid in conducing to their rapid fattening.

In concluding this additamentary chapter, I would just beg to be permitted to observe, that I offer no defence of the practice of either caponizing or cramming; neither do I conceive it necessary, however, to volunteer as the assailant of either one or the other.

What I have above written has been principally derived from careful inquiry into the practice of our continental neighbours, amongst whom the art of caponizing (as well as many other arts equally designed to be subservient to those artificial tastes that cultivation has engrafted upon nature's primitive stock) is much more practised than in our islands. Perhaps, also, the above account may,

and I sincerely trust that it will, cause the exposure of ignorant and impudent impostors—impostors whose ignorance and impudence are equaled only by their forgetfulness of what is due to the common dictates of humanity; and if the to-be-caponized cock *must suffer*, that his suffering shall at least be, to some extent, mitigated.

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