



### HEALTH AND CONDITION.



THE state of thriving prosperity in Poultry so well known to connoisseurs as condition, is of such primary importance that it may justly claim first attention.

When fowls get ill and die, without any apparent cause, careful observation may generally trace it to one or other of a few fertile sources of evil to them. They have been overcrowded, they have had too much pampering, or they have had too little care. All fatal faults in feeding come under one of the last two heads.

If the apparent health and appearance of the fowls be not satisfactory, visit the hen-house after it has been some hours shut up at night, and if the air be offensive there need be no further quest after the cause of illness or other evil there may be among the living beings breathing its close atmosphere for many hours.

The remedy should at once be applied by decreasing the number of fowls, and by giving increased ventilation.

A hen-house 6 or 8 feet square will do well for seven old fowls, or one large brood of chickens. More crowding will not lead to a good result ; so if the increase of the stock seems to render it necessary, consider means for housing the youngsters out of doors, in coops or by other contrivances, rather than overfill the houses.

Fowls, even the tallest, live and breathe very near the surface of the ground ; and when the earth becomes foul from having had live stock on it for some time, they cannot fail to inhale the malaria engendered by it. Human beings in such an atmosphere would fall in as great proportional numbers as do the fowls of the most unfortunate amateurs ; sanitary measures in their case stop epidemics, and they are the remedies to use with our fowls, or we must not look to have them prosperous and healthy.

The most valuable sanitary measure for the fowls is to renew the surface of the runs by paring from time to time. Spring is a good time to do it, when the pared-off surface, rich with guano-like manure, is a valuable strong fertilizer. Duck and pigeon manure are the strongest.

Means must be taken to dry the runs, made pure by paring. Low damp ground should be drained. Excellent runs may be made by paring the ground one spit deep, *i. e.*, a foot, good measure, and filling in with a depth of nine inches of chalk and three of gravel.

Sometimes, when paring would be too trouble-



some, a sprinkle of lime over the surface will purify it, but the fowls should be kept off it until after rain. Where the fowls have extensive ranges the immediate neighborhood of the houses only will need this cleansing process ; but the floors of the hen-houses require renewal from time to time.

The kind of pampering which leads to over-feeding fowls, giving them dainties, such as meat, greaves, hemp-seed, Indian corn, and other fattening food, and keeping them too warmly housed, is a fertile source of ill-health. Poultry, to remain thoroughly healthy, and not to become unhealthily fat, should never have a grain more of food given than they can eat up at once with a hungry, healthy appetite ; they should not be fed too often, they should not have a variety of food given at the same time, and they should have to run for all the food they eat, and have it so thrown abroad that they shall have plenty of work, and consequently plenty of amusement, to find it.

The well-being of fowls requires that they have regular care as well as judicious economical feeding, regular meals, a regular supply of water, and regular cleaning. The real care that they require is not pampering and superabundant, almost incessant, feeding, and sometimes the less they are run after the better they will thrive ; but the little care they need should be administered with regularity. This is the kind of care that will keep poultry in the perfect health and good looks which amateurs know so well, and so fully appreciate as good condition.

A fowl in good condition is free and bold in gait, brisk in movement, and bright in the eye. The plumage is full, firm, crisp, and glossy ; the bird feels firm in handling ; it is neither too lean nor too fat, and the comb is clear and bright in color, according to the season.

When a bird is out of condition, in which case it will do no good service to its owner, it handles flabby, however fat it may be ; it is heavy and listless in movement, often craves continually for food, and seems too lazy to wander far to seek any for itself. The comb and eye lack brightness, but the plumage tells the tale most unmistakably ; it is dull, ruffled, and broken, sets away from the body, and either comes out with a touch, or adheres to the skin with unnatural tenacity, fixed by a kind of leprous scurfiness. A tendency to roup is often seen.

#### ARRANGEMENT OF STOCK.

The cheapest way to get up a stock, allowing time and work for the matter, is to buy really first-class reliable eggs, from sellers of established character. We must neither expect all the eggs to hatch, all the chickens which are hatched to turn out especially good, nor find fault with the seller if this be not the case ; for if he is honest he will tell you that when eggs are set at home, without the no small trial of a journey, the hatching of two out of three is a pretty good proportion, and a first-class pair from each brood is ample return for the outlay, reckoning the value of the eggs at the usual price charged for eggs for setting, and the trouble of rearing.

If it be wished to get a good stock together, without the delay of rearing chickens, it may be done by purchasing fowls.

An old rooster should be mated with pullets, or a fine cockerel of the year before with old hens. Good breeders consider it better to mate a one year old bird with young hens, than pullets with an old bird.

In-breeding, *i. e.*, breeding among relations, must be carefully avoided. However fine the stock, it is altogether against the laws of good breeding to keep the pullets and the cockerels, and go on year after year breeding from them without the introduction of fresh blood. Doing so will produce decrease of size and weakly constitutions. In-breeding must, on no account, be carried beyond the first remove. The mother may be mated with her son, but the old game breeders did not consider the union of a rooster with the pullets bred from him nearly so good.

In the purchase of stock, therefore, take care to get hens and roosters which are not related, either by buying from different persons, or by asking the person of whom you purchase for roosters and hens of different families, which most amateurs, and all dealers, are able to manage.

It has not unfrequently happened that well-established, good stocks of fowls have been greatly injured by a carelessly introduced cross. When the introduction of fresh blood becomes necessary, the stock with which to cross should be chosen with reference to the qualities most wanted, and great care is necessary to prevent the increase of present failings by it. The purity of the breed and its stamina must also be especially considered ; for mongrel crosses, or a weakly constitution, may be introduced in one year, and may take a great many to eradicate.

With regard to the number of hens to be allowed to run with one rooster, various opinions have been given ; but while ten or a dozen may form one group for the production of eggs for that of really fine chickens the number should be limited to four, or at most six. With four hens, almost all the eggs which are laid will prove productive of fine strong chickens, provided, of course, the stock birds are good.

At the breeding season the breeding stock should most decidedly be confined to runs, if purity and precision in breeding be a desideratum ; and each family, consisting of a male bird and his harem, should be kept distinct. This separation from stock birds less to be depended upon than those which are selected, should be arranged before Christmas, and continue until eggs are no longer wanted for setting, after



which they may have a fuller range, when the houses they have occupied will be valuable for other purposes.

So particular have some game breeders been in that important point, purity of race, that they considered that the character of the chickens might be influenced by the hen that hatched them, and would set eggs only under the hen that laid them, or one of the same breed, saying that roosters lost pluck by being hatched by common hens.

#### HOUSES.

A simple construction is better for a hen-house than a very elaborate air-tight building; for too confined air, while the fowls are at roost, makes the place offensive, and is more prone to engender disease than almost anything.

Poultry amateurs would be much at a loss in their building operations, if they could not have that useful commodity, the patent felt roofing. It measures 32 inches wide, and is a capital water-tight covering for a roof, or any other part of a hen-house; it is like wood and brickwork to the builder of hen-houses, and cheap withal.

About the cheapest regularly formed house may be made with it, stretched over a wooden frame, which should be rather stout, and well put together. The roof should be made of common boards, under the felt, which without that support is apt to bag, make hollows for water to lodge in, and become rotten in consequence. It nails most easily with iron tacks heated in a frying-pan; when up it requires tarring and thickly sprinkling with sand, which should be repeated every year to make it durable. In sunny weather a felt house is apt to be hot, so that, to keep it refreshingly cool, as well as for appearance sake, it is a good plan to plant quick-growing trees round it.

Tolerably stout wooden houses have done hundreds of amateurs excellent service. For the house to keep in good order, the wood should be well seasoned, and any amateur carpenter can put it up at small cost and trouble. Shape the house with a framework of battens. The lowest part may be 5 feet high, and the roof should have a good pitch, both to throw off the wet, and to make it airy. The cheapest description of boards will do for the roof under the felt, and scarcely any wooden roof is good without that covering, from its being liable, after being swelled with wet, to crack with the heat of the sun, and so let in water. If it be entirely of wood, the boards can either be placed horizontally, with an overlap of at least an inch and a half, or vertically, edge to edge, with fillets of wood nailed over the joints. A cheap roof, yet one which is tolerably lasting, may be made by covering the boards with gas tar and coarse brown paper. Lay on a coat of tar, then the brown paper, lapping it over a full inch where the sheets meet, and finish with another coat of tar. When the wooden roof is to be covered with either felt or brown paper, there need be no overlap of the boards, but they may lie edge to edge, either from ridge to eaves, or across. The boards, too, for covering the framework of sides, back and front of the house, can go either upright or across, whichever will use the wood to the best economy. Eaves should project well, to carry off wet.

If the boards are used rough, three-quarter inch planks will do, but if they are planed, inch deal will be required to make up for the waste.

A hatch for the fowls to go in and out, with a door to slip down over it, should be made when the house is built; sometimes two on different sides are found very useful, in case of changes in the run, which can then be put to one side of the house, instead of the other, without further alteration.

A more solid kind of house, as well as one which will be more costly, can be built with regular walls of brick, stone, rough stone, or earth. These may be more lasting, and the first three more secure from the attacks of vermin, but, of course, the cost both in material and labor will be greater.

For a brick wall, what bricklayers call half a brick thick is sufficient, as very great strength is not required. A pattern of a few feet square, made by leaving out alternate bricks high up on the side of the house, which will admit air that will not be too cold, is a good means of ventilation, and of giving light also.

Few amateurs would go to the expense of walls of hewn stone, but in neighborhoods where rough blasted rock or stone is plentiful, and consequently cheap, it makes good walls, which come rather cheaper than brickwork. To be sufficiently solid and stable these walls should be rather over than under a foot thick, and the stones fitted together with judgment, to avoid interstices causing weakness, or great consumption of mortar, of which, however well the stones may be fitted, a great deal will be used. While building this kind of wall it should be brought to a level surface at the top every 16 inches or so, which gives the stone a look of order in the arrangement, greatly improving the appearance, and also giving strength. All laminated stone, i. e., stone which has an appearance of being formed in layers, should have these layers placed horizontally.

Where building materials of most kinds are difficult to obtain, earth walls may be used with advantage, requiring, if the material be at hand, little outlay except labor. The proper earth is neither sand nor clay, but partaking of both. Clay, chalk, any calcareous earth, or sand, is bad for the purpose. The earlier in the season the building can be done the better, that it may have time to dry; but a time must be chosen when the earth is sufficiently dry for working, and the coarser and bolder it is the better. A foundation of brick or stone must be used, which can be brought 9 inches above the surface of the ground, or less if preferred. The wall is made by ramming in the earth, supported during the process by a mold formed of two planks of inch board. These planks for a cottage or similar building should be 12 feet long and 20 inches wide, formed of two breadths, and strengthened with cross pieces strongly nailed outside; but for a hen-house, summer-house, or similar edifice of less importance, they might be shorter. Cross-bolts fix these planks together (two near each end), with as many inches between the two boards as the wall is to be thick, say 14 or 16 inches, and the bolts have large heads at one end to fix them, and eyelet holes and cross pegs at the other. Place the planks above the brick foundation, bolt them together, and fit bits of board into the ends, to prevent the building material running out there, the little boards fitting in between the top and bottom bolts, and making (with them) the mold into a sort of box. Then work the earth up well, a little at a time, mixing in cut straw or some



similar material to make it bind ; and when it is used it should have just moisture enough to adhere together, under the pressure of the thumb and finger. Ram in no more at a time than will make an inch and a half when well rammed ; and the rammer, to do its work well, should be no more than an inch and a half wide. When the earth is well rammed down, as high as the mold will allow, draw out the cross-bolts, remove the planks, and fix the mold further on, the bolt at one end being fitted into the hole left by that at the other, only one end board being of course required. When each layer of the wall is completed the mold must be placed higher, fitting the bottom bolts into the holes left by the top ones, and after each course pour over the surface (to make the next course adhere, and also to give a nice appearance) a small quantity of thick grout composed of one-fifth lime and fourth-fifths earth.

Before the wall dries the holes left by the bolts must be carefully filled up with mortar made of one-fourth lime and three-fourths earth. If the same mixture be used for the wall, it will dry almost like stone.

A stout frame of wood must be fixed to shape the door, hatch and windows, and the building may have a smooth facing given to it of the mortar above named, or one made with more lime, or even a little cement. As a finish it may be washed with a mixture of lime and sharp sand, mixed in small quantities, and used while hot, which may easily be done by adding a knob of lime and the sand a little at a time, as it is used.

The roofing for houses of regular walls, like those of brick, stone, or earth, should be slates or tiles.

A slate or tile roof will be cold in winter and hot in summer unless it has a lining of some kind, for which any of the following substances will do, unless a regular ceiling of plaster be preferred : felt nailed to the under side of the rafters, and tarred ; a kind of inner thatch of straw, kept in its place by laths nailed to the rafters ; stout brown paper oiled or painted and nailed to the rafters.

Every hen-house should have a good wide door, as it may sometimes be useful to carry a hen-coop through it, especially in wet ungenial seasons ; and the door should be so placed, and so fixed on its hinges, that it will open back thoroughly. A window, too, is necessary, as light within is quite wanted, and it may not be advisable to fix the door open at all times in our climate. Perforated zinc, or close lattice, is good, and will give no more air than enough, except in very intense weather, when it may be covered with a bit of thin board or a sheet of brown paper.

Give the hen-houses a good lime-washing at first, to prevent vermin making a settlement in the wood or small cracks to be found about, and repeat it once a year at *furthest*.

When the house is complete, with door and window for convenient access and ventilation, a hatch for the use of the fowls, a good firm floor, which can neither be too cold, too easily saturated with impurity, nor too facile a harbor for vermin, and which can be kept clean without difficulty, all swept from the hand of the whitewasher, it must be fitted with perches and nests. All heavy fowls should have the perch made of a fir pole, not less than 4 inches across. One pole sawed in halves will make two perches ; they should be about 2 feet, or a little more, from the ground, and they should drop

into sockets, so that they can be taken down to clean or lime-wash. Light active fowls often crave to soar higher for roosting, but heavy birds should on no account be allowed to do so.

Almost anything, provided it be steady and clean, does for a nest. Some wild fowls like it to be secret and out of the way, but those that are tame and much noticed care little about that ; only take care that it stands firm (to provide against losses), and that it is filled with clean sweet straw or hay. Straw is best in warm weather, as hay is said to be heating, and consequently to encourage vermin.

#### HOUSES AND RUNS.

With regard to the size of the hen-house, the important point is that it should be sufficiently large for the air to keep pure and sweet when the fowls are shut up at night. A house of medium size, with a few fowls, is preferable to a large one with a great many.

One favorite form for poultry houses, with many extensive amateurs, has always been ranges of houses, side by side, each having a run belonging to it. Another plan has been a circular, octagonal, or square building, of large size, parted into several poultry houses, and with a run to each division, arranged round the building.

Every poultry run should have a shed. A felt roof on fixed supports, with a pitch from 4 feet at the back to 3 feet in front, will do. A little common boarding under the felt will make it very good, or a roof of feather-edged board will do exceedingly well. It should have a warm aspect ; under it should be spread fine dust in which the fowls may roll and cleanse their feathers, gravel to give small stones, without which fowls cannot remain healthy, and lime rubbish, or lime in some shape for eggshell, without a due supply of which they will not lay well.

Where the range is necessarily small, the important point is to have a small number of fowls in proportion to its size, and to clear off all supernumeraries before winter. Grass is excellent for fowls, but it is impossible to keep a small run in grass, as the constant tramp and scratching of even half a dozen grown birds will make it bare.

A well laid run, kept clean, *will do* for fowls, but a grass run is far preferable, if it can be managed.

#### FEEDING.

Perhaps there is no method of poultry feeding so injurious as throwing down a lot of food, from which they can fill their crops, scarcely moving from the spot where they stand. Fowls thus fed will grow fat internally, but they will not put on good firm meat, and strong useful muscle, nor will they acquire stamina and good constitutions.

Good feeding rather requires good space, but if the run be small, it must be made the most of by throwing the food as far as can be, and making the fowls run the whole distance, as many times as possible.

In a small run, where the green food must be given to the fowls, instead of their going afar to seek it for themselves, it is a good plan to tie up cabbage stumps and lettuces for them to pull at, rather than to throw them on the ground.



Three meals a day are quite enough for any grown fowls ; those that have range enough to enable them to pick up much for themselves will do well with two.

A good supply of clean pure water is as necessary as a regular supply of food. Perhaps there is nothing better in which to give the water, than firm standing crockery pans. They should be placed a little sunk in the ground, very firm and steady, in some out-of-the-way corner, where the fowls are least likely to step into them or overturn them, washed thoroughly inside and out once a day, filled once a day, and filled up whenever they require it. Each pan should hold as much water as the fowls for whose use it is intended could consume in twenty-four hours, but it should be replenished oftener in case of accidents.

The different kinds of food used in feeding poultry, are, grain of many varieties, the meal made from them by grinding, root and green vegetables, and meat, either given by hand, or found by themselves in the shape of worms, grubs, and such like. It is the best economy to buy food of the best quality, for poor or damaged things are dear at any price. The food, of whatever kind, should be fine of its kind, and in good condition. Worm-eaten corn, and meal which is full of mites, is deficient in nourishing properties and unwholesome.

Next in importance to good food is good variety in diet. Animals need change of food, and always thrive best and produce best upon it. Barley, oats, wheat, buckwheat, Indian corn, the meal made from all these, potatoes, lettuces, and all kinds of garden stuff offer a good variety, and may be yet further varied with rice, mangold, linseed, vetches, turnips, etc. A change, altered week about, has often been found to succeed.

Barley is used as whole corn more than almost any other kind of food, and it is good, but the stock will not thrive on it or any other grain, without variation.

Wheat is very nourishing, but rather too heating for poultry which has not full liberty.

Buckwheat makes an excellent change, and promotes laying ; on the continent it is more used than any other grain. Fowls like it very much when they get used to it, but when it is strange they will sometimes overlook it on account of its dark color.

Indian corn is good as an *occasional* change ; its fault is that it promotes internal fat rather than general plumpness, on which account it should be used with caution, and not for too long at a time.

The diet of fowls should never, however, be entirely corn. Since their gizzards are made for getting nutriment from corn, we do not think the use of it should be excluded, but they are omnivorous, and it is best to feed them at all times partly on soft food, *i. e.*, meal, and such like, and partly on corn. If two meals a day are given, we would give one of meal and other soft food, and one of corn ; if three, one of corn and two of soft food, generally, and sometimes, for a change, two of corn and one of soft food.

Meal of different kinds is the staple material for soft food. Perhaps the best of all is oats ground up, as already mentioned.

Barley meal is a good plain meal of moderate price, for

common use, and one which the fowls always seem to relish well.

Oatmeal is dearer. Good round Scotch oatmeal is excellent from its nourishing properties.

Malt dust is said to be very nourishing and good.

In buying meal, great care must be taken to get it good, as if it be old, stale, and mity, or made from bad corn, no stock can thrive upon it. It should be newly ground, from good corn, and kept until used in a cool dry place.

Potatoes are very good poultry food, in change with food of other kinds. The more mealy they are the better they are for food, so that if they are boiled they should be cooked in an iron pot, and put to dry after the water is strained from them. When they are given they may be broken to pieces, and scattered far and wide, like other food. For developing the mealiness, they may be better steamed than boiled, and yet better, by far, baked.

In feeding young stock, take care that the food is thoroughly good and appetizing, fresh and well made. Satisfy hunger at every meal, leave time between the meals for hunger to return, and never pamper appetite. If the chickens refuse to eat, they often know better what is good for them, than we do when we try to press or force them.

As the chickens approach maturity they will eat enormously. Let them do so. Let them have as much exercise as you can give them, and plenty of food will not hurt them. If they become too expensive, eat them or sell them ; clear them off any way you can, and leave space at liberty for future use.

All fowls, old and young, want green food. Giving them free access to grass is the best way of supplying it, and if we have not the opportunity we may give them turfs of grass in their runs. If the turfs are too large and heavy for the fowls to knock to pieces, they may be removed to a safe place and watered, and used again and again as often as the grass grows. Fresh cuttings of a lawn may be thrown into the runs, and will be relished.

Lettuces may be given to fowls and ducks ; turnip greens are good for them, and cabbage leaves, and any refuse from the garden may be given, if grass, lettuce, or turnip greens are not to be had. In the absence of green, boiled roots are better than no vegetable food.

Animal food also is necessary. That which they get for themselves in the shape of worms, grubs, etc., is the best, and in its absence the want must be supplied with a little cooked meat, cut small.

Forcing breeding—wheat, beans, peas and meat—may induce fowls to lay abundantly, but will not produce lastingly strong healthy fowls, and those thus fed will seldom either live out their natural term of life, or produce chickens of natural strength and stamina.

#### EGGS AND HATCHING.

Warm housing and abundant feeding make the hens lay early, provided they do not become too fat. Meat will bring them on to lay, and buckwheat, oats fried in fat, and brewers' grains are all good stimulants.

As the chicken season approaches, the best hens should be watched, that their eggs may be known, written on, and put



aside in order, as they are laid. If any have imperfect shells, a smooth round mark on one side, an appearance of a grown up crack, a look of weakness anywhere, or any irregularity of shape, they had better be rejected for setting, as they would be little likely to hatch, and very likely to break in the nest before the term of incubation was up, thus doing harm by soiling the other eggs, and possibly inducing the sitter to become an egg-eater by the temptation of a cracked egg, too strong to be resisted. The eggs, until they are wanted for setting, may be arranged in a box, according to freshness, and kept in a place where they will be cool, if the weather be hot, and safe from the frost if the weather be severe.

Eggs should on no account be stale when they are set, as, if they are, they will very likely not hatch, and if they do hatch the produce will be weakly. If the eggs are set at once, without becoming cold after they are laid, they will often hatch a day sooner.

There is no doubt as to its being best for a hen to let her set once a year, or even twice, especially if she be a good layer, as the rest and good feeding she gets while she is on the nest and rearing her chickens, prove very restorative. If, however, it is necessary to break her of the wish to set, it may best be done by changing her to a grass run, where she can find no nest to take possession of, or coop her on the grass, out of sight of her favorite nest, and avoid overfeeding.

If the broody hens are to be set, an appropriate place must be prepared for them. It never answers to let hens sit in the hen-house where other fowls are kept, as they will be continually interfering with them, and interrupting their work. They must, therefore, be removed to some quiet place which they can have to themselves, and even then they will want watching until each one gets thoroughly established on her own nest, lest they squabble together. The place for the sitters should be warm in spring, and not excessively hot in summer, as heat occasions too much evaporation for the well-being of the eggs, and often besides makes the hen feverish and ill, and consequently restless, and apt to come off too often and to break or crack her eggs by fidgeting. A damp warm atmosphere is that which is most favorable to incubation; cold and dry heat are both bad.

A box or basket well filled with clean straw, rammed down tight, a foot or more in thickness, under the hen at first, is good. Never use a nest, unless it be a hole in the earth, which has not a good massive thickness of straw under the hen; for if her attention to her own arrangements displaces the straw, and leaves the eggs on the bare bottom of the nest, there is positively no chance of success. A good sod of turf, covered with grass or close heather, the size of the nest, fitted to the bottom of it, with a nest of straw over, makes a very good nest.

Let every sitter have a clean new-made nest, as one taken from the hen-house, or which has been in use before, may be infested with insects; and never let the same nest be used twice for setting without having it thoroughly cleaned, washed and filled with fresh straw. The nest should be quite full to the top, so that the hen may never run the risk of breaking the eggs by having to jump down upon them.

When the sitting place and nests are duly prepared, the sit-

ters must be removed to them. Place them on the new nests, with not less than four nest eggs, or hard-boiled eggs, under each, and cover them up, or hang things round them, so as to keep them in the dark, until they are settled to the new nests. Let them keep to the nest eggs until they have been off to feed once only in the day, and returned to the right nests steadily of their own accord. Then the eggs may be given to each, from nine to thirteen, according to the size, with some certainty that the sitters will do well. It is a good plan to set two hens at once, and three are still better, as, if the broods are not large, they may be put together, or if any *contretemps* happen to one hen the eggs may be saved. If two broods be given to one hen to bring up, to save trouble, the second hen may be broken off from sitting, taking care to place her where she cannot hear the chickens; it does not often answer to set a hen on a second time with fresh eggs.

The requirements of the sitter are, fresh water, and a good meal of barley every time she leaves her nest to feed, which is generally once a day only, in the early part of the day. Barley is better than barley meal dough, and a sitting hen is very hearty; she will eat a good deal. It is best to let her come off of herself, and to know when she leaves her nest. Give her down plenty of food, without keeping her waiting for it, and see that she satisfies her hunger without molestation from other fowls, and that she returns quietly to her eggs. Besides food and water, the sitting hen wants a little green food, stones to promote digestion, and dry dust in which to roll and cleanse her feathers. If sitters have not the opportunity of keeping themselves free from insects in the dust bath, they will get infested with chickens' fleas, which torment them so that it becomes quite impossible for them to remain quiet, and they will often leave the nest and forsake the eggs. A good heap of dust, in which to roll, is almost as necessary to a sitting hen as her daily meal. After she gets thoroughly accustomed to the place and the nest, a run out of doors to pick up insects, and peck at grass, will do her good, care being taken to see that she goes back in due time. Some hens return to the nest in a very short time; others remain off the great part of an hour. It is better not to allow them to wander too long or too far.

The eggs ought to hatch the day three weeks from that on which they are set. Under favorable circumstances the chickens make their appearance the day before.

The growing and expanding chicken does all the work of breaking the shell; the sitter takes no part in it, but only gives her genial warmth. As soon as she hears the chick within the shell her eye puts on a bright pleased look, by which any one who watches hens closely, may know that the maternal instinct is gratified by the certainty of success, and her note changes to the pleased "took, took," the mother's call.

The first sound within the shell is a soft tapping, occasioned by the first action of the lungs of the now fully formed chicken, expanding with the air gaining admittance to the air cavity at the broad end of the egg, through the pores of the shell. The chick, growing, expanding, and unfolding from the cramped closely-packed position in which it has grown, presses the tip of the beak against the shell with sufficient force to start it. Still expanding and unfolding, it extends the cracks which the



little beak has made, until the shell opens completely into two unequal parts, and the little wet weakly chicken emerges; then the mother's warmth nourishes it into dryness and strength. When the chicken first comes out of the shell, the moist down lies close to the skin, each particle enveloped in a kind of sheath. As the down dries, it throws off these sheaths, which may be seen scattered over the nest, and expands into the soft full covering which clothes the young chickens in warmth and beauty. The next thing is, it wants to eat; but this does not happen until it has been many hours hatched.

It is best not to interfere with the mother and vex her by taking her chickens from her; but as soon as the little ones are seen to pop out from among her feathers, a little sopped bread in a cup may be placed before her; she will be hungry, and will eat herself, and will feed her little ones as soon as instinct tells her they require food. Offer her also a little water to drink, which she will often be very glad of.

If the hatching is protracted, it is necessary sometimes to take the hen off, and look at the eggs, in case of untoward accidents, such as a weakly chick falling to the bottom of the nest, unable to recover itself, or an unhatched egg getting firmly fixed inside an empty eggshell. This last is not very unfrequent, as some hens have a habit of systematically packing away the eggshells, one in another, like market baskets, and sometimes push in an egg by mistake, when the chicken in it may be sacrificed. Hens which are so ill-tempered that they will not be touched without putting themselves in a tantrum, had better be left on the nest undisturbed, as, if touched, they may do more mischief to the eggs and chickens than is likely to arise from accident. Give the hen food while you tidy the nest, if necessary, and remove the empty eggshells. Keep the chickens which are hatched warm while this is done, let the hen go back, and when she is settled upon the eggs give her her chickens, putting them carefully, one by one, under her wings. Many hens are so good and quiet that you may raise them up and look under them, without taking them off, which is better.

The hen should never be unnecessarily interfered with. On the day of hatching, get her off to feed at her usual time in the morning, and then once in eight or twelve hours will be often enough to go to her, to see how the hatching progresses; but do not take her off the nest as often as that, unless circumstances render it necessary.

The more the hatching is left to nature the better, but there are rare instances when fine chickens would be lost, if not a little helped out of the eggshell.

At the end of the twenty-first day, put the eggs which remain unhatched to the ear, give them a turn over, and if the inside flops, take them away. If any eggs seem good, put them under the hen again; she will be more likely to hatch them in the night, when she sits down closer, than by day, when the early hatched chickens will be beginning to get active, and to move about around her in the nest.

If it is wished to hatch a good many chickens, the eggs may be examined when they have been set a week, when, if there are many bad ones, two batches may be united, and new lots given to the other hens. Hold the eggs, one by one, against a circular hole, an inch and a quarter across, in a rather dark-

ened place, with the sun shining outside. The chickens in the eggs, and the ramifications of veins inside the shells, will be plainly seen, and the eggs which have no chickens in them will show clear. So small an accident may interfere with the growth of the chicken in the egg, that unless more sitters are much wanted, I think it best to leave the nests undisturbed, except in taking away unmistakably bad eggs when they are known.

#### REARING CHICKENS.

When the hatching is done, the sooner the hen can be removed to a clean nest, free from vermin, the better. That which has been set in three weeks will have chickens' fleas, encouraged and increased by the unusual warmth, and if the chickens remain in it, they will swarm to their soft down in a manner to preclude the comfort and health of the brood. As soon, therefore, as the eggs are all hatched, or found not likely to hatch, put the mother and her brood into a comfortable warm clean nest.

An old clothes basket does as well as anything, for there should be plenty of room, or the chickens may get crushed.

If the weather be cold, warm the straw before the fire for a few minutes, or warm it in the sunshine if there be any, that the latest hatched, some of them possibly scarcely dry, may not be chilled by the change; and when the hen has settled down quietly, with her little ones under her, place food and water before her, that she may eat and feed her young family. The food thus early may be chopped eggs (shell and all), and bread crumbs, sop, oatmeal and barley meal mixed, dry and crumbly, and crushed corn, giving now as later only one thing at a time. The drinking-pan should be shallow, that the chickens may not get wet by going into it, or turning it over; and constantly replenished, that the old hen may not want.

If the weather is mild and dry, the sooner mother and family can be placed on the gravel, out of doors, the better; but at first it must not be for long at a time. They may be put down, with advantage to themselves, on the floor of a greenhouse, and if the hen can be allowed a roll in some dust in one corner, it will be good for her and for her chickens too.

Under a shed, where the ground is clean dust, mixed with small stones, is a good place for cooping the hen for the first ten days or so, and she may after that be placed on the grass in dry weather, but not before the dew is off it. During a portion of each day she should be cooped where she and her little ones may enjoy a roll in dry dusty earth.

In choosing a place for cooping the hen, care should be taken that she can have the shelter necessary for comfort. When she is loose she can lead her chickens into the shade, or into the sunshine, or to warm nooks sheltered from cold winds, and it is cruel to confine her to one spot without consulting her wants in these matters. The imprisonment alone is quite bad enough for the poor hen to bear. In the kind of coop used, and in placing the coop, take care that there is ample and complete shelter from wet. When the wind is cold, place the coop where the hen and her chickens may be sheltered from its chilling influence. During the heat of the day, shade from the broiling heat of the sun is as necessary as shelter from wet and cold. It is good to attain these ends by moving the coops about three times a day, or as often as necessary.



If the brood is housed at night, the hen may brood them on the ground, if it be bare earth, not cold pavement. She may either have a little straw thrown down, or take the chickens *into a large shallow firm-standing basket*. The main thing is, whatever the bed be, let it be clean and sweet; whether it be the earth or straw, let it be well cleaned every day, and renewed when it becomes soiled.

If two or more broods are put to roost in one hen-house, the old hens should be confined with coops, or they may interfere with each other, or injure each other's chickens.

The spite of hens towards chickens not belonging to them, must always be guarded against. The best way is, if it can be managed, to place the coops so that they cannot see each other.

From the time the hen is cooped out, especially after the wing feathers begin to show, the chickens must be plentifully fed on good food, well varied. Rice pudding, made of rice, sharps, or Indian meal, and milk, and baked, makes excellent nourishing food, to which eggs and chopped meat, one or both, may be added. Rice, boiled, and rolled in sharps or Indian meal, instead of the pudding, is good. Other kinds of food are oatmeal and barley meal, mixed into a dry friable mass, canary seed, crushed oats, and crushed barley. These may be varied with cooked potatoes (baked are best), bread sopped in milk or in water (brown bread is preferable to white) and buckwheat. To get size, meat may be given every other day. They should have green food of some kind every day. Varying the meals, and sometimes giving an entire change, feed the chickens constantly, as often as they get hungry, with as much food as they and the mother like, leaving none to get stale, waste upon the ground, and encourage hosts of sparrows. When they no longer eat eagerly, with a good appetite, throw no more down. At first, they will want a bit about every hour, and by degrees they will get hungry less often, until six meals a day will be enough.

Chickens which are hatched before the natural time—that is to say, before the nights become mild and the days sunny, and before the earth teems with insects which they can catch for themselves, and the absence of which no meat will compensate—must have a little artificial warmth.

Chickens hatched thus early must be fed after dark, as a fast from dark to daylight is too long. About ten o'clock at night put down a candle or a lantern, and place food and water before the hen, and the little ones soon get into the habit of expecting a meal at that time, and of making a good one.

It is a mistake to feed chickens on plenty of excellent food for the first three weeks, and then to some extent leave them to take their chance. As the fledging advances, they require better and more nourishing food than they do while in the down. The call which the growth of the feathers makes on the resources of the chickens is attested by the wonderfully rapid growth which immediately commences as soon as they are fledged, and this increased rate of growth renders good feeding still no less necessary, and so on until growth is complete.

About the best kind of coop is a wooden box, with a span roof (either 2 or 3 feet square, according to the space at com-

mand, and the size of the stock kept), to give shelter and shade, with a run of wirework rather larger to place in front of it, to increase the range for the hen. She may make use of both and the chickens have full liberty, running in and out through the wirework.

By the time the chickens are turned off by their mothers, it is generally necessary to clear them from the ground they have hitherto occupied, to make room for more young broods. It is far better if each brood can then have a house and run to itself. If so much room cannot be spared, care must, at any rate, be taken only to put together chickens of about the same age.

A few chickens well bred, well accommodated, well cared for, and well fed, will turn out a pleasure and a credit; a good many chickens crowded together, however carefully looked after and fed, will give a great deal of trouble, constant work, constant care, and constant disappointment, and make no commensurate return, either in satisfaction or profit.

The difference between cockerels and pullets may sometimes be detected while they are very young. In some the cock's comb soon shows. In most kinds the arrangement of the first wing feathers is rounder and wider in pullets than in cockerels, whose first wing feathers come more to a point; the pullets' heads are often narrower and finer than the roosters, and they fledge earlier on the back, down the sides of the breast, and at the back of the head. In fine robust chickens it is sometimes difficult to pick out the cockerels and pullets until the back is partly feathered, when the pointed saddle hackle feathers soon begin to sprout; the surest test of all.

As the chickens approach maturity, good feeding must still be continued, supplying the place of the rice puddings, canary seed, and other young chicken dainties with abundant supplies of oatmeal, barley meal, and good corn, and using discretion as to the supply of meat. The bits from the table may always be collected and divided among the chickens.

As they approach maturity, too, they must be allotted to their destinations.

The young birds which are picked out for the table may also be put to their destination. Plenty of exercise develops strength and firmness of muscle, and is good for chickens which have the duties of a long life before them; *i. e.*, a life which is long for chickens, four or five years or so. For eating we want tender, not strong, firm muscle; therefore the chickens which are to be eaten need not have an extensive range. They may be made happy in a small run, and well fed with several meals a day of oatmeal and barley meal mixed, just so dry that the balls will fall to pieces when they are thrown down, and a little corn, with good supplies of clean fresh water. Those who like good chickens in natural condition may follow this plan, giving them for a little time before they are wanted rice boiled in water, in milk, or made into puddings, as for young chickens; but those who like to fatten their fowls for the table can put them up in fattening coops.

When they are put up, feed with moderation at first, as repletion then, or at any time, would retard the fattening process. As soon as they are reconciled to captivity, feed them on oatmeal three times a day. Milk for mixing the oatmeal is best;



every meal must be given in a well scalded, clean trough; keep the coops supplied with clean water, and between the meals place gravel before them, for them to peck at, and a turf of grass. Keep the coops scrupulously clean, give the first meal at sunrise, or thereabouts, and the last at roosting time, and the chickens will be ready to kill in about ten days or a fortnight. As soon as they are fat enough they must be killed, or they will become unhealthy. When one lot is fattened, take down the fattening coops, scrub and limewash them, and put them out in the air for a time before using them again.

Those who wish to make fowls very fat by the unpleasant process of cramming, may either choose the finest and healthiest from the fattening coop, or any good fleshy young fowls. The food used is oatmeal, mixed stiff with milk, made up into boluses the size to be put down the chicken's throat without danger or choking it. To fatten more rapidly mutton suet may be boiled in the milk used to mix the oatmeal. The person employed in the cramming process opens the chicken's beak, and puts six or eight boluses down its throat morning and evening. If it seem to wish for food at noon a little can be given it in the trough, which must be supplied also with water and gravel. Those which have been put up will be finished off in a week; those which have to be fattened by the cramming will take fourteen or sixteen days. While they are fattening by either process they must be kept free from draft, as they will fatten all the better for being comfortably warm.

Some persons kill fowls by bleeding them in the mouth; others wring their necks. The quickest and most merciful way is with a dexterous jerk to *break* the neck.

## FANCY VARIETIES.

### DORKINGS, SPANISH, AND COCHINS.

The chief large fowls occupying the attention of fanciers are Dorkings, Spanish, Cochins, Brahmās, Malays, and Crève-cœurs, and the other French breeds.

**Dorkings.**—The chickens are delicate until they get into their feathers, and Dorkings of all ages are more subject to roup than most kinds. Unless they have a good or well-drained soil, or an extensive grass range, they do not lay well, and do not thrive well. On the other hand, they are excellent and economical for persons to keep who supply the markets, provided they possess facilities for keeping and rearing them with success, because they come forward early; they make their growth early in life, may be fattened off, and cleared off early, and thus leave the ground at liberty soon, and enable the owner to realize his returns in a short time. If Dorkings are kept, they must have great care in feeding, and perfect cleanliness. The stamina of the chickens may be improved by crossing with Brahmās, Cochins, or Game.

The hens are good sitters, and attentive good mothers, and where the locality suits them, they are very good layers of nice, well-flavored, and rather large eggs. There are few kinds which vary more, as layers, than they.

The white Dorking is the original type of the race. It

should have a square, plump, compact form, plumage of spotless white, delicate white skin, white legs, which should be delicate, not coarse, five toes well developed, clear white or pale yellow beak, and a well-formed, full-colored rose-comb. Size is an important point, and one in which white Dorkings have sometimes failed, but which the careful introduction of fresh blood from time to time improves.

The fifth toe on each foot is a matter of primary importance in all Dorkings, white and colored. Careful breeding has firmly fixed this property in the Dorking, and no fowl without it would have a chance of success at an exhibition, or of being purchased as a Dorking fowl anywhere. The fifth toe should be distinct and well developed on each foot; a sixth is no merit. The legs must have no suspicion of feathering.

The colored Dorkings, like the white, must be plump made, compact, and wide, with plenty of meat on the breast, short legs, and little offal. The comb may be single or rose, but all the combs in a pen must match well. The legs must be short, white, and delicate—*i. e.*, not coarse in the scales.

The plumage of colored Dorkings varies much, as may be expected in fowls which have been bred chiefly with reference to useful properties.

**Spanish.**—Brilliant black plumage, bright scarlet combs and wattles, and distinct and clear white faces make these fowls very attractive, and they are among the oldest as well as greatest favorites of poultry lovers; for early in this century, specimens which were at the time thought very choice, were brought to England from Holland. It seems probable that the kind may have been introduced into Holland from Spain, and taken up and improved by the keen Dutch fanciers, but now amateurs can find no vestige of the kind in the country which gives them their name.

Spanish roosters, especially, have a tall, majestic carriage, and the kind have the merit of doing well, and looking handsome and ornamental, if kept in a confined place, provided it be not overcrowded. They lay eggs which are very fine in size, but they are apt to be more woolly and less delicate in the white than those of many other fowls.

Cold, especially if it be damp cold, spoils the appearance of the old birds, by injuring the combs and turning them black. The combs of the hens shrink very much, and lose their beauty, while they are moulting, or when they are laying.

Spanish hens do not sit, so other sitters must be provided to hatch and rear the chickens; and for this purpose it is best to choose Dorkings, if possible, or, at any rate, some kind which does not throw off the chickens early. Spanish chickens had better not be hatched very early in the season, as they fledge late, and are delicate until they get into feathers; from March to May is the best time.

The Minorca is a variety of the Spanish, which, although wanting in valuable fancy points, is a good-looking, useful fowl, large in size, better for the table than Spanish, and a good layer of fine large eggs.

The Andalusian fowl is rather an attractive-looking bird; in form and carriage much like the Spanish, and evidently of the same family, with plumage either of a uniform slate color, or slate shaded or laced with black, and showy, well-developed scarlet combs and wattles. It has been stated that they were



brought from Andalusia, but some affirm that they have been bred from the Spanish—an accidental sport.

Cochins have the merit of being excellent layers. Good *Cochin hens* will lay every day, or two days out of three, until they want to sit; and they have the merit of being good layers in the winter, when fresh eggs are rarities.

The thing which most interferes with the production of eggs is the *Cochin's* constant habit of wanting to sit; but if she is allowed to sit, she very soon lays again.

Cochins are tame, docile, and manageable; little children may tend them without a chance of getting hurt, and they are friendly among themselves. When the hens sit, we may do what we like with them, and they are kind mothers as long as their nice little hardy chickens require their care. We can keep Cochins where we can keep no other fowls, and make them profitable with no other drawback to counteract all their merits than a too-frequent wish to sit, and the character they have of not being good for the table, which any careful breeder might remedy to a great extent.

Cochins, like all fowls that lay so many eggs, are rather greedy eaters, and they are very ready to fatten internally (hence often the shellless eggs, and two eggs a day); so that in feeding them care must be taken to feed moderately, and to avoid food of too fattening a nature. The fowls and the chickens will do well if fed and treated as recommended in the chapters on feeding and chicken-rearing. The dangerous time is from the time the wing-feathers are grown until the head is covered; and then they want plenty of good nourishing food. They are nicest for the table at from five to seven or eight months old: as young chickens, they are not nearly so good, but are better fowls when nearer maturity.

#### COCHINS, BRAHMAS, MALAYS, AND THE FRENCH FOWLS.

White Cochins must, of course, be perfectly white in plumage, and shown very clean.

Black Cochins have almost disappeared, on account of their incorrigible habit of moulting to a mixture of colored feathers among the black. The hens remain black, but the roosters almost invariably display a mixture of red or yellow after the first moult, if not before.

**Brahmas.**—No one knows the original stock; no one knows whence they came originally; this is the accusation that is brought against the Brahmas, the best fowls we have ever had, as regards the number of useful properties they possess.

The Brahmas are tame, docile, of a contented disposition, and almost as easy to keep in as the Cochins; but they like a good range when they can get it, and make the most of it far more industriously. The pullets do not lay so early as *Cochin* pullets, but taking the year round, the Brahmas produce more eggs than Cochins do, from not wanting to sit so often. They are good sitters and mothers, lay early after hatching, and often tend their chickens for weeks after they begin to lay.

They are good table fowls, being ready in putting on flesh, compact in make, full in the breast, juicy, and good in flavor. They should be large and heavy, of a free majestic bearing,

removed alike from the waddle of the *Cochin*, and the upright carriage of the *Malay*, compactly made, not long in the leg or neck, wide and full in the breast, wide and deep in make; legs are yellow and well feathered. The head is delicate in character, with a fullness over the eye which gives breadth to the top of the head, and a full clear eye. The tail is short and full.

In color, Brahmas range from an almost white plumage, with more or less black penciling on the hackle, and black in the feathers of the tail and wings, to dark-gray plumage. Perfection in a light Brahma is a white surface, with well-marked hackle, wings and tail, and such uniform pearly-gray under color, that the feathers cannot ruffle without showing it.

The **Malay**. Malays are great favorites with a few, but from their peculiar gaunt form they are by no means generally liked or kept. They are large heavy birds, with such hard close feathers that they are more bulky and weighty than they look. They are tall, with an upright gait; the tail is drooping and small, with beautiful, but not long, sickle feathers. The thighs are remarkably long, strong, and firm, and the tarsi round, stout and yellow. Their head is snake-like, with great fullness over the eye, giving it a flattened form on the top. The *Malay* has a bold eye, a red skinny face, and a strong curved hawk-beak. The comb is short, small, very thick, and close to the head, resembling half a strawberry; the wattles are very small, and the wings rather set up.

The favorite colors are different shades of rich chestnut brown, or cinnamon. There are also black-breasted reds, black, and white.

As fowls to keep, they have the great merit of doing well in any back-yard, and looking handsomer there than at a show. The hens are often pretty good winter layers. The eggs are of medium size, with tinted shells; they are good in flavor and hatch well. The *Malay* hen is a good sitter and a good mother, that will hold her own, and defend her brood with her good strong beak, if necessary. The chickens are hardy little things, if well bred; but they fledge late, and look gaunt and ugly when half grown.

**Crèveçœurs** and some other French breeds fill up our list of large fowls. It is curious that the change from a more favorable to a worse climate should seem to affect the well-being of fowls detrimentally, in coming only across the Channel, as the *Crèveçœurs*, *La Flèche*, and *Houdans* do, and not in coming half the circumference of the globe, as in the case of Cochins, Malays, and other Asiatics: but so it is. As far as I have had an opportunity of judging, importations from the farther side of Asia arrive here and do well from the time of their arrival; but many who have had the French fowls have found the *Crèveçœurs* more subject to roup than even the *Dorkings*, and the *La Flèche* change from the good productive fowls, which I suppose they are in their own country, to but indifferent layers.

The *Crèveçœur*, when it thrives, is an excellent fowl for the table, being square, plump-made, and large, ready to fatten easily (if in thorough health and good condition), compactly formed, and short in the leg. The hens are said to be good layers; their eggs are very large, and they are not sitters. The chickens come to maturity early, and Mrs. F. Blair says



the pullets often exceed the cockerels in size. They are evidently allied to the Polish, which are nice tame fowls to keep, but delicate in our damp chilly variable climate. For exhibition, the color of cocks and hens should be unvarying black throughout, with metallic luster on the feathers, but to breed them so, requires great care as they are very apt to have a mixture of colored or white feathers. As in black Cochins and some other black fowls, it is easier to breed the pullets quite black than the cockerels. The crest is full, large, and globular, and in front of it is a comb in the form of two well defined pikes, and these horns sometimes grow large and spread into branches. The fowls are bearded, and the legs blue and short.

The **La Fleche** is also a black fowl, with metallic luster, large and plump-made. It is good for the table, but the legs are long and dark—a great objection. The eggs are very large, but the hen does not produce well, and she is a non-sitter. The head is very peculiar, being graced with a comb in the form of upstanding spikes, in front of a dark-crest, a peculiar rising over the nostrils, large white ear-lobes, red face, and long red wattles. The plumage is very close and firm; the tail large. The legs dark-blue or slate.

The **Houdan** is the last of the French fowls which have gained a certain popularity among fanciers. It is compactly made, the body round and well-formed, the legs short, thick, and blue, or slate-colored, and five-toed. It is good for the table.

#### HAMBURGHS.

The Hamburg family is a large one, including two totally distinct races of fowls, the Spangled and the Pencilled—Hamburgs they are both called—but they are about as distinct as Cochins and Dorkins. Both kinds are divided into two—the Golden and the Silver, thus making four distinct classes at our shows.

The **Golden-Spangled Hamburgs**, or Golden Pheasant Fowls, were very generally known by the last name until recent fancy dubbed them Hamburgs.

They are good useful fowls to keep, and excellent layers, and non-sitters. The eggs are not large, but larger than those of the Pencilled Hamburgs. The fowls are pretty hardy, and easy to keep in condition, but the chickens are rather tender. They are nice plump fowls for the table, although small. In breeding them the parents should be exact in the marking and rich in color, the rooster darker than the hen: it is best for maintaining precision in marking and other points, to give the cock very few mates.

It is well to avoid stimulating food, when giving it may induce precocious laying. A young fowl, be it pullet or cockerel, should be well developed in firmness of bone, muscle, size, and furnishing, before it assumes the position of a productive adult, that it may turn out one which will do us good service for the natural term of its life.

All the Hamburgs are inherently fond of liberty; they want a good range, a trifle will not prevent their breaking bounds to obtain it for themselves, and their lightness and agility enable them to fly like sparrows.

**Silver-Spangled Hamburgs** are the same as the Golden, in general properties. If there is any difference between

them, the Silver are the stronger; they are the best layers, and the eggs are rather the larger.

**Golden and Silver Pencilled Hamburgs.**—The Pencilled Hamburgs are so distinct from the Spangled in some important characteristics, that it seems wrong to include both under one general name. They are more fragile in form and constitution, and different in shape and in plumage, although all the Hamburgs agree in comb, and several other points before mentioned. The Pencilled fowls are known under the different names of Bolton Bays and Grays (the gold and silver), Chittiprats, Corals, Creoles, Dutch every-day layers, everlasting layers, and many others.

#### THE POLISH AND THE VARIOUS CLASS.

The Polish fowls are pretty, compactly-made fowls, rather under than over medium size; for the Polish of the present time are decidedly smaller than these fowls used to be from twenty to thirty-five years back. The eggs, too, are smaller. This degeneracy may be the result of in-and-in-breeding, which may also account for their exceeding delicacy of constitution.

Their beauty renders them great favorites; they are mild-tempered, timid birds, loving a genial sunny spot, and much disliking to be handled. They are good layers of white eggs, which are large for the size of the hens, and for the table the flesh is white and tender, but the chickens are small for that purpose. The hens are non-sitters.

All the Polish sub-varieties are decidedly fancy fowls, requiring and repaying great care on the part of the amateur.

**Silver-Spangled Polish.**—The crest of the cock should be white streaked with black; that of the hen white laced with black. The hackle of both cock and hen white streaked with black, and the wings accurately barred and laced. In the cock, the more the remainder of the plumage can be spangled the better, and the tail should be white, with a rich, well defined spangle at the end of each feather. In the hen, the remainder of the plumage should be accurately spangled, and the tail white, each feather spangled with black. The legs are blue, and the head free from comb or gills.

**Golden-Spangled Polish.**—The ground color throughout is a rich golden-brown. The hackle of both cock and hen streaked with black, the wings barred and laced, the breast spangled, and the tails black, so well bronzed with the rich ground color of the plumage as to harmonize with it. If there be a beard, a good mixture of the ground color is better than a prevalence of black. The top-knot, too, should be streaked in the cock and laced in the hen. Black feathers and white in the crest are faults, but the white feathers *will* come in both cocks and hens as they grow old.

The original Spangled Polish fowl appears to have been a bird in character like our Polish, the ground color of the plumage of a rich golden-brown, with spangles of white and black united in each spot, and white legs. These and two other beautiful varieties are entirely or almost lost to us.

#### BANTAMS.

The distinguishing characteristics of the Sebright bantam, besides their exactly-laced plumage, are diminutive beauty,



and jaunty, impudent carriage. Roosters of a year old should not exceed 21 oz. in weight, nor hens 18 oz.; and some advocate much smaller size still. Smallness of size is an important point in all Bantams, so that the smaller they are the better. To gain this point they are generally bred late in the season, sometimes very late, but seldom earlier than July. Many have been so dwarfed as to interfere with their reproductive qualities, and the breeders have had recourse to larger specimens as home stock-birds, reserving the very small ones for exhibition and for show. To breed productive stock-birds the in-breeding, which favors small size, must be avoided.

The proud gait of the Sebright is like that of the fantail pigeon; the head and tail are held erect until they almost touch each other; the wing is not closely packed away, but is allowed to droop with jaunty gallantry; the body is plump, and the breast protuberant.

The head should be small and delicate, with a well-formed, firmly-set-rose-comb, close to the head, exactly in the center, with a well-defined pike, a little turned up at the end. The legs should be blue.

The rooster must have no hackle on neck or saddle, and no sickle feathers in the tail.

The chicken should be bred from mature birds. They must be kept from damp, but in a dry spot they are tolerably hardy. Their diminutive size and compact beauty render them the prettiest among chickens. There is scarcely a prettier sight than a Sebright mother and her little brood. The little ones fledge quickly, and require constant good feeding during the process.

The **Booted Bantam** is probably the earliest type of the Bantam race; it is, at any rate, the one which has been the longest known among us, having been introduced as long back as the beginning of the seventeenth century. It is a small, compactly-made, jaunty little bird, with abundant furnishing in hackle, flowing tail, and heavily-booted legs. The plumage is generally perfectly white, but there are also some of other colors. In the early part of the present century, Booted Bantams were more thought of than any others; afterwards they were almost lost sight of; but within the last very few years they have appeared again, and often win prizes in a Bantam class for other varieties.

**White and Black Bantams** are beautifully diminutive, bold and saucy in gait, plentifully furnished in hackle and tail, and spotlessly white in plumage, or perfectly black, as the case may be. The white and the black have each a distinct class at the shows, where they are always well represented. The white bantam rooster must have a fully sickled tail of snowy whiteness, brilliantly red rose-comb and wattles, and white beak and legs,—the last perfectly free from feathers. The hen must agree. Many may be seen weighing, the rooster not more than 15 ounces, and the hen 12 ounces, and smaller weights are mentioned. The black Bantams are compact in form and bold in carriage. They are hardier than the whites, very prolific, and often very small. The plumage should be unmingled black with metallic luster. Other points are a rose-comb, small but rather wide wattles, and rather short blue or black legs. In both the white and the black the ear-lobes

should be white, but in the black especially; they must be pure in the white, and free from any tinge of red.

**Game Bantams** must be exact Game fowls in miniature.

## TURKEYS AND WATER-FOWL.

### TURKEYS.

When America was discovered, turkeys were found in a domesticated as well as in a wild state, and the French name *Dinde* (D'Inde) seems to indicate that they came from the West Indies, the East Indies possessing no such bird.

Turkeys do not attain full growth and maturity until the moult after they are two years old. The stock-birds should therefore be not less than three years old, for poult bred from young birds are sure to be tender. To obtain fine turkey poults, let the hen sit on the first eggs she lays in the season, as soon as she will, that the brood may have all the best of the year in which to make their growth. Some turkey roosters are very spiteful to their hens, and to the young ones, so that it is necessary to put the nest in a place of safety. The presence of the rooster is not necessary after the early part of the season, as the entire clutch of eggs is said on good authority to be fertilized at once.

The turkey cock should be vigorous and healthy, broad in the chest, clean in the legs, and with well developed wings and tail. His eyes should be bright, and the corunculated skin of the neck full, and rapid in its changes of color. He is in his prime from three years old to seven or more. The year he is appointed as master at home, or the year after, a fine cock poult should be selected and reared to take his place when necessary. From the peculiar property in turkeys of the whole batch of eggs being fertilized at once, one turkey cock would well serve a whole neighborhood; but that he should be a first-class mature bird is all-important.

The hen should, of course, match her lord; she should be plump, lively, and animated, and her plumage should be correct. If she be black, white feathers are a fault. Her eggs will produce the hardiest poults *after* she is three years old.

A number of companions may be allowed one cock in the course of a year, but never let him have more than two mates at the same time.

The hen foretells laying by a peculiar note and strut, and by hunting about for a sly corner to lay in. In the domesticated, as in the wild state, the cock is apt to destroy the eggs, and the hen is commensurately anxious to hide them from danger. She should be watched and humored to the nest prepared for her.

If the turkey hen is well settled to the nest before the eggs are given to her, the poults may be looked for on the twenty-sixth day; but four weeks is the time of incubation usually reckoned on for turkeys' eggs, and some persons say thirty-one days. Whether the sitter is interfered with or not, when she hatches must depend on her disposition.

The hen turkey will sometimes lay and hatch a second time in the season, but late broods require great care.

Even in a wild state the turkey poults are delicate, and unable to endure wet: the young of the domesticated race are



yet more so, and must be kept from wet and cold. The little poults will peck for themselves as soon as nature prompts the necessity: until then leave them with what appears to be their only requirement—their mother's warmth.

At first the little ones may be fed on hard-boiled eggs, chopped fine and mixed with bread-crumbs and herbs finely minced, or on curd and bread-crumbs. The herbs to use with their food are chives, young onion tops, fennel, lettuce, nettles, and parsley. The water should be given in shallow pans, that they may not get the down wet. As they get older they will feed on food made of barleymeal and oatmeal, and on grain. Meal boiled in milk until quite thick is good food.

The little turkey poults want a tolerably free range, and they must be so constantly well fed from the first, as never to lose condition; for if they once get poor they can never be restored.

The most important thing of all is never to let the little turkeys get wet, or even damp. Keep them in in the morning until the dew is off the grass, put them up before the damp of evening, and never let them be out in the rain. Cottagers in the country, who think it worth while to keep in the brood in wet weather, and to drive them in when rain threatens, rear them successfully, as it is generally after a wetting that the little poults go bad.

When the turkeys are finished up with cramming, it may be done by giving about six rolls of barleymeal and sugar before roosting-time every night for a week or ten days. In France, the usual food is meal paste mixed with chopped suet and milk, or with ale and molasses. Whole pepper, garlic, aniseed, and tonic herbs are also given. Whole walnuts given daily, from 4 to 40, are said to fatten well. If turkey chicks look heavy and ruffled, a little crushed malt, or caraway or coriander seed, will do good. Let them be fed very constantly, and never be in want for an hour. If they do not run at large; they must have a little meat, turves of grass, and gravel. Most hens require cooping to prevent their running the chicks too far. The old turkeys are very fond of Indian corn.

#### GEESE.

**Common Goose.**—It is almost superfluous to say that the usual mode of keeping geese is to drive them out to pasture in the morning, and to house them at night. If there be any right of common to which the flock can be turned out, they will almost get their own living, as grass is their main food. Turning their heads sideways, they nip it off quite close, and consume a good quantity. Whether it is worth while to keep geese on land that would feed larger stock, is a question for economists; but they are worth keeping where they can partly live on grass which cannot be turned to better account.

It is well to have a house for the geese and one for the young stock, but any shed will do, and it need not be too closely shut in. Care should be taken that the roof does not let in rain, and that the shelter which the house affords excludes bitter windy draughts upon the geese at night. The floors should be dry, and if litter is used, it must be renewed as often as cleanliness requires. If the geese can have a pond at com-

mand within the day's range, so much the better; but they will do without it.

Geese are essentially vegetable feeders; they will eat any kind of corn, pulse, or greens, such as cabbage, lettuce, mangold, lucern, tares, and now and then sliced carrots and turnips.

The old geese require a little corn twice a day; a mere sprinkle in the morning, if they have the opportunity of doing much for themselves, and a good feed at night. In mild seasons the goose will lay early: she should have a good, large nest, in a secure, quiet corner, and she will cover about fifteen eggs: the time of incubation is thirty days. Give her plenty of food and water, to which to help herself, when she leaves the nest. She is a patient, good sitter, and a good mother.

In choosing stock-birds, select those which are long in the body and small in bone. The pouch sagging down loose behind is generally a mark of age. Allow three geese to a gander; let all be of mature age, and they will all do well up to twenty years old, if not longer.

#### DUCKS.

Ducks are very hardy, and easy to feed, as regards quality of food; for they will eat almost anything with appetite and relish.

The humble accommodation of a mere shed offers quite good housing enough. The roof should be water-tight, and the ground of the shed pretty dry, to render it a good place for the sitters; as, if the nest be very damp, the eggs are apt to break, however quiet the sitter may be.

Four ducks to a drake are better than a larger number. The stock-birds should be long in the frame, fleshy (not fat), and small in bone.

A good-sized duck will cover fourteen eggs well: according to the size of the duck the number allotted her may be from eleven to fifteen. Give her oats and water near her nest, that she may come off and feed when she likes; and a run down to the pond and dip therein will do no harm to her eggs, but rather the contrary, by imparting from the sitter's moist feathers the warm damp which is favorable to incubation. Hens may be set on ducks' eggs, when it is considered that the extra care which can be bestowed on them may realize greater size for exhibition purposes; but ducklings so reared had better not be kept as stock-birds.

For the first few weeks it is better to let the ducklings have no pan of water in which they can immerse themselves, so as to wet the down underneath them.

The bill of fare for young ducks may include cold boiled oatmeal porridge, cooked vegetables, mixed up with barleymeal or sharps, crushed oats thrown into water, and a little milk when convenient; but in giving milk to young things, scouring must always be guarded against.

Ducks, old and young, should have a little litter for a bed—straw, dry fern, pea-haum, rushes, or anything which is dry will do. The eggs do not keep so well as hens' eggs, so they should be set as fresh as possible.

**Aylesbury Ducks** must be very large, perfectly white in plumage, with yellow legs and feet, and flesh-colored bills. Dark spots or streaks on the bills have lost many fine pens



their prizes. Such blemishes may arise from the ducks frequenting peaty land; to get fair unsullied bills is a great trouble to exhibitors. A good pen of three drakes and two ducks will weigh 23 lbs. or 24 lbs., and 26 1-4 lbs. have been reached.

**Rouen Ducks**, in plumage, resemble the wild duck, but they are of splendid size.

The **Buenos Ayres**, or East Indian ducks, like Bantams among fowls, are the dwarfs among ducks, and are bred as small as possible, and shown young, to make the most of this important point—diminutive size. They must be very small, and quite black, with brilliant green metallic luster on the plumage. They have dark legs and bills. They often incline to mate in pairs, so that if only one drake is kept to two or more ducks, many eggs will prove infertile; the eggs are colored, and, of course, small.

The **Musk, Muscovy, or Brazilian Duck** is very distinct. They vary in color, the usual color being a dull black, with white on the under surface, and some other portions of their bodies. A curious red warty cere near the bill characterizes them; and the great difference of size between the drake and the duck is peculiar.

A large black duck, with brilliant luster on the plumage, called the *Cayuga Black duck*, is mentioned. It is a native of America and is said to have been domesticated from some wild stock.

**Call Ducks.**—The beautiful little Call or Decoy ducks are ornamental and very small.

These are the kinds most frequently seen. There are occasionally sent to the shows the *Hook-billed*, the *Penguin*, and the *Top-knotted ducks*.

#### DISEASES.

There is little *economy* in an attempt to doctor sick fowls; as a labor of love and a matter of humanity, the case may be different, and we often like to cure or lessen the sufferings of a favorite.

Warmth, shelter, and safety from the molestation of other fowls is often a main remedial measure. A bask by a kitchen fire, for a few days, a retreat where tyrants cannot hunt or peck the sufferer, and simple or nourishing food, according to whether the patient is suffering from weakness or repletion, is frequently by itself a curative treatment.

If little chickens pine and droop the wings, a pill of Barbadoes aloes, the size of a pea, or a pellet of rue and butter, may do good if the ailment be taken in good time. Insects must always be duly looked after, dislodged with a dusting of flour of sulphur, and guarded against by cleanliness, and a good provision of dust-bath. Most poultry diseases may be traced to the effect of our chilly, damp, and variable climate, so that a warm sheltered locality, and good shelter for young chickens, are all important.

Douglass' mixture is excellent for giving strength and stamina to old fowls, or young. Dissolve together with a little water 1-2 lb. of sulphate of iron, and 1 oz. of diluted sulphuric acid, add spring water enough to make up two gallons, let it stand for a fortnight, mix a teaspoonful of the mixture with a pint of water, and give it to fowls or chickens to drink instead of water.

Decoction of citrate of iron mixed with water in the proportion to give it a very perceptible taste of iron, is also good as a strengthener.

If inflammation in the egg passage be denoted by the production of soft or misshapen eggs, give one grain of calomel, with 1-12th of a grain of tartar emetic. It should be repeated three times in a week at intervals.

If mature fowls appear feverish and drooping, and seem to require a dose of medicine, give one of Plummer's pill, a bit of Barbadoes aloes the size of a large pea, or five grains of jalap in a bolus of barley meal, according to the strength of the dose required. If, however, they are judiciously fed and properly cared for, medical treatment will rarely be required.

