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PART I.

POULTRY KEEPING

CHAPTER I.

GENERAL HINTS.

OUR OBJECT

Having had years of experience with poultry, we find that we can help poultry people to profit and save many of the cares due to either inattention or lack of knowledge on the subject, and while yielding due praise to the authors of poultry books generally, and not desiring to criticise their excellent work, we hope to be pardoned one remark: we find by experience that what is greatly needed among those who keep or intend to keep poultry, is a plain, practical book of ready reference, where the information wanted can be found at once, without wading through page after page of unnecessary matter. It is our purpose, therefore, to do our part in ministering to the wants of poultry keepers by placing

in their hands a working manual of practical information, the use of which will add to the ease and profit of their occupation.

WHY KEEP POULTRY

In the days of our forefathers, the Shanghae, or Cochin China fowl was the acknowledged fancy breed, but today we have breeds of all description and character. Some fabulous prices have been paid in the United States for choice specimens of different breeds. Some of the great figures paid are the sales of Rose Comb Black Minorcas by George H. Northup, of Raceville, New York, he getting \$1,000 for one cock; \$500 for another; and \$200 for a third. He also realized \$200 for a single hen, and sold fifteen other hens at \$100 each. This makes a total of \$3,400 for nineteen fowls.

Then we have Kellerstrass, the famous "Peggy" man. Peggy is a White Orpington, upon which Kellerstrass has placed a value of \$10,000. This, because he has posted that amount for another hen of the same breed that will equal her in points. Kellerstrass sold Madame Paderewski a pen of five White Orpingtons for \$7,500, an average of \$1,500 per fowl.

More big sales could be named, but the above in-

stances are probably the highest figures ever paid in this or any foreign country.

But cases of exorbitant prices are exceptions, and breeding stock is as a rule sold at prices ranging from \$2.00 to \$50.00 per head. Poultry breeding has now settled upon a sound basis, and is becoming more popular and profitable every year. Why you should keep poultry is shown by the millions of dozens of eggs that are imported yearly and the high prices obtained for the eggs. There is no reason why we should not produce eggs sufficient for our own use, and thus save the immense sums we send away to other countries. Hundreds of farmers, who have ample means to provide for a large flock of poultry, would be surprised to find how large a profit could, with a little care, be realized from keeping them. Of course the farmer will understand that it will cost him some time and trouble as well, for he must study the laws of nature with reference to fowls and their wants; but we say confidently that with the same amount of attention, poultry will actually pay him a larger profit than any other feature on his farm. But it is not the farmer only: there are thousands of others, living in locations where they have a little extra space, who could start with a dozen, or even half a dozen fowls, and would soon find the diversion not only interesting

but profitable. Every housekeeper knows the difference between fresh eggs and stale ones, so far as the pleasure of eating them goes; but perhaps she does not know that fresh eggs are far more nutritious than stale ones. This appears in hatching, as chicks from fresh eggs are much stronger and hardier than those from stale ones. Sick folks must have fresh eggs or none. How important then becomes the keeping of poultry, which requires only common sense and good care to be made a perfect success. Location of houses, choice of ground, condition of food and drinking water, are of course all important, and will be referred to in due course.

SPACE AND OUTLAY

A small but complete poultry house can be built in a space eight feet by twelve, and will allow ample room for run of half a dozen fowls. We mention this merely to show that a little family of fowls could be easily and conveniently accommodated by many who now allow the

necessary space to go to waste, and who buy eggs of uncertain condition and chickens of doubtful age, instead of supplying their tables with fresh eggs and tender poultry from their own yards. The outlay for the housing of a few fowls is almost nothing—merely a small amount of timber, and time enough to put it together. We need not dwell on the advantages possessed by a farmer in regard to the keeping of poultry—for no one knows better than the farmer himself what an opportunity it gives him to utilize material and space that would otherwise be actually thrown away. It requires little thought, and less calculation, for him to realize that at a trifling expense he can start a safe venture, which will bring him in many a welcome dollar, and pay for itself many times over. We should advise a beginner to start with a few fowls, and add to them as he becomes more experienced. The expenditure of time and the exercise of patience demanded by any new enterprise will, of course, be required.

LOCATION

The first consideration should be location. Select or prepare a dry surface, not clay, and build the house with its floor a foot or more from the ground, to allow

plenty of free air space underneath. The situation should be light, airy and cheerful, avoiding doors, windows or openings of any sort to the north, northeast or northwest. This is a most important feature. Winds from the directions named chill the fowls, and their nourishment is used up in keeping them warm, especially in the time of cold storms. A southern exposure is, of course, the best one. If practicable, let the northerly walls be of brick; but in any case, let them be wind-proof. If openings are made in the back or side walls, for ventilation during the hot weather, they should be so constructed as to close tightly, to keep out drafts when shut. On the farm, a location near the cowhouse or stable, or against the fireplace of the dwelling, is the best, other things being equal, on account of the warmth thus gained. In building the house there is much to be considered in the way of practical common sense. Nothing complicated or scientific is required; simply a healthy location, that should be dry and well protected from drafts in cold weather. Proper ventilation and cleanliness are also essential to the welfare of the fowls. Therefore the most elaborate houses are not always the most successful. Improper housing is the most frequent cause of disease and of unprofitable poultry keeping. In a cold, damp atmosphere the fowls will neither thrive nor

lay. The results of care in constructing the house are seen in fall and winter. If the house is drafty, the fowls will use up the food they have eaten to keep themselves warm through the cold nights—a thing which a well-built house will prevent.

We have found that from fifteen to twenty-five birds are all that will thrive in one house; so that where more are kept, they should have separate houses and runs. Thick roosts, low down, should always be adopted, as the thin roost, high up, wears out the strength of the fowl before morning in endeavoring to keep its balance. This too, uses up the food supply, which is exhausted in the effort of the bird to make itself comfortable, instead of acting as an egg-producer.

If the house is built double (see cut, page 22), this will allow of two runs, so that the fowls can be penned in one run at a time, and then reversed to the other, thus allowing one side at a time to be purified. While one side is in use, the other can be sown with oats, and the change made when the oats are four or five inches high, making a fine scratching-ground for the birds. A frequent stirring up of the soil, so as to let the sun penetrate it thoroughly, will have more influence on the health of the fowls than might be supposed. The fouling of the run is one of the most frequently neglected features of

the poultry yard. When the house cannot be conveniently built in the manner suggested, the yard should be often and generously strewn with gravel. This will make it easy to clear off and cart away the top soil, and again spread with gravel; whereas, if the birds are simply allowed to run on the hard earth, it soon becomes foul and unwholesome. Sheds for dust baths, and for protection from the direct rays of the sun, as well as from rain and cold winds, should be so constructed in convenient places, and the fowls should, during the day, if space allows, be entirely shut out from the house in which they roost at night. In the construction of sheds, all sides but the southerly should be enclosed, for reasons which are plain to everyone.

In constructing the scratching-shed poultry house, where there is a continuation of two houses, the scratching sheds should be on the outside of each pen instead of in the center, as shown in illustration on pages twenty-two and thirteen, for the reason that these sheds being on either the east or west side protect the roosting pens, thus rendering the latter more warm.

CHAPTER II.

THE HOUSE.

HOW TO BUILD

Generally speaking, poultry houses are built of wood, and if they are double walled on the back and sides, and heavy lining paper placed between the walls, they will be warm enough for any climate. A few houses are built of brick, but there is no special benefit derived by using that material unless the interior is lathed and plastered, making in all an expensive building. Some attention now is given to cement construction, which no doubt can be built for about the price of lumber. The point, however, is to avoid dampness.

The house should be built of such proportions as to comfortably quarter the desired number of birds. Having it larger than necessary is nearly as bad as having it too small. For fifteen to twenty-five head of stock the pens should measure about ten by sixteen feet. This would allow ten by ten feet for the scratching shed, and six by ten feet for the roosting pen. The founda-

tion all around the building should be brick or cement—the latter is the cheapest and equally as effective as the former. The building itself should be constructed of tongued and grooved lumber, so that there will not be a possibility of cracks which cause drafts. The door should be not less than two and a half feet wide, and a window be placed in each roosting pen. The front of the scratching shed should be covered with one-inch wire netting, and during winter a muslin curtain, fastened on a frame hinged to the roof, should be dropped down over the wire to protect the fowls during stormy weather, and a small door or opening for the fowls to go to and from the outside runs. This door or opening should be closed each night to keep out rats, minks, weasels or other enemies. Shingled roofs are probably the most permanent, but in case of using shingles the ceiling of the house should be ceiled with tongue and grooved boards, or during the winter, especially when snow is lying on the roof, the animal heat from the fowls will cause frost and dampness to collect. There are a number of excellent roofing papers now on the market, a two-ply thickness of which will make an excellent roof almost if not quite as durable as shingles. Paper roofs must be laid on an even surface, and never upon shingling lath, and should be painted every few years. A paper roof

will not need the pitch required for a roof that is shingled. On some of the large poultry farms, one-half the window sash is composed of glass, and the other half muslin. The latter allows plenty of fresh air without drafts.

SINGLE SECTION BROODER HOUSE WITH SCRATCHING
SHED AND YARD.

THE FLOOR

On a well known, successful poultry farm the floors are merely the dry earth, which is filled up on the inside of the house a foot above the level of the outside ground. This floor is then heavily covered with straw or leaves to induce scratching. Hens love to wallow in the earth during the winter. The top soil should be cleaned off every spring and fall. Some poultrymen have board floors, others cement, but the majority prefer the dry earth floor, as stated.

KEEPING OUT RATS

A thick layer of rough stones, covered with broken glass under the foundation and floor, is the best defence against rats, which must be kept out, or they will destroy chickens by wholesale. Some add a wire netting outside the house, but this will rust and must be renewed at intervals. It will pay also to keep rat traps about, which should be kept clean by frequent scalding. It is a good plan to have a number of traps of different forms, and use them in rotation, as these pests are very sly and soon learn to keep away from a trap after they find out how it works. If the floor is raised above the ground, as noticed before, you will have little trouble with rats. The moment a rat hole is discovered in the ground around a building, a spade should be run into it and followed up to the hiding places. Nothing so much scares rats as the knowledge that they are being pursued.

HEATING AND VENTILATION

While a warm house is essential to good results, it must at the same time be well ventilated. How to accomplish both is an important consideration. Everyone knows that hens lay less in winter than in summer, for the reason that their natural heat is consumed rapidly

in cold weather, and there is little left to go into eggs or flesh. Some think to counteract this by artificial means, but the fowls must be let out in order to keep them in good health, and the change from an overheated house to the outdoor cold is apt to cause disease. Again, the burning of oil or gas cannot fail to vitiate the air, while steam or hot-water pipes avoid this to some extent, it is difficult to keep an even temperature. The best plan is the one already suggested; of having the house derive its heat from an adjoining building, such as a cow-house, stable or dwelling. If a stove is used at all, it should be where a large number of fowls are kept, and would then be best placed in a middle room, with which the other compartments communicate. If the location and exposure are well chosen, as above suggested, the sun will in most cases give all the additional heat necessary. Good ventilation can be secured by making a roof chamber in the peak, loosely floored, and with traps or slats, or simply bored holes, at the sides.

PLAN FOR VENTILATING.

This will give sufficient draft to carry off the bad air, and in extremely cold weather the outlets can be stopped to any extent desired. There should be no attempt to ventilate from the floor of the house itself, except through the cracks under the door and around the entrance trap; otherwise the house will be robbed of its heat, and the fowls will be inevitably chilled.

CHAPTER III.

FITTINGS, INSIDE AND OUTSIDE.

ROOSTS

Remember what has been said about having the roosts thick and not too far from the ground. They should also be readily removable, so that they can be frequently taken outside and cleaned and sprayed with Pratts Liquid Lice Killer every two weeks. Round or oval-shaped bars, say three inches through, sawn lengthwise, make the best perches. If made flat, the edges must be rounded. Bent iron or wooden U-shaped sockets

should be fastened to the sides of the house to rest the perches on. Beneath the roosts it is well to have a platform, which will catch the droppings, and prevent the floor from becoming filthy. This should be removed and cleaned daily. Roosts can also be made of two by three-inch scantling, planed, the two-inch side resting on cross pieces. The fowls roosting on the two-inch side have plenty of space to spread their feet, and besides the scantling will support more weight than when the three-inch side is used.

NESTS

Three important points are to be kept in mind in providing nests. They must be sufficient in number, roomy, and readily cleaned. Have not less than four nests for every dozen hens, at least a foot square, and up to sixteen inches for large breeds. Let them be strong, but as simple in construction as possible, without permanent floors or corners for the dirt or vermin to collect. Handy nests can be made by building a low rack, and laying on it a row of nail kegs, facing the open ends to the wall. In the bottom cut a small hole for the purpose of gathering the eggs. To prevent egg eating, nests should not be low enough for fowls to reach them from floor; nor should they be so high as to make them hard

to get into. Many poultry men now use trap nests, to tell which hens are laying; the non-paying hens can then be separated, and killed for market. In some poultry houses nests are placed under roosting platform. There is, however, the objection that the hens are apt to scratch litter in them, and it gives rats and mice a chance to make hiding places underneath and back of them.

BOX NESTS.

KEG NESTS.

Never nail boxes on the side of buildings for nests so that the hens must fly up to them. Nests should be movable, so they can several times a year be taken outdoors and cleaned.

THE RUN

Give the fowls all the range you can spare. The less room you have the more particular you must be about cleanliness, although this is important under all circumstances. With a light, dry top soil, or even sifted ashes, constantly raked over and often renewed, fowls

can be kept healthy even in a covered run, so that those who have but little space can make up in attention what they lack in facilities. A grass run of half an acre will do for fifty light breed fowls, but would be hardly enough for the heavy breeds. Where more than this number are kept, and there are several houses, a gravel run for each house, and a large field of grass where the birds can go by turns, economizes the space. Fencing, when required, is easily made of wire netting, which is cheap and durable, especially when galvanized. The lighter the breed, the higher the fence, is a simple rule; running from a yard high for Cochins or Brahmas to eight feet for Game or Bantams. Hamburgs will mount almost any height of fence, and would be better clipped. This can best be done by opening one wing and cutting the first, or flight feathers, of which there are ten as a rule. This will prevent flying, and is not unsightly, as when the outer wings are mutilated.

Where fowls have a whole farm to range in, there ought to be no trouble in keeping them healthy. Where the run is limited, but still large enough to allow it, the planting of fruit trees, or even of gooseberry or raspberry bushes, will afford an additional protection from the wind, besides inducing a supply of insects such as the birds enjoy for food.

We have already mentioned a house with a double run as being desirable where there is not room enough for a very large run. We show here a cut of such a house. It will be seen that the accommodations are complete, no matter which of the runs is in use, the other being shut off simply by closing the approaches to it from the house. By building both runs on the same side of the house, the cost of one fence is saved.

TWO-SECTION HOUSE WITH SCRATCHING SHEDS AND YARDS.

CHAPTER IV.

SELECTING STOCK.

EGG STOCK

Selecting stock is a matter of great importance, and depends upon the plan you have in view. If your principle object is to supply eggs, and your place is too small to raise chickens, you begin by getting in the spring as many hens as your house will carry comfortably. They should be no older than a year. It is not worth while to buy a cock. The hens will lay almost as well without him, and you save in food and space. If you have bought good, healthy hens, they will begin laying at once, and keep at it until fall, if they are rightly fed and properly housed. The best plan is to buy breeds that do not sit; but if a hen insists upon sitting she can be cured by keeping her a few days in a coop on hard

ground, with water, but little food, sheltered of course from the driect sun in the hot weather. It is true that a Cochin cannot be brought to her senses in this way; but it is better to do without Cochins when eggs are the only object. Other breeds, treated as well, will usually lay again in a fortnight.

Buy only young birds, and healthy ones. It is only by practice that one learns to detect age in a fowl, but there are some signs that may be relied on in a general way. A young hen is usually trim and graceful, her legs are smooth and delicate, her comb and wattles soft and fresh looking. When she grows older she takes on flesh, her legs look hard and horny, and her comb and wattles dry and tough. The shrewdest of beginners may be deceived in spite of every care; he must learn by experience.

When the hens stop laying in the fall, do not let them get out of condition, but kill or sell them, and buy pullets hatched in the spring. These will have moulted already, and will begin laying in October or November, and produce eggs pretty regularly until the winter is over. They can then be killed or disposed of and replaced; or the best of them may be kept until fall, when none but extra good layers will be worth keeping over another winter.

CHICK STOCK

If chicken raising is to be gone into as well as the producing of eggs, there must, in the first place, be plenty of room. It is a mistake to try to raise chickens in small quarters, where profit is the object. Of course, if it is a mere matter of diversion, it can be done even in a limited space.

With room enough, then Plymouth Rocks, Wyandottes, Rhode Island Reds, Brahmas or Langshans will be best chosen for the purpose of raising chickens. They are all good layers, without being too much bent on sitting, like Cochins. The last may be kept to serve as brood hens, but they are not to be set on their own eggs, if the chickens are for market. It is a fact, though, that a Cochin hen, crossed with a Dorking, Crevecoeur or Houdan cock, will produce a large and fairly good table fowl; nor are young Cochins, killed under nine months, at all to be despised on the home table.

Probably the finest and hardiest of table fowls is the Houdan. They do best on the farm, where they have ample range. They lay well and grow quickly, and their flesh is as fine as that of the Dorking, which has to be so carefully reared that it is hardly to be recommended, although its flesh is acknowledged to be equal to almost anything else that can be put on the table.

Let it be remembered that, no matter what breed is chosen, spring birds must replace, or at least be added to, the stock every fall. This is the only way to have eggs in the winter.

SKELETON OF CHICKEN.

CHAPTER V.

FEEDING AND MANAGEMEN

FLESH OR EGGS

This chapter will treat only of the feeding and management of adult fowls. Chicks will be given a separate chapter. Feeding has two objects: One is to produce flesh; the other, to produce eggs. If the fowls are intended for the market, the quantity and quality of the flesh is of great importance. If they are wanted for laying only, too much flesh is a fault—for fat hens will not lay, and a laying hen should never be so fat as to prevent her gizzard from being felt. A fat male bird, too, is lazy and unhealthy. On the other hand, it will not do to starve the fowls. They must have enough, or they will be good for nothing. In this, as in all other matters, the middle course is the safe one—neither stint nor overfeed.

HOW TO FEED

It is a good rule to give the fowls as much as they will scramble for, and then stop. If they are not eager for more, they do not need more, and the surplus is worse than wasted. Two meals a day are enough where there is a run sufficiently large to allow the birds to forage for themselves. One of these should be given early in the morning, and the other just before roosting time in the evening. In winter, or where the run is limited, they ought to have three meals, but the midday meal should be a light one. The first feeding ought to be of soft food, so as to get promptly into the system, and not merely lodge in the crop, for the birds have had a long fast since supper. But in the evening grain is best, for it has all night to digest, and is more staying, which is especially important in the cold season.

All grain food should be scattered among litter, such as hay, straw or leaves, so that the fowls will be compelled to scratch for what they get. This gives exercise, keeps the blood in good condition, warms the body, and greatly assists in digesting the food. Just how much to feed a fowl daily is hard to determine, but ordinarily an iron spoonful (equal to half a handful) of mash in the morning is sufficient for every two fowls in the pen, and a full handful of grain at night, scattered among

litter, for each fowl in the pen. Where a noon meal is given, a half-handful of grain scattered among litter for every fowl is sufficient.

Of late years considerable attention has been called to dry feeding—that is, placing the ground grain in a hopper so the fowls can help themselves at will. This grain is not moistened at all. It is claimed on the one side that dry mash feeding keeps the fowls in better condition, they do not suffer from bowel troubles and do not overfatten. On the other hand, it is charged that this system is too expensive on account of the waste, the fowls throwing out a lot of the mash that does not suit their fancy, and also that the hens prefer the mash slightly moistened and will eat it more readily.

A very good mash for fowls is composed of two parts, by weight, of bran, one part each of middlings, ground oats, cornmeal and beef scraps, five per cent of linseed meal, and Pratts Poultry Regulator in the proper quantity, all the ingredients well mixed.

CHANGE OF FOOD

Fowls, like men, need variety. In winter, food that heats the blood is entirely proper; in summer it should be avoided. Middlings in summer may be replaced in part by cornmeal in winter; but too much cornmeal re-

sults in unhealthy fattening, and it ought always to be mixed with wheat middlings, not given pure. It is safer to give fattening food to the smaller and lighter breeds than to the larger and heavier. Avoid too much potato; it is starchy and fattening. Soft food should always be fed in clean troughs, and must not be sloppy, but crumbly. If it is too sticky, it will cling to the birds' bills, and fret them. Remove whatever they leave at once. Scald troughs at least once a week.

DIFFERENT STYLES OF FEED TRAYS.

GRAIN

The three great poultry grains are wheat, oats, and corn, and their relation in regards to material for making eggs stands about in the order named. Neither grain should be fed exclusively, and a proper feeding is a mixture—that is, one part wheat, one part oats, and one

part corn, by measure. Wheat and oats are nitrogenous foods and corn is carbonaceous. A ration containing two-thirds nitrogenous and one-third carbonaceous material. is properly balanced.

Barley is a good food, and can be given as a variety, but hens do not take kindly to it as they do wheat or oats. Buckwheat has some very good qualities, but it is very fattening and therefore should be used sparingly. As a rule, very little barley and buckwheat are fed by our American poultrymen. Feed only good, sound grain, and never any poor, shriveled, burnt, musty or mouldy grains, as such cause sickness and loss.

ANIMAL FOOD

Where the fowls are but few in number, the scraps from the family table will be all they will need in the way of meat; or, if they have a wide range, they will supply themselves. With a large number of fowls, and a comparatively small run, they should have a little liver mixed in their food every third day or so. Boil the liver, chop it fine, and mix it with the soft food, using the broth instead of water to mix with. Be careful; too much meat charges the quills with blood, and causes the fowls to pluck each other. Fresh chandler's scraps, clams and fish may also be given, and will be eagerly eaten. Clams and

fish, however, should not be fed to hens that are laying, for the reason that such food (like onions and garlic) will taint the flavor of the egg.

The most valuable machine around a poultry plant is a good bone cutter. Fresh cut bones, given twice a week in summer and three times a week in winter, will keep the fowls healthy and add greatly to the egg yield. One or two ounces to a fowl is sufficient. Feed in troughs at the noon hour.

VEGETABLE FOOD

The fowls cannot be kept healthy without a daily and ample feeding of fresh vegetable food. The laying down of the runs in grass, where there is plenty of room, will supply the best green food. If this cannot be done for want of space, they must have green food thrown to them. Cabbage leaves may be minced up and mixed with the soft food, or turnips may be halved or chopped, and put in the shed. Better than either, cut a large sod of turf and throw it into the run. Without green food the fowls will go off in looks and condition, and stop laying. In winter, boiled potatoes and raw cabbage make a desirable addition to the food.

Clover, cut in small pieces, and either fed in the soft food at the morning meal, or soaked and given at noon, is the best green food known for poultry, aiding in the development of both the egg and shell.

Fowls will eat weeds of almost all descriptions. On one successful farm a lot of weeds are thrown into the pens each night so the fowls will have green stuff the first thing in the morning. It is a fact that they are more greedy for greens in the morning than they are at any other part of the day.

DEVELOPING PULLETS

Those who are raising pullets for layers should carefully distinguish between the food that is necessary for making cockerels fit for market and that which will develop the laying pullets. A very large percentage of layers are both temporarily and permanently injured in ability to produce eggs by the improper course of feeding which many poultry keepers employ. We rarely see large quantities of corn or cornmeal given to colts or calves to assist in bringing them to maturity. Oats, bran, clover and Pratts Poultry Regulator are best for this purpose. When food is given in excess, not only is the food wasted, but the digestive apparatus is weakened; when an al-

most exclusive diet of corn is fed, the growing chick must eat excessive quantities of it to get enough of the small percentage of muscle-forming material which it contains. Growing young fowls do not readily fatten; but as the pullets become somewhat matured, there is a tendency to take on internal fat, which can be only a hindrance to egg production. Corn should be fed sparingly in the poultry yard, both in summer and winter.

The growing pullet should be fed solely with a view to the development of her frame and egg-producing organs, and for this purpose the same food that is best for laying hens is the best for her, since growth is regarded in both cases—in the one the growth of the egg, and in the other of bone and tissue. The chicks and laying stock can thus be fed with the same ration, which will prove a matter of economy in labor. When the cockerels become troublesome to the pullets they can be separated and fed separately upon the same food, or upon a diet composed more largely of cornmeal, if it is desired to fatten them.

There is nothing better for growth and perfect development than milk, oatmeal, chopped clover, bran and Pratts Poultry Regulator. Every element required is contained in these, and in such proportions that the digestive organs will not be overtaxed by needless effort

to secure enough of what is needed. It is preferable to feed the milk in the form of sour curd, taking care, of course, that it is not kept too long after becoming sour. In this form it is highly relished by fowls, and is assimilated with no risk of bowel trouble. It is best to grind the oats, as they can then be digested with less tax upon the bird. The clover is best cut fine with a clover cutter, or by running it several times through an ordinary hay cutter, then mixed with an equal bulk of oatmeal and bran. This should be thoroughly moistened with boiling water, and allowed to stand during the day, or over night, if possible, as it will then be so softened as to be readily digested. The clover may be cut and used in its green state, or cut when in blossom and cured out of the sun, for use in winter. It is one of the best foods for growth, but on account of its bulky character must be fed in connection with more concentrated foods of a similar nature.

In addition to those foods, an occasional ration of cooked vegetables of various kinds will be beneficial. If the pullets are confined in yards, a little ground meat or lean scraps from the butcher's shop, boiled and mixed with their soft food, should be given them.

A pointer worth remembering is that exercise is one of the most important requisites for developing pullets. The floor of their house should be heavily littered and all

the grain thrown among it. Make the pullets scratch; it will not only grow them faster, but it will keep them in good health, and start them at laying earlier in life than when they are not put down to hard work.

WATER

At least once a day, and the oftener the better, the drinking water must be renewed. Some device that will keep the water pure and cool and the vessel clean is essential. Many such are easily to be had, but a vessel that can be taken apart easily, and cleaned thoroughly, is the best. The cut shows a practical water fountain that meets these requirements.

WATER FOUNTAIN
OPEN.

WATER FOUNTAIN
CLOSED.

STONEWARE
FOUNTAIN.

Where pans are used, they must be emptied and refilled very often, and so placed that they are not likely to have dirt scratched into them by the birds. Never leave your fowls without water, except on winter nights, when it may be best to have the vessels empty, to avoid

freezing. Ice or snow in the winter will take the flesh off the fowls inevitably.

A piece of rusty iron placed in the drinking water affords an iron tonic especially valuable during the Spring, Summer and Autumn.

LIME AND GRIT

Lime in some form is indispensable for the formation of egg shells, and should be within the reach of fowls at all times. Lime from an old ceiling or bricklayers' rubbish is suitable. Egg shells are also excellent, but should not be given without first being finely broken, or hens may thereby be taught to eat their own eggs. Oyster shells are also recommended. Lime water is the most effectual remedy for hens laying soft-shell eggs; a few teaspoonfuls to a pint of water is sufficient. Egg shells, broken finely and mixed with the meal, are also useful. Hens in their natural state necessarily pick up, with their food, a large amount of shell-forming material, as well as gravel; but when fed without these being added, and left to their own inclination in picking them

up, they, no doubt, obtain a much smaller proportion of these necessary adjuncts; we should therefore endeavor to imitate nature by adding these to their food.

Good sharp grit, such as crushed flint or granite crystal, is absolutely necessary to the health of your fowls, both young and old, and it should always be kept within reach.

MANURE

Cleanliness is only to be had by collecting the droppings daily. The best plan is to have a wide board, so fastened that it can be easily removed, under the roosts. This can be cleaned daily and the droppings collected in a box kept for that purpose. Mixed with soot, fine ashes or dry dirt, they make a strong manure, excellent on cabbage or strawberry beds, and in fact anywhere, diluting when necessary. Gardeners know its value.

CARE OF NESTS

The straw in the nests should be softened by breaking and beating before it is put in—and it must be changed often, so as not to get foul—otherwise the birds will lay outside rather than use the nests. Excelsior is frequently used, but most poultrymen prefer good dry grass. The nests should be frequently dusted with Pratts Powdered Lice Killer.

GATHERING THE EGGS

Eggs should be gathered at regular times, say twice a day. Trap nests will enable the gatherer to know the egg of every hen. This is important when chickens are to be raised, as it is possible thus to be sure of the character of the brood by selecting eggs of known parentage.

FEATHERS A PROFIT

With a large stock of fowls, the feathers can be made an item of profit. Mix with the small feathers the plumage stripped from the quills of the larger ones, and place them loosely in paper bags. Hang them up in a warm place to dry, and after a few days bake them several times for about half an hour in a slow oven, hanging them up again for two or three days between the bakings. Thorough drying and baking makes the feathers crisp, and avoids the danger of offensiveness.

CHAPTER VI.

HATCHING.

SELECTING EGGS

To avoid poor results in hatching, the eggs must be selected carefully. They must come from strong and healthy birds, and give promise of fertility. To get eggs from a place where there is only one cock to more than six or eight hens, is to invite failure in hatching, and the same is true where the cock is poor spirited and underfed. Select only fresh eggs—for stale ones, if they hatch at all, will produce weak chicks, and take longer in hatching. In getting eggs ready to set, from your own stock, write on each with a pencil the date of its laying, and keep it in a rack or in bran, butt downwards, where it cannot be shaken or jolted. Some pretend that the sex of the chick can be told from the looks of the egg, but it cannot be done; nor can you be certain that an egg is fertile until it has been sat on for a short time at least.

Eggs that should not be used for hatching are extra large ones, double-yolked, very small, with ridges or humps, out of shape, or with thin shells.

SITTING HENS

Probably the best setting hens, and the most careful and faithful mothers, are of the American class—the Plymouth Rock, Wyandottes and Rhode Island Reds, with some of the foreign breeds. The Brahmas and the Cochins are also good, but being large and clumsy are very apt to break eggs in the nest or trample upon the young after being hatched.

Never set hens in the regular laying house, for the main reason that to do so is to introduce vermin. A setting hen is a regular louse factory.

During incubation, the only food the hen needs is whole corn and grit—the former being slow to digest keeps up the animal heat in the body of the hen, so necessary in hatching the eggs, and the latter cuts the grain making it more digestible. The importance of grit cannot be too strongly impressed upon the mind of the poultryman, and it also must not be forgotten that grit is of very little use unless it is hard and sharp. Therefore pebbles or gravel can hardly be called good grit since they generally are round and smooth, having no sharp edges with which to cut the grain.

The hen is inactive while she is hatching, and, naturally, the grain does not so readily digest as is the case when she is about taking exercise. Therefore, absence

of grit is very apt to produce indigestion in the sitting hen. Fresh water must be supplied daily, and always kept within reach of the hen so she can help herself at will. The corn and grit, too, must be constantly before her.

Before the hen is set, she should be liberally dusted with Pratts Powdered Lice Killer, and the nest also dusted with it the first and second week, but it is best not to use insect powder in the nest during the last week of the hatch. Should an egg be broken in the nest, wash the remaining eggs with lukewarm water, and if any part of the nest has become soiled, it should at once be replaced with clean material.

THE NEST FOR SETTING

It has often been noted that when the hen steals her nest, she invariably selects a rather moist, cool spot, and, as a rule, the nest is made on the ground. The result is the hen as a general thing comes off with a good brood.

Following up the teaching of the hen in this particular, we have found that the best nest for a setting hen is a barrel laid on its side, in some shady spot outdoors. Enough ground is excavated to lay the barrel in so that it will remain firm, and the dirt placed inside upon which to build the nest. Then hollow out a space suffi-

ciently large, and place the nesting material in it. The barrel is covered with heavy roofing paper to make it waterproof.

In front of the nest a lath run is made (A-shaped), in which the feed and water is placed. The hen is allowed to get on and off her nest at will.

It is a mistake to set hens in boxes, shutting them in so secure that the attendant must take them off and on the nest. No one is so wise that he knows when a hen should be removed and when she should be returned. Leave that all to the hen, and the eggs will hatch better and the chicks will be stronger.

After the nest is made, place in it a china nest egg. Then, at night, get the broody hen and carry her to the nest, carefully setting her on the nest egg, and close up the front of the barrel with a board covering. The next morning take this away and allow the hen her freedom in the run if she wants it. After setting a day or two on the china egg, by which time she will become reconciled to her new surroundings, the setting of eggs can be given her.

The day the hen starts hatching, close up the nest so she will be in darkness, and do not disturb her for twenty-four hours, by which time she will have completed her hatch and the chicks will be dry and strong and can

be removed. Never remove chicks while the hatch is going on, as by so doing animal heat is removed and the hatch is apt to be crippled. Do not bother the hen until she has completed her work. Do not feed nor water the hen while she is finishing her hatch, for the more quiet she remains the better will the results be, and, besides, it will do the hen no harm to fast for twenty-four hours.

HOW TO SET EGGS

Generally speaking, thirteen eggs are counted as a setting, but some of the poultry breeders send out fifteen. For early hatching, it is not advisable to give a hen more than eleven eggs, but after the weather becomes settled, from thirteen to fifteen eggs are about right, but it is never advisable to give a hen more than fifteen eggs, no matter how big the hen may be.

Always set a hen at night, as she is not then so likely to become scared. The eggs should be taken in the hand, two at a time, and gently pushed under the hen. As she feels the presence of the eggs the hen will shuffle her body and show thankfulness.

It is a good idea to mark the eggs with ink, so that in case the hen lays an egg or two (which often occurs when the hen has not become thoroughly broody) the newly-laid eggs can be taken out. Pencil marks on eggs

easily rub off when they come in contact with the oily substance of the feathers of the hen.

WHEN BUYING EGGS

Poor hatches are often blamed on the eggs purchased, when other conditions are really at fault. On receiving eggs from a distance, at once unpack the basket or box, and lay the eggs on their sides, so that the yolks may spread and rest. When eggs are shipped they are set on their ends, and the yolk settles to one point, where it remains safe from breakage caused by being jarred during travel. Naturally, the yolk in this position becomes more or less cramped, and if the eggs are at once placed under a hen or in an incubator, the temperature will be too great for the condition of the yolk, and the result usually is weak chicks or chicks dead in the shell.

Never set a wild, scarey hen, especially on valuable eggs, as in her excitement she may break them and spoil the hatch.

Some hens have too much heat in their bodies for a good, clean hatch, and others have insufficient heat.

Never expect as good a hatch from eggs received at a distance as from those fresh from your own yards, as they are often considerably jarred while in transit, which has a strong tendency to weaken the germ.

If results are not what were expected, don't rush an angry letter to the breeder, denouncing him and then expect satisfaction. State results in a polite way, and in nine cases out of ten, the breeder will meet the complaint at least half way.

TESTING SETTING EGGS

Egg testers are cheap and easily obtained. The eggs should be tested on the seventh day. When held towards the light in the tester, fertile eggs will show a dark life-spot in the center, shading off gradually toward the edges. Barren eggs will show perfectly clear, and should be removed. They will not prove to have been spoiled by being sat on, but can be used for cooking or feeding chickens. By taking out the barren eggs, and doubling up the live eggs in two nests under one hen, a new lot may be set under the other hen. In testing eggs at night, they must not be held too close to the flame, or the chicks may be destroyed by excessive heat.

It is always best to set two or three hens at one time. Then on the seventh day, the eggs can be tested and the fertile ones given to one hen (or two as the case may be), and the remaining hen set with the new eggs. This will be getting more chicks in practically the same time, and there will not necessarily be small families.

MODERN EGG TESTER. FERTILE EGG.

BARREN EGG.

HOME-MADE TESTER.

SECOND OR WATER TEST

On the nineteenth day the water test may be applied. Put the eggs one by one in a bucket about two thirds full of water heated to about 105 degrees, or say as hot as the hand will comfortably bear. Spoiled eggs will sink, and should be thrown away. Live eggs will float, and in a little while will "bob" up and down, as if the chicks were trying to jump out of the water. The advantages of this test are not only that it enables you to make room in the nest by taking away the dead eggs, but it softens the shells of the live ones, and makes it easier for the chicks to pick their way out. It is not essential, however, if you have selected fresh eggs and kept them from getting too dry.

HATCHING

Chickens hatch as a rule in twenty-one days. There are one or two active breeds that break out a day sooner.

When perfectly fresh eggs have been set, some of them will perhaps hatch on the twentieth day, especially after the water test. When a chick is unable to free itself, it is usually because it is weak, the reason probably being that the egg was not fresh when it was set. In such cases do not break the shell, but put the egg in a bowl of warm water for a minute or two, being careful not to let any water get in, if the shell is at all chipped. When more than one hen is sitting, the one that has hatched the most of her brood can be left with her chicks, and the belated eggs can be put under the other hen.

CHAPTER VII.

INCUBATORS AND BROODERS.

ARTIFICIAL HATCHING

is nothing new, having been practiced in Egypt and other eastern countries for centuries. In warm, dry countries, it is not so much of a problem as in America, with its uncertain climate; but the experimental stage is now past, and with proper care hatching "by hand" is an established fact. Generally speaking, the simpler the machinery the greater is the relative success. Intricate and expensive incubators are not desirable, because of the absolute necessity of constant attention to numberless details. It is not our purpose to grind anybody's axe, hence we will not do any more than give a general description of a simple form of incubator, and make a few suggestions as to the running of it. So many hatchers are on the market that the choice among them must be a matter of individual preference, price and ease of management being duly considered.

HATCHERS

A practical hatcher is one that perfectly regulates the application of heat, air and moisture; that can be relied upon to do its work when attended to at regular periods; that can be left alone over night without fear of overheating or cooling off the eggs; that will hatch out healthy chickens; and that any one with common sense and average judgment can learn how to operate. Ten dollars will buy such a hatcher, large enough to carry a hundred eggs; and for a little more than twice the money one can be had which will carry three hundred.

The most approved incubators apply the heat from the top entirely, and a uniform temperature is secured by the use of a metal thermostat of simple construction, which automatically works a valve and keeps constant any degree of heat desired. The source of the heat is a lamp, burning in a tube; and ventilation is secured by a second tube outside the lamp-tube, conducting the heated air over the moisture pans placed in the top of the egg chamber. The moist, warm current of air then descends among the eggs, escaping through apertures in the front of the hatcher, which are fitted with slides so as to regulate the outlet thus controlling the amount of moisture. Egg-turning trays and testers are furnished by the maker of

the incubator. When convenient, natural or manufactured gas can be employed for heating instead of oil.

In recent incubators the egg chamber is made deep, so that the chicks when hatched drop into a nursery below, and the doors are not opened until the hatch is over. For practical purposes, it is desirable to have more than one hatcher going at once, so that the live eggs after the first test can all go into one, and a new lot of eggs be started in another.

The points have all been so thoroughly covered by the manufacturers, that with a good incubator, all that is necessary is to faithfully follow the maker's instructions. Carelessness or inattention will necessarily result in disappointment.

HOT-AIR INCUBATOR.

FOUR-SECTION HOT-WATER PIPE IN-DOOR BROODER.

ARTIFICIAL BROODERS

Nine dollars will buy an in-door brooder large enough to go with a small incubator, and for the same price a sectional brooder is sold—five dollars extra being charged for each additional three-foot section. This brooder is also heated by a large lamp, and the heat is regulated automatically. When the poultry business is done on a large scale a hot-water outfit is wanted, and these are furnished with an elaborate system of piping; but to begin with the small brooders are sufficient, and can be used afterwards as nurseries when the business has outgrown their use exclusively. We show a cut of one of these small brooders and on the next page one of an out-door brooder, in which the heat is supplied by a lamp, and kept constant by the use of hot water. It is set on runners, and can be moved about like a shed. It will accommodate from 100 to 150 chicks, and it is claimed

that a pint of oil will run for twenty-four hours in the coldest weather.

It would be tiresome to the reader, as well as useless, to go into further details on this subject, as a postal card sent to any manufacturer will bring you a catalogue covering more information than you can digest. We shall, however, say a few words as to the operating.

HOT-WATER PIPE OUT-DOOR BROODER.

OUTSIDE VIEW OF HOME-MADE BROODER.
INSIDE CONSTRUCTION OF HOME-MADE BROODER.

HOME-MADE BROODER

For the convenience of those who do not desire to spend the money for a manufactured brooder, we show cuts of a cheap home-made brooder, which any one can make at a trifling cost. For a hundred chicks, a base measurement of two feet by four will be sufficient; for two hundred chicks, three feet by six is recommended. Two dollars and a half will buy the material.

The upper illustration shows the outside, and is so plain that very little explanation is needed. Buy your glass frames first, and make brooder to fit frames. Window panes should be 8 by 10 inches. Entrance and lamp hole should not be closed, as the lamp must have air. The joint should be a tight one (dovetail preferred) as a draught would result seriously. The lower illustration is a cross section, and is thus described: Heat is supplied by a 2-in. wick lamp with flat bottom L, over which is suspended an inverted box with a galvanized sheet iron bottom A, and having in its sides ventilating or gas-holes G G. An inch above the sheet iron is a platform C, on which the chicks are placed; the space between forming a hot-air chamber B 2 in. high. Fresh air is supplied by a shaft H, which can be made from 1-in. speaking tube, and from the shaft passes into the chamber B, where it becomes heated, and thence rises through a warm-air

pipe F 1 in. in diameter into the brooder pen P P. Here it is partially confined by a cover D, adjustable in height according to the size of the chicks, along the edge of which is fastened a woolen curtain E, notched so as to let the chicks run in and out. The warm air circulates through the brooding pen thus formed, and finds outlet through ventilators V V V in the roof of M M. The platform C is hinged at the point T, so that the slope R can be raised or lowered at will by the cord N. It is supported when raised by the spring S. It is important to have the slope inside rather than outside the brooder door. When inside, the chicks are invited by the open door, and when in they usually find their way up the slope to the pen; but if the slope is outside the door they may fail to find the entrance, and be chilled before they can do so. The raising of the slope makes a double floor space and gives plenty of room for the chicks inside when the weather is too bad to let them go out.

This form of brooder gives a constant circulation of warm, pure air; dries all droppings and renders them inoffensive; avoids all danger of crushing or crowding, and is in every way reliable.

THE FIRELESS BROODER

One of the largest poultry farms in the country has recently adopted the Fireless Brooder system, submitting the youngsters to the heating method for the first two or three weeks of their life, and then placing them in fireless brooders. It is claimed that the new system grows more rugged chicks, and there are less cases of bowel complaints and leg weakness. Fireless brooders are, practically, nothing more than a common box in which is placed a bed of cut hay on which the chicks rest at night, while a cotton batten or woolen covering comes down softly on their bodies. This retains animal heat and the chicks are snug.

RUNNING THE INCUBATOR

The same rules that we have given in Chapter VI apply here. In artificial hatching omit the water test. The cellar of a dwelling is a first-rate place to set an incubator, on account of the uniformity of temperature. Keep it out of draughts.

RUNNING THE ARTIFICIAL BROODER

The brooder comes in play say twelve hours after hatching. Cleanliness is the watchword if you would avoid vermin. Do not keep the chicks too closely con-

fined. In cold weather set the brooder on earth, or on a sanded floor, in a close room, or a shed with plenty of light and warm exposure. When frost is out of the ground it can go out-of-doors, but there should be a wire run around it. Warmth in the brooder must be seen to, especially at night; but after the brood is a fortnight old there will be no necessity to heat in the daytime, when the weather is bright.

Justice to the maker of any machine requires that his rules should be followed, and as full instructions always accompany the brooder, no difficulty should be experienced if the directions are studied and kept in mind.

CHAPTER VIII.

REARING CHICKENS.

FIRST CARE OF LITTLE CHICKS

Chickens need no food for twelve hours after they are hatched, and it will not hurt them to wait twenty-

four hours. If the eggs were set in the evening, they are likely to hatch in the afternoon or evening. Before closing up for the night, let the brood be examined, all broken shells removed from the nest, and the hen be fed and watered. Then shut her in so that she cannot leave her nest. In the morning the chicks will be strong, lively and hungry. Give them their first meal in the nest, and make it of corn bread, made of corn meal and Pratts Poultry Regulator—two ounces of the Poultry Regulator with every pound of meal; mix with sour milk if convenient. The bread should be crumbled fine before feeding. Young chicks should never be fed on raw dough. It sours on the stomach, and causes many of the complaints to which they are liable. Let the hen have some of the bread crumbs, as well as all the corn she will take; also, plenty of water for the chicks. Milk is also very grateful.

Do not try to improve on nature by trying to remove the little hard or horny scale from the beak of the chick, and do not force its appetite by poking food or pepper-corns down its throat. Let it learn to eat and drink naturally.

Pans or dishes for milk or drinking water should be very shallow, or the chicks may drown themselves. The best plan for water is to use a fountain giving a

constant supply, but preventing the chickens from stepping into the water. In fine, warm weather, the brood may be moved out-of-doors as soon as fed. In cold or wet weather they should be coddled by the hen on the nest for a day longer, and when removed it should be to a dry and sheltered place. One great trouble with the little fellows is the "head lice," with which they are very apt to be more or less infested—not because the lice are so difficult to get rid of, but because they are so often neglected, probably on account of not knowing their presence.

A good reliable remedy is Pratts Head Lice Ointment. It is safe and sure.

It is always well to make a thorough examination of the head and throat of every chick about ten days after the hatch, and if any of them are found to be so infested, lose no time in quickly applying Pratts Head Lice Ointment. Repeat every week. This simple treatment will surely put an end to the lice.

BARREL COOP.

COOPS FOR LITTLE CHICKS

A cheap and good chicken coop can be made by heading up a flour barrel and sawing it in two across the middle. Either half will serve for a coop by covering the open part with slats. A little skill will make, or small amount of money will buy, a better coop. The main things to look at are: that the coop should be dry, easily ventilated but not draughty, and readily movable. The slats should be wide enough apart to let the chicks

COOP WITH OPEN SHED.

through, but not the hen, and there should be a shutter that can be put on at night. Coops must not be put too close together, nor too near to the other fowls. Wire runs for each coop are desirable to keep the broods from mixing. Wherever the coop is put, it should be on dry, loose earth, and be frequently removed to renew the same and prevent fouling; or the coop itself may be moved bodily every few days to another place. A very

handsome coop is one made in two compartments, one with a closed front and the other with bars (page 61). A bar partition separates the compartments, and one bar in each set slides up and down so as to make a door. Each half is about two and a half feet square. The top is solid, with a pane of glass in it, if desired. To make all snug at night, it is only necessary to hang a piece of canvas or carpet over the bars of the open compartment, and the chicks which sleep under the hen in the closed half

COOP FOR YOUNG CHICKS.

can run into the other for a light breakfast in the early morning without getting chilled, some canary seed having been left there for them the night before. The coop ought to be further sheltered by a shed or lean-to, open to the south; and, indeed, a much simpler coop will do very well under a shed. If there is no shed, a good rain-proof coop can be made from nine-inch-wide planks, with some square stuff to use for framing at the corners,

and along the top and bottom, in front, as shown in cut. This coop, which is made to fit over a raised floor, will shed rain, and do well in all weathers. The floor must be covered daily with fresh, dry earth, or fine sifted ashes. Chicks must be cooped near grass, if possible. A grass run, even if it is small, is very important, for green food is essential to health.

FOOD FOR LITTLE CHICKS

The best possible food for young chickens is crumbs of corn bread, made with meal and Pratts Poultry Regulator, as before described. It is always best to bake bread enough at a time to last them a couple of days, and they should be fed four or five times a day at the very least. To feed often, and a little at a time, is the best rule for young chickens. So continue to feed for a week or two, after which they should have a greater variety. A point of the highest importance is regularity in giving them their morning feed. If their first meal is put off until long after sunrise they will suffer from hun-

ger, and will not thrive as they ought. For the first three or four days a yolk of egg, boiled hard and chopped fine, may be given daily; after that, a little boiled meat, finely minced, should be given every day until the chicks are nearly a month old. In fact, fowls need three kinds of food—animal, grain, and fresh vegetable food; and one half of their food should be cooked, as it digests better so. Green food is even more necessary to chicks than to grown birds. When the chicks are very young, grass may be cut fine with scissors, and mixed with their other food; or lettuce or cabbage leaves, minced fine, may be given. After their beaks are stronger, these may be thrown in whole, instead of being cut up.

WATER FOR LITTLE CHICKS

Some breeders advocate keeping water away from chickens during their first month, but this is against nature. It is important, however, that the water should be cool, and it pays to be careful in this respect, not only with chicks but with grown fowls. As soon as the water gets at all warm it should be spilled and renewed, otherwise the birds will have diarrhoea and other troubles.

SHIFTING FOR THEMSELVES

After the first week the wire run may be dispensed with, and the chicks given their liberty. In another week the hen may be let out, but she ought not to be given too much of a run at first, or she will lead her little ones too far and overtax their strength. It is a good plan to dig up the soil, where there are plenty of worms, so as to give the chickens a chance to scratch and thus supply themselves with the animal food which is, as stated before, an essential part of their diet. By the time they are six or eight weeks old the hen will show signs of restlessness, and she should then be relieved of her charge. The latter may then need protection at night in the shape of a "cold mother," which consists of a wooden frame with canvas stretched over it—strips of thin felt or flannel being suspended from the under side of the canvas. Here they can cuddle and keep warm if the weather is cold. It is not a bad plan to separate the chickens from the older fowls at night until they are strong enough to defend themselves.

COLD MOTHER.

MOVABLE HOUSES

Small houses on wheels, or light enough to be moved about on a cart or barrow, are recommended where there is plenty of room. These make it easy to keep the chickens separate, as above suggested; and such houses may also be used for older fowls where the number kept is large.

MOVABLE HOUSE.

CHAPTER IX.

EGGS AND POULTRY FOR THE MARKET.

EGGS FOR MARKET

When eggs are scarce and dear the poulterer who can supply the market will reap a corresponding profit. New-laid eggs at such times are not worth their weight in gold, but they are a sure seller. How to produce eggs when they are most needed is then a valuable secret. To make hens lay we know of nothing so sure as Pratts

Poultry Regulator. Its value in this respect is backed by countless testimonials from all over the country. Other things being equal, the man who gives Pratts Poultry Regulator to his hens will draw steadily ahead of his competitors who fail to use it, and leave them far behind in the matter of eggs produced. There are, of course, other things to see to. As we have already said in Chapter IV the stock must be young to begin with, and must be kept so; and they must be fed liberally, but not profusely. If you want eggs, keep breeds that are naturally good layers, such as Plymouth Rocks, Wyandottes, Black

Hamburgs, Langshans, Houdans, Leghorns or Minorcas. Any of these hatched in March or April will begin to lay in the fall, and will continue right through the winter, especially when given Pratts Poultry Regulator. It need give you no concern that the eggs are small at first; the size will soon improve. You cannot expect birds hatched in May or June to lay until the following spring, except

when the fall and winter are very mild. Those hatched in January or February will begin to lay about August; but they soon moult, and cannot be depended on to lay in the winter. Hence we recommend March or April hatched birds not over two years old. If half your stock of layers is bred each year, and half sold or killed, it will keep your stock as young and vigorous as need be.

MARKETING THE EGGS

What we have said about the value of new-laid eggs makes it important to market your eggs promptly after they are laid. A reputation for absolute freshness of your eggs will show in the price you can command, for there are always buyers who will gladly pay more for a surely good article. It also pays to be careful in getting your eggs to market clean and whole. Trifles tell. If you cannot get them to market immediately, have a shelf with holes in it, and set the eggs in, butt downward. For shipping, locked boxes are easily obtained, with cardboard

EGG TRAY.

partitions and felt sheets, making a quick, safe and handy means of transportation. When you ship every day you can perhaps improve your price by dating each egg, the endorsement operating as a guarantee of freshness; but in a large business this would be a good deal of a burden, and might or might not pay, according to the character of your market. It can be done very quickly with a rubber stamp that can be procured especially for the purpose at a very small outlay.

EGG-SHIPING BOX.

CHICKENS FOR MARKET

Early poultry, like early eggs, sells at paying prices. To have this, the mating for the earliest hatches should be done in the fore part of November, with first-year pullets. Let the cock be young and active, and allow not more than six hens to each cock. Eggs laid in winter or late fall should be gathered promptly, so as not to get frosted in the nest. The plan of using your pullets for breeding is not recommended unless the chickens thus

produced are for killing—for immature mothers will, in time, run down any race of fowls; and what is said about “keeping the stock young” must be taken with a grain of salt, and not pushed too far, if the chickens are to be reared to maturity. Laying fowls, therefore, should be bred from second-year, not first-year birds; but to raise “broilers” or spring chickens for the market, eggs from young pullets are best, and will give the most satisfactory results.

FATTENING

To make a good show on the table a bird must have some fat on it. It is because so little care is taken beforehand that there is so much lean poultry offered on the stalls. We have already referred to the Houdan as a fine table fowl, and likewise the Dorking. Besides these, La Fleche, Crevecœurs, Langshans, Plymouth Rocks and Wyandottes are all recommended. A cross of Game and Dorking gives a fowl with plenty of breast flesh—a thing highly desirable in a table fowl. To kill any fowl without fattening is to forfeit very much on the score of table qualities, to say nothing of appearance. It is true that fattening is not customary in this country; but if it were generally adopted the result would be a great improvement in the quality and appearance of table fowls, and

the taste of buyers would soon become so educated that scrawny or lean fowls would go begging. In the meantime, the poultry producer whose fowls were made superior to the average by the fattening process would reap a harvest in better prices and quicker sales. Three weeks of fattening, in a semi-dark pen, by feeding fresh and sweet Indian, barley, oat or buckwheat meal, mixed separately or all together with skim milk, and including Pratts Poultry Regulator, will add two or three pounds to the weight of the chicken in fine, juicy flesh. The milk should be boiled first, and the food mixed stiff until crumbly, then rounded into the shape of a pill and dipped into milk. Some fatteners make a practice of cramming these into the crop; but it is not necessary at all times, and seems repulsive to any but a veteran. Suet is sometimes added to the mixture in France, where cramming is the rule, and where, by the way, table poultry is seen at its very best. The fattening process must stop as soon as the birds cease to take on flesh, for they will lose it again otherwise.

KILLING POULTRY FOR MARKET

For eighteen hours before killing the birds should have no food, so that all that is in the crop may be consumed. It is astonishing that anyone will buy a fowl with a crop full of corn—put there on purpose to make weight—and the shrewd buyer will avoid such a bird. Corn in the crop sours very soon, and thus the freshness of the fowl is lost. The best method of killing is to use the sharp knife especially sold for this purpose. The incision is made through the roof of the mouth and a quick thrust into the brain, which paralyzes the birds at once and is the most humane way to kill.

DRESSING POULTRY FOR THE MARKET

In France the bird is plucked immediately after killing, and then trussed on a shaping board, which consists of a flat board of the same width as the fowl, with a block at each end to support the neck and rump. Before placing it on the board, and while yet warm, the bird is manipulated by first bending in the rib bones, then pressing the knee into the back, forcing in the breast, and tying the legs over it. Then the fowl is laid on the board with the breast downwards, and a wet cloth is tied around the whole. This shaping not only makes the bird easy to cook, but easy to carve, and if the plan were followed here it would add much to the appearance of poultry on the stands as well as on the table. There is no doubt that care for the looks of the poultry when offered for sale is well bestowed, and will result in a good reputation for the producer, which will be of real value to him. As to the plucking, this is easy enough if done while the bird is warm, and should be followed by a careful singeing over burning paper and a quick dip in boiling water.

CAPONS AND CAPONIZING

Size being an object in capons, only large breeds should be selected, especially Asiatics. They should not be killed until they are a year old. Caponizing is easily done by means of a few simple instruments made especially for the purpose. The operation, which should be performed when the cockerel is from three to four months old, should not be attempted without first seeing it done by someone who knows how, as there is danger of cutting the intestines. Capons bring good prices in the large cities, where the delicacy of their flesh is known and appreciated. If desired, we will supply you with the caponizing instruments at a reasonable price.

NOW CALLED: PRATTS POULTRY REGULATOR.

CHAPTER X.**DISEASES OF POULTRY.**

“Not to put too fine a point upon it,” disease in fowls may usually be traced to some error on the part of the keeper—either in faulty housing, crowding, want

of cleanliness, failure to look after the dust bath, the food or the water, or some other neglect. Pratts Poultry Regulator will help wonderfully to keep fowls in good condition, or to cure them when they are sick, and will, to be sure, do much to overcome the want of proper care, but not absolute neglect. Of course it may happen that a yard may become infected from the introduction of strange chickens, and this, to be sure, is not the fault of the keeper. All new fowls or strangers should at once be fed on Pratts Poultry Regulator, to prevent the development of any disease with which they may possibly be infected.

PRATTS POULTRY REGULATOR FOR POULTRY AILMENTS

When fowls begin to show signs of illness, or your birds begin to die off unaccountably, you must, of course, try to remove the cause, and at the same time apply a remedy. It is so hard, however, to define the disease, usually, that in the first instance, at least, it is best to rely on a remedy which is known to be effective in correcting all curable ailments of poultry, rather than lose valuable time at a critical period in trying to diagnose the case for the purpose of hitting on a specially prepared medicine, which may be the wrong one after all. You

have in Pratts Poultry Regulator something that will cure, if the disease can be cured at all. The question has often been put to us: "How is it that Pratts Poultry Regulator will cure so many different ailments?" We are, therefore, anxious to explain our claims fully, so that while using our product, and knowing its full virtue, you will also understand why the results are so gratifying. It is like this: The father of an infant with a lusty voice and powerful lungs asked a noted doctor what would keep the child quiet at night. The doctor recommended Dolbey's Carminative. He was asked how he knew what ailed the youngster, and he replied: "I don't know where the pain is, and am not likely to find out, as the child can't tell me; and, although I can judge, I can't confirm my judgment. When a child cries there is something the matter, and with this carminative the chances are ninety-nine in a hundred that it will strike the ailment." The child was treated accordingly, and stopped crying. The illustration is plain. As a poultry keeper you know, or if an amateur you will learn, that in many cases it is impossible to decide what ails your fowls, and even after reading the most elaborate list of symptoms described by makers of medicines for each particular disease, you are usually still in the dark. Now in Pratts Poultry Regulator you have just what the doctor had in

the carminative—a preparation composed of a number of healthful ingredients which regulate and control the bowels, blood, liver and digestive organs, and make the fowl robust and healthy, thereby producing flesh, bone and muscle—and eggs, of course, follow, as they are the natural product of healthy fowls. This is common sense, and proves itself; and in using Pratts Poultry Regulator, against its small cost are to be considered the general health of the fowl, the increase of eggs, and the loss of very few—for those that you lose will be lost through accident, and not from disease.

Pratts Poultry Regulator stands throughout the world acknowledged as a reliable remedy for roup, gapes, cholera, and, in fact, all the common ailments of the flock; and in using it you will feel that you are doing the right thing, and have not selected a wrong remedy through making a mistake in the symptoms of the disease. There are, however, certain simple remedies which may be adopted, and it is to these we shall address ourselves, rather than advise you to set up a drug store on your place or take a course in medicine.

ANEMIA

Lack of blood. Symptoms: Weakness, wasting of flesh; comb and wattles pale. Cause: Improper food—leads to indigestion, roup, etc. Cure: Give balanced ration, with Pratts Poultry Regulator, and spray houses with Pratts Dip and Disinfectant.

APOPLEXY

Caused by overfeeding or fright. Symptoms: Falling from perch, peculiar motion of head, loss of control of limbs. Cure: Give two teaspoonfuls castor oil, and bleed from large vein under wing. Reduce diet, and give mashies of Pratts Poultry Regulator. Keep in a quiet coop.

ASTHENIA; or, Going Light

Cause: Lice or mites, bad digestion, improper food. Cure: Use Pratts Powdered Lice Killer on bird; give a well-balanced ration, with Pratts Poultry Regulator.

ATROPHY; or, Wasting of the Liver

Cause: Lack of properly balanced ration—practically starvation. Symptoms: Fowls are dull, bad color of comb and wattles, refuse to exercise. Cure: Right diet, plenty of green food, plenty of fresh water, and

Pratts Poultry Regulator. One-half teaspoonful "Fowler's Solution of Arsenic" may be added to each quart of drinking water, and good results will follow.

BLACK HEAD

Symptoms.—Loss of appetite, weakness, loss of flesh, diarrhea and the head becomes discolored.

Cause.—Usually found in turkeys and caused by a parasite taken with the food into the digestive organs, which attacks the liver. It is very contagious.

Treatment.—This disease is very hard to cure. Separate sick birds at once and thoroughly disinfect all coops, utensils, and runs with Pratts Dip and Disinfectant. Put eight drops of Pratts Dip into each gallon of drinking water for both the sick and well birds. Give sick birds three times a day: sulphur, 10 grains; sulphate of iron, 1 grain; sulphate of quinine, 1 grain. Give soft feed with Pratts Poultry Regulator twice daily.

BLACK ROT

A condition of the comb caused by imperfect circulation of the blood through it; hard to cure. Symptoms: Darkening of the color of the comb; loss of appetite of the bird, which remains on roost or in one position for hours. Cure: Paint comb with a preparation of two

ounces of Water, one ounce of Glycerine and four grains of Carbolic Acid Crystals. Keep bird in dry, sunny house. Give nourishing diet, with Pratts Poultry Regulator and plenty of water and greens.

BROKEN BONES

Unless young and the bird is valuable, kill and use for table. A young bird's bones quickly unite, and if the shank is broken, make splints of pine wood, bandage leg with cotton cloth, wrapping around leg about twice, then put on splints mentioned above and wind cloth over splints, sewing cloth tightly to prevent the splints from slipping.

BRONCHITIS

Caused by exposure to storms, by cold, by irritating particles of dust or lime, and by foul air. Cure: Give daily homeopathic Tincture of Aconite, give soft feed, use Pratts Poultry Regulator. Disinfect with Pratts Dip and Disinfectant.

BUMBLE FOOT

Caused by perches being too high, bruises, irritation from glass, splinters, small stones, etc., being imbedded in foot. Symptoms: Fowl limps, and stands on one leg; corn appears on bottom of foot, which swells and ulcer-

ates. Cure: With a sharp knife cut across the ulcer and remove all pus; then paint the cavity with a solution of Nitrate of Silver, using ten grains to one ounce of water. Bind foot with clean rag and keep bird on clean, dry straw until better.

CANKER

Very contagious. Disinfect house and yards. Symptoms: Bird has trouble swallowing food and water, sores in throat and on head. Cure: Similar to Diphtheria. Mix Pratts Roup Cure with drinking water. Apply scorched Powdered Alum to sores, or make a swab, moisten it, dip into Pratts Roup Cure, and rub on the sore spots.

CATARRH

Similar to a mild case of Roup. Caused by cold winds and draughts. Symptoms: Fowl sneezes, shaking the head, mucous membranes become thick, eyelids sticky, and birds lose desire for food. Cure: Keep fowl in a warm, dry, sunny place. Give Pratts Roup Cure in drinking water. For local treatment apply by atomizer, twice a day, a solution composed of 30 grains of Sulphate of Quinine mixed with an ounce of hot water.

CHICKEN POX

Symptoms: Yellowish pimples on head, weakness and loss of sight. It is contagious. Bird should be separated from flock. Cure: Rub all affected parts with Vaseline, and mix Pratts Poultry Regulator with mash and give plenty of cut clover or green food. Disinfect buildings and yards with Pratts Dip and Disinfectant.

CHOLERA

A germ disease; very contagious. Symptoms: Watery diarrhea, sluggishness, rough plumage, drooping wings, head dropped, great thirst, and eyelids half closed. Cause: Generally started by filth, or given to healthy birds by the germs being carried to their runs or houses. Cure: Disinfect thoroughly with Pratts Dip and Disinfectant. Remove to other quarters all well birds. Scald all troughs and drinking fountains. Give Pratts Poultry Regulator in mashes.

COLDS

Caused usually by exposure to cold, wet weather. Give Pratts Poultry Regulator and use Pratts Roup Cure in drinking water. Give a two grain quinine pill daily for 3 days.

CONGESTION AND INFLAMMATION OF THE LIVER

Symptoms.—Lack of color in comb and wattles; sluggishness, diarrhea of a brown color, arched back and loss of appetite.

Cause.—Overfeeding, too much starch in ration and not enough exercise.

Treatment.—Have mash composed largely of cut clover with bran, middlings and Pratts Poultry Regulator. Give each bird a teaspoonful of castor oil, and give daily for a week, 10 grains sulphate of magnesium and 2 grains bicarbonate of sodium. For grain, use peas, oats and wheat and scatter it in clean litter to compel exercise. Disinfect thoroughly with Pratts Dip and Disinfectant.

CONSTIPATION

Stoppage of bowels, clogged vent, etc. Most common in young chicks. Cause: No exercise, lack of green food and food containing too little of the coarser kinds of grain. Cure: Increase bran and cut clover in mash with Pratts Poultry Regulator; give plenty of green foods, such as cabbage, lettuce, etc.

CONSUMPTION AND TUBERCULOSIS

Consumption: Wasting of body and usually preceded By Roup, Bronchitis or Pneumonia. More rapid than Consumption. In either case the birds become light, stop laying, comb and wattles get whiter and indigestion increases. Cure: Kill and burn all the sick birds. Clean out every part of the poultry house; Disinfect with Pratts Dip and Disinfectant and whitewash. Put new litter in nests and on floor. Rake off a little of the bare surface of the runs, then disinfect the entire run and plow if possible. Scald every trough and drinking vessel. Give plenty of good food and clean drinking water to the rest of the flock. Breed only from perfectly healthy birds, and feed Pratts Poultry Regulator daily as a preventive.

CORNS

Thick cuticle at the sole of the foot. Cause: High or narrow perches, or from pebbles. Cure: Have broad, flat perches; pare off the outer layers of hardened cuticle, and bathe daily with Tincture of Iodine.

CROP BOUND

Impaction and enlargement of the crop. Cause: Obstruction at the outlet of the crop by long pieces of

grass or hay, and retention and swelling of grain. Usually started by gluttony and gorging. Cure: Give the bird some Castor Oil or Olive Oil; then, holding the bird's head downward, work the contents of the crop with the fingers and gradually empty the crop at the mouth. Work very carefully and with patience. If this does not succeed, pluck the feathers from the breast, cut the outer skin about 1 in. in length near the upper part of the crop. Then cut through the crop, making an incision about half an inch in length. Carefully remove contents of crop, and see that the outlet is not obstructed; then sew with white silk the walls of the crop first. Care must be taken so that when sewing the walls of the crop nothing else is included. After this is done, the other tissues and skin should be drawn together with several stitches. In five or six days remove the stitches from the outer skin and do not feed the fowl for at least twenty-four hours. Then feed lightly on well-cooked mash, or bread and milk, for several days; give no grain whatever.

DIARRHŒA

Caused in young chickens by chilliness and lack of mothering. In adult birds, from colds, coarse food, ab-

sence of grit, irregular feeding, improper food, filthy water, etc. Cure; Separate at once. Keep fowls warm and in a dry place. Give Pratts Poultry Regulator; feed boiled rice, and thoroughly cook and mash. A dose of Castor Oil is good, and put one teaspoonful on Tincture of Iron to one quart of water for their drink.

DIPHTHERIA

Winter disease. Caused by improper housing, and lack of cleanliness. Symptoms: Cold and high fever, with white spots in the throat, discharge from nostrils, and a stiff neck. Disease is very contagious and the fowl should be removed from the flock at once, and the house and yards thoroughly fumigated and disinfected. It generally proves fatal, and being so contagious and dangerous, we advise killing the bird at once, unless it is a very valuable one. Treatment: Make a gruel of Pratts Poultry Regulator, and give a tablespoonful four times a day. Smoke the bird over burning sulphur, being very careful, as you may contract the disease from the bird. Spray throat with peroxide of hydrogen. Mix Pratts Roup Cure with drinking water.

DROPSY

A collection of water found between tissues. Cause: Filthy houses and Runs and improper food. Cure: Put one teaspoonful of Nux Vomica to one quart of water for their drink. Have clean quarters, clean Runs, and proper food, and mix Pratts Poultry Regulator with the regular feed. Give a good supply of greens and grit.

DROPSY OF FEET

Due to a gouty or sluggish condition of the circulation. Cause: Congested liver, freezing of the feet, crowding with food and no exercise. Cure: Give plain food with Pratts Poultry Regulator, green vegetables, cut clover, and a dose or two of Castor Oil.

DYSENTERY

Symptoms: Excessive diarrhea. Cause: Neglected diarrhea, filthy food or drinking water, and poor care. Spreads by means of the droppings. Cure: Put Pratts Roup Cure in drinking water. Feed lightly; give one-third of mash of cut clover; give Pratts Poultry Regulator, and lots of grit and bread soaked in scalded milk.

ECZEMA

Symptoms: White pimples on wattles, which spread and become crusted; birds are listless, and lose appetite. Cause: Over-feeding of a highly nitrogenous ration, or from too close in-breeding. Cure: Give plenty of clover and green vegetables, but very little meat. Feed Pratts Poultry Regulator in mash, and give one grain of Calomel every night for a week. Bathe affected parts with Pratts Dip and Disinfectant.

EGG BOUND

Cause: Overfat condition of entire system, which affects egg passage. Egg Bound causes death from heart disease. Egg Bound hens frequently lay double-yolk eggs. Symptoms: Tail feathers lowered, aimlessly moving about, frequently going to nest without laying. Cure: Long-continued cases hard to cure. If a simple case, with an oiled finger try to reach and break the egg, removing it all if possible. If beyond reach, give twenty drops of fluid extract of Ergot in warm water, and after an hour or so, steam the vent of bird over warm water. House alone and feed lightly, giving plenty of cut clover, Pratts Poultry Regulator and greens, but little fat-producing foods.

ENEMIES

Lice—Nothing does more harm to poultry than lice, and no lice-infested poultry plant can succeed. Lice weaken the fowls and they quickly fall victims to diseases of various kinds. First of all, dust every fowl thoroughly with Pratts Powdered Lice Killer, which is the surest and most effective powder for this purpose on the market, and will quickly kill and drive away all lice. Then thoroughly clean the house and spray the whole inside of the house with Pratts Liquid Lice Killer. Be careful to reach every crack, nook and corner, especially the ends of the roosts where fastened to the house. Also spray the ground in the Run. Cleanliness, white-wash and Pratts Lice Killers will prevent lice. Pratts Powdered Lice Killer will also kill mites, fleas, ticks and gnats. Carefully examine the heads of little chicks and apply Pratts Head Lice Ointment—this will save many lives.

Rats—Rats will destroy chicks by the hundred. Use traps of various kinds, continually scalding them. Rat poison should also be used, but care taken that it is kept away from the fowls.

Mice—Should never be tolerated. Use traps and cats until they are exterminated.

Cats—A good cat is a great benefit around a poul-

try plant; but a bad one, the worst possible enemy of the place. Cats should be trained when young to let the chicks alone. Some cats cannot be taught, so must be sent away at once.

Dogs—A well-trained dog is a valuable adjunct to a poultry plant; but look out for stray dogs, which will destroy your chicks in short order.

Weasels, Minks, Opposums, Foxes and Skunks all destroy chickens. Use traps and cover all entrances to poultry houses at night with a fine wire netting.

Hawks—Guineas, if kept, will usually give the alarm. Traps set in a platform at the top of a pole near the yard will frequently catch them.

Crows—Crows eat young chickens. Rig up a scarecrow, and fasten bright pieces of tin to strings attached to poles.

Thieves—If thieves are prevalent in your neighborhood use electric alarms, and have a good watch dog.

FROST BITES

The comb or wattles become purple or black. Bathe with compound Tincture of Benzoin, or apply twice a day an ointment of three tablespoonfuls of Vaseline, one tablespoonful of Glycerine and one-half teaspoonful of Turpentine. Thaw the comb out gradually.

GAPES

Direct cause of death of thousands of young chicks. Due to irritation of the wind-pipe by a small, red, two-pronged worm. These parasites are found in earth worms, in water and frequently are in the soil and litter of Runs. As soon as chicks are found to be infected, remove to other houses. The symptoms are easily recognized. The fowl has difficulty in breathing. Mouth opens frequently and bird gaps or gasps for breath. There is some coughing accomplished by frothy slime. Death usually results quickly from suffocation.

There are one hundred and one so called remedies, but we have never heard of a failure to cure this disease where Pratts Gape Cure has been used as directed. It not only cures, but will prevent gapes if used in the drinking water.

Don't waste time and money in using gape remedies which tell you to mix the remedy with the feed. You cannot cure a case of gapes that way. You will always have complete success by simply placing Pratts Gape Cure in the drinking water as directed, and we then *guarantee* a cure.

GASTRITIS

Enlargement of the food passage just before it reaches the gizzard. Symptoms: Loss of appetite, ruffled feathers, emaciation, constipation or diarrhea, and general weakness. Cause: Overfeeding, lack of grit, irritation from poison or pins, nails, etc. Cure: Give Castor Oil. Feed Pratts Poultry Regulator with bread and milk, give plenty of grass or vegetables, and have grit within easy reach. Put about twenty grains of Bicarbonate of Soda in one quart of drinking water, or one-tenth of a grain of Arsenite of Copper to a pint of drinking water.

INDIGESTION

Affects entire digestive system. Cause: Lack of exercise, not enough green food, overfeeding, or badly-balanced ration. Cure: Have clean house, pure water, and feed a well-balanced ration at regular hours; feed Pratts Poultry Regulator daily.

INFLAMMATION OF EGG PASSAGE

Usually fatal. Symptoms: A continual straining, wings are dropped, ruffled feathers, and the vent is red and hot. Cause: Generally over-fat condition, too stimulating a ration, injury from breaking of egg, or from

irritation. Cure: Examine, and by use of oiled finger, find out if there is an egg or broken egg in passage. If so, gently remove it. Give one-half teaspoonful Sulphate of Magnesia in about a tablespoonful of warm water. Feed lightly, but give plenty of cut clover and greens, with Pratts Poultry Regulator.

LEG WEAKNESS

Staggering gait, sitting down to eat, and flapping of wings while walking. Cause: Overfeeding, and a poorly balanced ration. Cure, Feed no corn or cornmeal, mix Pratts Poultry Regulator with mash, and give plenty of steamed cut clover. Rub legs with Tincture of Arnica or Pratts Liniment, and put iron in drinking water.

PASTING UP

In little chicks; caused by weakness or improper food. Cure: Soften mass with warm water and Sweet Oil, and remove, anoint with Cosmoline. Give a dose of Olive Oil, then feed mash with plenty of bran, cut clover and Pratts Poultry Regulator in it. Give plenty of grass and put a little iron in drinking water.

PERITONITIS

Inflammation of membranes covering organs in abdomen. Usually caused by outside violence. Symptoms: High fever, hot to the touch over the bowels, great weakness, falling on its side with legs drawn up. Cure: Peritonitis is usually fatal. One grain Opium pills, twice a day, will ease the bird. All food should be liquid.

PIP

A drying and hardening at the end of the tongue, accompanied by a cough. Cause: Stoppage of the nostrils, which compels the chick to breathe through the mouth. Paint tongue with Glycerine and water twice daily and remove the cause of the disease. Feed Pratts Poultry Regulator mixed in soft mashes and the trouble will disappear.

PNEUMONIA

Catarrhal inflammation of the lining of the air cells of the lungs. Symptoms: Panting for breath, dullness, loss of appetite and sluggishness. Cause: Colds, exposure, dampness and bad air. Cure: Disease is dangerous and generally fatal. Place birds in a warm room, with good ventilation. Feed milk and beef juice, with bran, served warm. One drop Tincture of Aconite should be

given every three hours. Have a pan of hot water in the room, in which place a teaspoonful of Pratts Dip and Disinfectant.

RHEUMATISM

Symptoms: Swollen joints, lameness and contractions of the muscles. Cause: Too much meat being fed and exposure to cold and dampness. Cure: Dry sunny houses, plenty of green vegetables and cut clover. Give Pratts Poultry Regulator in mash. Rub joints with Pratts Liniment.

ROUP

An infectious disease of the air passages. Prevalent in late Fall and wet seasons. Symptoms: Discharges at mouth and nostrils, swelled head, offensive breath, difficult breathing, canker spots and exhaustion. Cause: Exposure to cold, dampness, filthy quarters or neglect. Prevention is better than a cure and Pratts Roup Cure will positively prevent this disease. Treat as soon as first symptom is noticed. Mix Pratts Roup Cure in soft drinking water. Separate the sick chickens and do not let the diseased fowls have access to the regular drinking water. In case the fowl cannot see to drink, heat the water and bathe it with the solution. If taken in time, the fowl will be saved. Be sure to disinfect with Pratts Dip and Disinfectant.

RATTLING IN THE THROAT

Cause.—Usually cold and dampness.

Treatment.—Mix one part turpentine and four parts sweet oil and give 8 to 10 drops daily, and put Pratts Roup Cure in the drinking water. Red or irritated skin. —Apply vaseline or Pratts Healing Ointment.

SORE HEAD

This is a form of chicken-pox. It is very contagious.

Treatment.—Separate sick birds at once. Disinfect plant with Pratts Dip and Disinfectant. Apply a strong solution of sulphate of zinc or Pratts Dip to the sores. Put a little bromide of potassium in the drinking water. Anoint head with one part Pratts Dip to five parts vaseline.

SWELLED HEAD

Treatment.—Bathe entire head night and morning with equal parts vinegar and water. Put Pratts Roup Cure in the drinking water and give Pratts Poultry Regulator in gruel form.

SCALY LEG

Contagious. A result of the irritation of a parasite. Cure: Pratts Head Lice Ointment is a guaranteed remedy for this disease.

THE ROUND WORM

Not dangerous except from the massing of large numbers. Symptoms: Comb and wattles pale, the bird thin, and there may be slight diarrhea. Cure: Dissolve in the water used for the mash two grains Santonine for each fowl to be treated, then mix Castor Oil with the mash, one-half teaspoonful for each bird. Collect droppings and remove them out of the reach of birds, or keep fowl from food for twenty-four hours; then give each bird two-thirds of a teaspoonful of Areca Nut Powder. The next day, give one-half teaspoonful of Castor Oil.

THE TAPE WORM

Only occasionally found in fowls. The fowl infected will have hearty appetite, yet appear thin and weak. Give the fowl six drops of Oil of Male Fern in one teaspoonful of Castor Oil. Do this in the morning, and two or three hours later give a mash with one tablespoonful of Castor Oil in it to the bird.

VICES

Egg-Eating—caused by fowls eating an egg that has been dropped and broken on the floor, or from eating egg-shells that have not been crushed. Some fowls can never be cured, and had better be killed. If one is caught at it, separate at once, as the habit becomes contagious. One method of curing is to pare the horny beak of the fowl down to the quick and place some china eggs before it. Another method is to feed a large quantity of broken eggs at one time, which will sicken the fowl and cure the vice.

Feather-Eating and Feather-Pulling—Caused by too closely confining the fowls and allowing them to be idle. Usually cured by giving plenty of exercise and a ration with a large quantity of greens, cut clover, beef, scraps, animal meat, fresh bone and good sharp grit. Let the chickens peck at a strip of salt pork hung in the hen-house. Treat fowl that has been plucked by rubbing on skin Carbulated Vaseline.

Filthy feeding (eating the droppings, or other filth) causes bowel trouble, and can be prevented by having clean houses, Runs and troughs, and making the fowls exercise.

VENT GLEET

Symptoms.—Frequent passages of excrement which is voided in small quantities. There is a white, offensive discharge, which collects on the skin and feathers about the vent and causing irritation and inflammation. Membranes are dry, red and swollen.

Cause.—By an inflammation of the cloaca.

Treatment.—Separate sick birds at once and disinfect with Pratts Dip and Disinfectant. Hold the lower part of the bird for one-half hour daily in a bucket of warm water that contains two to four teaspoonfuls of bicarbonate of soda. Then dry the bird and inject into the bowels a teaspoonful of water containing 3 drops of Pratts Dip. Use Pratts Dip one part and vaseline six parts on sores around vent. Feed mash feed containing cut clover and Pratts Poultry Regulator.

VERTIGO

Symptoms: Staggering, slight convulsions, throwing up the head and back or to the side, or a rush of blood to the brain. *Cause:* Over-fed condition. *Cure:*

Correct diet; give abundance of green food. Feed Pratts Poultry Regulator and mix Pratts Roup Cure in the drinking water.

WIND PUFF

Cause.—Frequently seen in young chicks. Air under the skin causes it to puff. Usually caused by lung trouble.

Treatment.—Puncture the skin and bathe with one part Pratts Dip and Disinfectant to ten parts water.

WARTS

Treatment.—For warts on fowls' heads, wash with soap and warm water and a small quantity of Pratts Dip. Wipe dry and anoint daily for a week with one part spirits of turpentine, one part cedar oil, and one-half part carbolic acid.

CHAPTER XI.

BREEDING FOR EXHIBITION.

ACCOMMODATIONS

Fancy breeding requires special preparation of quarters; but any plan is good which sufficiently provides for separation of sexes and breeds, healthy and roomy Runs for the young chickens, careful housing and feeding, and close attention.

SELECTION

Mere preservation of purity in a breed is not of so much value as improvement. Marked features in any breed may be accentuated by careful breeding, on the principle of selection, and special points may thus be developed as desired. Without careful selection, the distinctive points will gradually disappear. On the other hand, artificial selection, carried too far, and with only one point in view, will result in deterioration in other points. Crossing, therefore, becomes important.

CROSSING

The purpose of crossing is the improvement of one breed by introducing the desirable characteristics of another. Thus any desired point, possessed in perfection by one breed, can be introduced into another by crossing, and by selection every other characteristic of the cross can be bred out again. There is practically no limit in improvement by means of strict selection and intelligent crossing.

STOCK

It is useless to begin with poor stock. Get the best breeds at once, and if you have no friend whose experience is a sure guide, study the subject thoroughly, and get the points fixed in your mind. Our descriptions will enable you to recognize the various breeds, and you can study them under your own eyes at the shows. In buying, trade only with regular dealers of established reputation. It is unnecessary to purchase both sexes from the same family; but to buy both from one yard is of this advantage, that you avoid the risk of an erratic breeding, which is quite likely to result from the first cross.

AGE

The ages of cock and hen should not be the same. A one-year-old cock, mated with hens a year older, will produce the strongest and best chickens; but as the proportion of cocks produced is apt to be large in such cases, it is wiser to put a two-year-old cock with younger hens.

INTERBREEDING

It will not do to breed continuously from members of the same family, nor yet to interbreed promiscuously in the same yard; but if the families are kept strictly separate, they can be interbred successively for a number of years without calling in any other yard. The scientific plan is to record carefully the parentage of every bird, and keep the chickens of each family identified until needed. In the following year, the best specimens are selected for the breeding yards, with care that the cocks and hens are of different families; and further, that two yards are thus made up without any close family connection between them. This will give a chance to mate unrelated birds in the next year, also, and so on. Another good plan is to send away one of the young cocks to some other yard or farm for a year. When he comes back he will be so remotely related to the new pullets that it will do no harm to mate him with them. When a new cock is brought in, let him be of undoubted pedigree, as well as a good specimen of his breed.

MARKING

It is established that the cock has the most influence in marking the chickens as to colors, comb and fancy points generally. He ought, therefore to be chosen for

these; and while it is of course best to have a perfect bird, his want of size, if he is all right in other respects will not be harmful, if he is mated with good hens; but never choose a cock who is faulty in comb or plumage. For the same reason, avoid a small or ill shaped hen, but do not discard her because of a few faulty feathers or an indifferent comb. As a general rule, cockerels resemble the father, and pullets the mother, more or less. If, therefore, it is desired to increase the size of a strain, cross with an outside hen; and so if a better breast, or any change in shape is desired; but if a change in plumage is wanted, cross with an outside cock. In breeding the cross out again, to form a new variety, observe the same rules.

HAREM

If because of high prices, only three first-class birds can be afforded, it is wise to add to the harem say two or more hens of ordinary breeds, otherwise the birds will suffer from too much gallantry, and lose their feathers. Of course, the eggs should be so different as to be readily distinguishable. Four hens are enough for fine breeding, except in the case of Houdans and some others. Some breeders allow six. A hen must not be kept from sitting entirely; but it is better to set a fancy-

bred hen on duck's eggs than on her own, for when hatched the ducklings will soon be independent of their foster mother.

HATCHING FOR EXHIBITION

With hardy breeds, set as soon after January as possible, to give plenty of time for growth before the shows. Give no hen more than seven or eight eggs. If six hatch, they are all she will be able to cover when they are grown to the age when they need her most. Delicate breeds, like Spanish or Dorkings, should not be hatched before April, unless the shelter is unusually good. For early eggs, mate the birds early in December, and do not change about, or the cock may turn sulky if deprived of a bird to which he has become attached. See that the cock is well fed, even if he has to be attended to separately. If very gallant, he will wait until his wives are satisfied before helping himself, and may thus get less than his share.

REARING FOR EXHIBITION

Except in the case of Game and Bantams, size is very important in exhibiting. Therefore see to it that the chicks get enough. It is needless to advise the utmost care as to their warmth and health. The feeding

should be frequent—every two hours is not too often; but after a month, gradually reduce the number of meals, so that the rule at three months shall be four times a day. At ten weeks, weed out the poor birds, and separate the sexes. Do not let prize chickens roost until they are three months old, and then be sure that the perches are large and low. If there is no grass run, give plenty of green food. In “weeding out,” do not save a bird unless it is really fine. Indifferent birds only crowd the yard and hinder the development of good ones. Do not fail to feed Pratts Poultry Regulator; the result in cases like this will more than please you.

BEFORE THE SHOW

When the birds are ready to exhibit, which will not to be until they are six months old, such as are to be shown in the same pen should be placed in company at least ten days before the show, so as to get used to each other. An important point is the washing of the head and legs, after which they should go in a dry room well covered with clean straw, into which have been sprinkled a few handfuls of wheat. In scratching for the grains they get themselves perfectly clean. A little sulphate of iron dissolved in the drinking water will redden the combs, and add greatly to the appearance. Feed well

and give plenty of fresh green food. Do not omit the steady use of Pratts Poultry Regulator. Birds of light color, or with a good deal of white in their plumage, will need to have their feathers washed, and where the bird is all white, a small quantity of wash blue in the water will heighten the effect. For the legs, use a stiffish brush, for comb, a soft one. For the plumage, good yellow soap and a sponge are needed. The easiest way is to fill a tub or pan part full of warm water, and put the bird into it. All the soap must be rinsed out of the feathers, and a final rinse with cold water will keep the bird from catching cold. Dry off with a towel, and set the bird in a lined basket in front of a fire. Buckwheat and hempseed, fed for a week or two before the show, will add luster to the plumage. The comb may be further improved by rubbing in a little fresh butter and wiping it off thoroughly with a damp rag.

SHIPPING HAMPERS

A round hamper is the safest. For Spanish or other large-combed breeds, stitch a piece of canvas over the top. In general, however, use a flat wicker top. In cold weather the hamper should be lined with canvas or straw stitched in.

POINTS

These will be covered in our description of the various breeds (see Part II).

CHAPTER XII.

WATER FOWLS, TURKEYS, GUINEAS, PIGEONS, AND
PEA-FOWLS.

DUCKS

Ducks can be made to pay, being hardy, easy to raise, and usually salable at good prices. Good ground is not essential, but a running stream of water is desirable, although a pond will do. Some shelter is desirable, but it will not do to keep the ducks with hens, the former being comparatively uncleanly. They eat a good deal, but fatten rapidly on boiled rice, and are also good layers, their eggs always selling well, especially to confectioners. In the fall and winter they want a house, which need not be very large. One three feet high will serve. It should be kept dry and well ventilated. A shed is not necessary unless the house is very small. Cover the floor with clean straw, and use the same, with bricks for nests. It is well to have a hollow railing around the yard, to keep the birds from laying outside,

which they will do if let out too early in the morning. The wild duck, or Mallard, is supposed to be the progenitor of all the other breeds, of which we will describe seven varieties.

RAISING DUCKS

as in raising chickens, the object to be secured must be considered. If breeding is the purpose, the drake should not be over two years old. If near that age, two ducks to one drake is the rule; but if young and vigorous, two drakes may be given five ducks. The eggs may be hatched under large Brahma or Cochin hens, but must be kept moist. A dozen eggs are enough for one nest. If put into an incubator, it must not be with hens' eggs in the same hatcher, for ducks' eggs require more moisture, which is got by a daily sprinkling, and more air, with a longer-cooling time. Duck eggs usually take twenty-eight days to hatch, but may open a day or two before that. The ninth or tenth day is the best one for the first test, and the water test may be made on the twenty-fifth day. After the hatching, the ducklings may be treated much as chicks should be (see page 58). Unless you are raising for the table, do not feed too liberally, or with fattening food, but give bone-forming food. In raising for the table, flesh is the object, and must be considered in the feeding.

DUCK RAISING AS A BUSINESS

Duck raising has become quite an industry of late years, and thousands are shipped weekly into the markets. Unlike geese eggs, duck eggs hatch well in incubators and the young are easily reared in brooders.

For market, ducks should be killed when about ten weeks old, for they are more apt to lose than gain weight after that age. The Pekin is the most popular market duck, but recently the Indian Runner has been added on a number of farms to furnish a smaller sized carcass.

In dressing ducks for market they are generally scalded, making it more easy to remove the feathers. Some farmers, however, dry-pick the feathers, but it requires quite an expert to do the work satisfactorily.

The carcasses are shipped to market in barrels, it requiring about forty carcasses to fill a barrel. The best prices in market are paid from May 1st to July; from July to September there is somewhat of a drop which remains unchanged until September to November, when good prices are again attained. At ten weeks of age, Pekin ducklings should weigh from ten to eleven pounds to the pair.

It costs about five cents per pound to feed ducks up to ten weeks of age, two cents for help, two cents to

market, and three cents for eggs, insurance etc., making a total of twelve cents a pound. All received over that amount is profit.

From February to May, duck eggs show the strongest fertility.

It takes about two weeks to fatten ducklings, for which a good food in equal parts of bran, cornmeal and middlings, and one-eighth beef scraps and Pratts Poultry Regulator. Green ducks are shipped with heads on and undrawn. They are picked one-half of the neck, and to the first wing joint.

White duck feathers sell generally in large city markets at from thirty-seven to thirty-nine cents per pound; colored ones at seventeen to twenty-three cents a pound.

AYLESBURY DUCKS

The Aylesbury is a very common form of duck. The plumage is entirely white. The bill is of a delicate pink or flesh color, and is well set into the full head, so as to form a line from the top of the head to the tip of the bill, which is very long. The neck also is long and fine; body long, but broad, sometimes described as boat-shaped. The eyes are black, but very bright. The drake has one or two sharp curls in his tail. The legs

are short and strong; well-webbed claws; color, orange or dark yellow. The drake weighs on an average seven pounds, a duck six; but for show purposes nine pounds is the attempted weight. The delicate color of the bill is said to have been originally due to the fine white gravel found near Aylesbury, England, where these birds originated—constant shoveling of the bills into this gravel keeping the bills very clean. Other sorts of fine gravel may accomplish the same purpose; but a bird which is being raised for show must be kept out of the sun, which soon tans the bill.

CAYUGA DUCKS.

Cayuga Ducks are black all over, with lustrous green reflections, especially on head, neck and wings, there is also a tinge of claret brown or bright purple on the back and wings. In the drake the green is stronger than in the duck, and his bill is greenish yellow, with black tip, while hers is black, tipped with greenish slate. The color of the bill, however, varies with the seasons. In shape it starts with a downward curve, and ends with an upward one. The legs are orange color, but of a dusky shade.

CALL DUCKS

Call Ducks are named from the voice of the drake, which is like a low whistle. One variety has plumage like the Aylesbury, but with a yellow bill; another looks like the Rouen, which is described on page 114; the Call is, however, smaller than either. There is also a White Call, or decoy duck. All of these are too small to breed for the table, but are desirable as ornamental birds.

PEKIN.

AYLESBURY DRAKE.

PEKIN.

EAST INDIAN DUCKS

The East Indian Duck is also known as the Buenos Ayres Black Duck. Their color is black, with rich green luster. They mate in pairs. The flesh is delicious, but the bird is small, and when shown weighs not more than four or five pounds.

MUSCOVY DUCKS

The Muscovy, or Musk Duck, sometimes called the Peruvian, has a noticeable musky odor. There is a great disproportion between the drake and the duck, the

former weighing up to ten pounds, the latter not going over six. There are several varieties of plumage—white, black, blue and mottled. The face is bare, with fleshy bunches at the base of the bill and around the eyes. The drake is very fierce. The ducks are good layers, and the flesh is plenty and good.

PEKIN DUCKS

The Pekin is comparatively a new comer, having first been heard of in 1873. The shape is like that of a canoe, high at bow and stern; plumage, white; legs short, set very far back, and colored deep yellow or reddish-orange, which is also the color of the bill; head large; neck long. This bird is hardy; best of all for laying; grows fast; the eggs are usually fertile, and the breed crosses well with the Aylesbury. The position of the legs gives the bird an upright walk much like that of the Penguin. The standard weight for drake is eight pounds; duck, seven pounds.

ROUEN DUCKS

The Rouen Duck is very handsome, resembling the wild duck in plumage, but of larger size, weighing sometimes eight or nine pounds, and the flesh is excellent. The drake is of a stately appearance, with a fine, long

bill, Aylesbury shape, and in color yellow with a greenish tinge, and a jet black bean at the tip. His head is green, with purple gloss extending down the neck, which is nearly encircled with a ring of pure white. The breast is a rich brown, the body gray, whitening at the tail. The back is green-black, and the curling tail feathers, dark green. Wings, gray-brown, with purple and white ribbon mark; flight feathers, gray and brown; legs, orange. The duck has a shorter bill, colored orange-brown, yellowing at the edges, and with a nearly black mark appearing towards the end; her head is dark brown, with light brown lines on each side of the face; breast, dark brown penciled on light brown ground; on the back the pencilings are black or brown; wing also penciled black and gray on the shoulder; flight feathers gray, with ribbon mark. The Rouen is hardy and prolific, and if the ducklings are looked after for the first ten days, and only allowed a short swim each day until their feathers come, they can be reared without difficulty.

INDIAN RUNNER DUCKS

It is claimed that the Indian Runner ducks originally came from the West Indies, where they had been bred for years as egg producers. They were introduced into this country about fifteen years ago.

In color they are fawn and white, being handsomely marked about the body and head. The bill is yellow, splashed with green when young, and green with black bean when fully developed; shanks and toes a deep bright yellow. The body is long and narrow and carried very erect; neck long and thin, with finely formed, long head. The standard weight is four and a half pounds for the drake, and the duck is a half pound lighter. Usually, however, they run over those weights. The quality of the meat is excellent, fine grained and juicy and well flavored. In ten weeks they can be grown to a remarkable size of three and a half to five pounds each.

They are great layers, breeders in England claiming as high as 260 eggs in a season for individual layers. In this country they have records of from 175 to 200 eggs per duck.

OTHER VARIETIES OF DUCKS

Mandarin, Carolina, Spotted Bill, Whistled, Pintail and Kasarka Ducks are also to be had when great variety is wanted, but we will not take space to describe them.

GEESE

Geese are easy to raise, and are an actual benefit to the land, if put on after the grain is gathered; cost little to keep, and sell well. To make a business of goose raising, however, requires a pond of reasonably good size as well as plenty of pasturage. The geese should have a house to themselves, apart from the other fowls; well supplied with clean straw for making nests. The house should be easy to get in and out of. For setting, collect the eggs and keep them in bran, or in a rack, until the geese are ready to sit. Geese ought to be set early, as the hot weather is trying on the little ones. The time of incubation is from thirty to thirty-four days. The mother should have plenty of food and be sent on the pond daily, as moisture is important for the eggs. There is little difference in the raising of geese from the rules given for chickens. They are usually fattened for the market, and before killing should be put into the pond so as to clean the feathers, and afterwards put on clean straw, fasting for a day before being dispatched.

Geese pair when sexes are equal, and while a young gander will often mate with three or four females, he usually has one particular favorite among the number whose nest he guards more jealously than those of his other mates, and after some years he is liable to grow so

inattentive to all but the favorite that many infertile eggs will be the result. Geese seek mates in February, and any changing in mating should be made in the fall (not later than December) for best results.

Geese live to a great age, and females are reliable and productive breeders for many years, but ganders of the domestic varieties are usually unreliable after seven to nine years old. An abdominal pouch of great size indicates great age. At one year old, geese are not sufficiently mature for breeding. They are better at the age of two or three years.

The goose is a grazer. Its bill is provided with sharp, interlocking, serrated edges, designed to easily cut and divide vegetable tissues, and the tongue at the tip is covered with hard, hair-like projections pointing towards the throat, which serve to quickly and surely convey the bits of grass and leaves into the throat.

A low, marshy field with a little upland does splendid for geese. Ten geese will consume as much grass as a cow. At three months old, a gosling will dress from ten to twelve pounds, depending on the season of the year hatched, breed, etc.

We describe two varieties, the Gray or Toulouse, and the White or Embden, which are the principal ones, African, Canadian, Chinese and Egyptian are the others.

GRAY OR TOULOUSE GEESSE

This breed is larger and handsomer than the white goose, and pays better to raise. The color is brown, with white on the under parts and tail coverts. The bill is orange-red in color; forehead, flat.

WHITE OR EMBDEN GEESSE

The bird is pure white all over. It has a bright blue eyes; the bill is flesh color. This goose is said to lay better than the gray, as well as earlier.

SWANS

The swan is, of course, a fancy fowl entirely, although the flesh of the cygnet is very good. The female lays from seven to nine eggs late in the winter, out of which five is a good hatch. The old birds forage for themselves, but will need some grain in the winter time. The cygnets can be fed by throwing meal on the water. Swans are ill-tempered birds, especially in the breeding season, and are best left pretty much to themselves.

VARIETIES OF SWANS

There are three principal varieties of swans: the English White or Mute Swan; the Australian or Black Swan—both of which are sufficiently described by their

names—and the Chili or Peruvian Swan, which has a black head and neck, with a white body. The White is the largest of the three. Swans are very long lived, and it is asserted that some have lasted a whole century.

TURKEYS

Turkey chicks die easily, but if they can be got through the first two months, or until they show or “shoot the red” on the neck and throat, they are from that time very hardy. Before that, wet or cold weather is fatal, unless the strictest care is observed. Dry soil is, therefore, one essential to success, and plenty of good shelter. One cock will take care of a whole yardful of hens, but it is best to limit him to a dozen, if chicks are to be raised. The hen usually lays about eighteen eggs, but if the first seven are given to a common hen, the turkey hen will have enough to take care of with the rest of her laying. The cock must be kept away from the nest, as he has a habit of destroying the eggs. The time of incubation is from twenty-six to twenty-nine days. The hen ought to be well fed, and supplied with food and water where she can reach it, just before the hatching is due, and must then be let alone until it is over. A good way to teach the stupid

chicks how to feed is to put one or two ordinary hen's eggs under the mother about five days after the hen has been set, and the chicks, thus hatching at the same time with the young turkeys, will soon by example, teach them how to feed. They should never be forced to eat, and should not be given anything which will influence diarrhœa.

Young turkeys are subject to two special dangers: (1) a peculiar susceptibility to wet and (in less degree) to cold, and (2) a great liability to diarrhœa. For the first week the young bird should have little beyond hard-boiled egg, minced up with dandelion leaves and a small quantity of Pratts Poultry Regulator; a little bread crumb may be added. All through, dandelion leaves make far the best green food; but if they cannot be had, boiled onions, chopped fine, are the next best. As they get older, they are fed on good barley meal or oatmeal, and may also be given freely fresh curd squeezed dry from the whey; but buttermilk is about as likely to cause trouble as anything can be.

The egg and Pratts Poultry Regulator for a week are of very great importance to prevent a slight tendency to diarrhœa from the first, which often sets in, and gets worse, and carries them off later on. While young turkeys require the utmost care when very young,

and should be confined for a while, let it be known that they will not thrive unless they have the benefit of a range as they become larger. They are active foragers, and must have a chance to exercise that peculiarity; but in so doing they will pick up the greater part of their food. Those who grow tobacco should always keep a flock of turkeys, as they are very destructive to the large green worms that do so much damage to that crop. If allowed a range, and fed on grain at night, they can easily be taught to come up at regular hours.

Turkeys keep growing until they are three or four years old; but can be used for breeding when they are two years old. There are six principal varieties of turkeys: White, Black, Bronze, Buff, Slate and Narragansett. The heaviest of them is the American Bronze, which is known to have reached thirty-two pounds, and the hen twenty-two. Turkeys are of great use in a vineyard, where they are active and vigilant in destroying bugs and worms.

Inbreeding must be avoided. A single union of a male and female fertilize all the eggs laid by that hen in that season. One gobbler can serve twenty or more hens. The turkey is not fully matured until two years old, is at its best for breeding at three years, and nearly as good at four. Don't breed from excessive weights.

GUINEA FOWLS

The Guinea hen is a good layer, but the eggs are of a wild, gamey flavor, and consequently not generally sold for table use. The Guinea is of a roving disposition. The hen starts laying early in April, and continues until October, during which time she will lay as many as ten dozen eggs. After July 1st is the best time to hatch eggs, as the weather will be more settled. It requires twenty-eight days to hatch their eggs.

The hen has a habit of hiding her nest, and that too in some obscure place. It can be discovered by following the sound of her voice, a shrill cry, which she gives as she leaves the nest after having laid. All the hens of a flock are apt to lay in the same nest. In removing these eggs they must not be touched with the hands, for if the hen discovers that her nest has been tampered with she will hunt another. Remove the eggs from the nest with a stick.

There are two varieties of Guineas—the Pearl and the White. It is said that a cross between these two will produce a carcass that very closely resembles that of the English Grouse.

Guineas pair. The young are delicate and tender until well feathered. The cock bird cares as much for the young as does the hen, guarding them during the day and hovering them at night.

The male is larger than the female, more aggressive, and has different call. The hens make a noise sounding like: “come back, come back!” while the males give “Tick, tick!” Guineas do not scratch like other fowls do, and are therefore safe to have in the garden. They do not thrive in confinement.

PIGEONS

Squab raising is an industry that is fast growing, and which has proved to be an excellent adjunct to poultry farming. The usefulness of the pigeon generally ends after seven or eight years’ breeding. It is in its prime between the ages of three and five years. A bird of an average size requires about an ounce of food a day. The eggs hatch on the eighteenth day. The breeding season, as a rule, extends from March to September. The first egg is generally laid about two weeks after the

nest has been made. The best prices for squab is during January, February and March. As soon as the feathers begin to appear on the young, the mother hovers them at night, and after they have fledged, no further attention is paid them. The young pigeon attains its full growth at about five or six weeks of age. Should the mother hen die while the young are but a few weeks old, the father takes charge of the nest, feeding and nursing the young as regular as did the mother. As a general thing, the hen lays her first egg between five and six o'clock in the evening, then she skips a day, and about two or three o'clock the following afternoon adds the second egg. Contrary to general belief, the pigeon is not destructive to gardens. Its beak is like that of a crow, to enable it to dig with, and its feet are unlike that of a chicken, consequently it cannot scratch. It walks over the surface of the ground and picks up what is in plain sight, which principally consists of weed seeds. When pigeons are mated they remain true, divide labor, and are ever in each other's company. The older the male the more fatherly he becomes. At a day old, pigeons are called "peppers," at ten days old "squeakers," and at three weeks old "squealers." A squab grows very fast the first twelve hours, and very rapidly after the third day. As a rule, the male selects the nest and en-

deavors to persuade his mate to join him. It costs about fifty-two cents a year to feed each breeding bird. The Homer, Carneaux, Swiss Mondaine, Hen, Dragoon and Runt pigeons are used for squab raising, more generally in crossing. Large and successful pigeon raisers throughout the United States are daily using Pratts Poultry Regulator and find that it pays for its cost many times over.

PEA-FOWLS

The Pea-fowl is a striking bird, familiar in appearance to every one from its kingly crest and magnificent spread of tail, which, by the way, is not a true tail, but a development of the tail coverts or side feathers. They are wild in their habits, and the hen hides her nest, laying from five to nine eggs usually, but sometimes more. The incubation period corresponds with that of the turkey nearly, being twenty-eight to thirty days. The hen cares for her brood until they are six months old, and they want special protection, with animal food. While this bird is ornamental entirely, its flesh when not over a year old is very good. One cock will look after three hens. Besides the ordinary variety, there are the White, the Pied, the Javan and the Black-Winged. The most interesting of these is the Javan, which is much

larger than the common variety, and sheds his long tail at the close of the breeding season, appearing at other times with a green tail with gold reflections, very handsomely barred with whitish brown. He has a very high crest, is blue around the eyes, and his neck feathers look like scales.

PART II.

DESCRIPTIONS OF BREEDS

For better understanding of the different breeds, the PRATT FOOD CO. publishes several official charts of fowls, correctly illustrated as to feathering, coloring, etc. See coupon in every package of Pratts Regulators.

ANCONAS

Are similiar in size and shape to the Leghorns. These are fairly good layers of medium size eggs. The color of plumage is black and white, evenly mottled. shanks and toes yellow.

ANDALUSIANS

The hardiest of the Spanish breeds; very useful and handsome. Sometimes known as Blue Spanish, by reason of color, which is slate-blue, laced in some cases with a darker shade. The male bird's plumage is dark blue, or nearly black, on the neck and back. The face is

bright red; the ears, white. The body is small and compact; the legs, clean and longish; head fine, with long neck; comb large, upright and single, falling to one side in the case of the hen. Tail feathers and neck hackles very dark blue, almost black. The most troublesome faults are feathers of other colors among the slate. Andalusians are good layers and non-sitters. The eggs are large and white. The birds make a good table fowl when young. They are hardy and thrive on dry soil. Select for size and erect carriage.

BANTAMS

Bantams exist in great variety, and are artificial birds entirely. Their beauty is their chief value. They are useful, however, in the gardens, to keep down slugs and insects. Their eggs are tempting to invalids, and may be easily cooked by pouring boiling water over them. Bantam chicks need more animal food than other breeds, and should be kept dry, with extra care during the first fortnight. In general, feed scantily to keep down the size.

GAME BANTAMS

The hardest breed of Bantams. Points exactly the same as in Game fowls, from which they originated. Very courageous and strong. Varieties are Birchen,

Black, Black-Breasted Red, Brown Red, Golden Duck-Winged, Red Pyle, Silver Duck-Wing and White.

JAPANESE BANTAMS

The Japanese Bantam proper has a single and upright bright red comb; short body; clean, short legs; upright or squirrel tail. The varieties are: Black-Tailed, White and Black.

COCHIN BANTAMS

This is a very rare and remarkable breed, deriving its name from the fact that the first pair was stolen from the summer palace at Pekin. The Buff Pekin is an exact copy in miniature of the Buff Cochin fowl, for description of which see page 127. The other varieties are Partridge, White and Black.

SEBRIGHT BANTAMS

The plumage of the Sebright Bantam is very compact, and every feather is laced all around the edge with black. The comb is a rose of bright red, with spike behind, pointing upwards. Face, red; eye, bay color; ear, white or bluish white; shanks, blue. The cock is a fighter and full of conceit—throwing his head back nearly to his tail, drooping his wings half-way down his legs, and fid-

geting about as if always spoiling for a quarrel. In the Golden Sebright the ground color of the feathers is a rich golden yellow; in the Silver Sebright the ground is pure silvery white. The lacing, in both cases, is clear black.

BLACK AND WHITE BANTAMS

In the Black Bantam the plumage is perfectly black and lustrous. In appearance the bird is simply a diminutive Black Hamburgh, with a full and well-arched tail, short, clean legs, colored black or blue; bright red rose comb; face, red; ears, white.

The White Bantam is like the Black in all points except the color of the plumage, which, instead of being black, is pure white. Red ear lobes are preferable to white, setting off the spotless white of the feathers to great advantage.

BRAHMA BANTAMS

are of two varieties, Light and Dark and Polish Bantams, White-Crested White and Buff Laced.

BRAHMAS

This is a favorite breed of Asiatic origin, and full of merit. The principal peculiarity is the comb, which looks like three combs laid side by side, the middle one being

considerably the tallest. Each of the three should be straight and regular; and the triple comb is just as apparent in the hen, although smaller than in the case of the cock. The neck hackle of the cock is very full, and flows gracefully over the shoulders, which are flat and wide. The saddle rises higher, merging into the tail, which is nearly upright, and spreads considerably. The breast is full and deep. The plumage is not so fluffy as that of the Cochin, and the bird has a squarish appearance. As to leg feathers, see the description of Cochins, which will apply also to Brahmas in this respect. The size is very much the same; but some Brahmas have been known to weigh seventeen or eighteen pounds.

LIGHT BRAHMAS

The ruling color in Light Brahmas is white, but, in the case of the cock, the hackle is striped plainly with black. The leg feathers are white, mixed with black or gray, and the tail feathers are black. The hen has a white fluff; but she is marked black on the hackle and between the shoulders.

When not too heavily fed on carbonaceous material, such as corn, the Light Brahma hen proves to be an excellent layer, her egg is of large size and dark brown in color. They are especially recommended as winter layers. The breed is very hardy, and of a quiet disposition; they can be enclosed by a two-foot wire netting fence. At eight to ten weeks old the young make very desirable broilers, and at six months old are strictly first-class roasting fowls.

DARK BRAHMAS

The head of the Dark Brahma cock is white; the hackle is also white, striped with black. Back, white, marked with black between the shoulders; saddle, white, with black stripes; breast, fluff, and underparts deep black; tail coverts fill up gradually with green-black as they near the tail, which is green-black with a fine gloss. The wings are white on the shoulders, with traces of black; the coverts cross the wing in the shape of a bar of glossy green-black. Nothing but clear white or dense black is found in the perfect bird. In the hen we find white and black-penciled hackles. The other plumage is

light iron gray, with dark pencilings. The breast is penciled like the back, likewise the leg feathers and the fluff.

BRAHMAS FOR BREEDING

Birds for breeding must be chosen with especial reference to the points which are sought to be brought out in the strain. The cock must have a perfectly black breast. All the under parts must be dense, and the hackles pure in color. The hackles of the hen should be sharply and darkly striped. In breeding for pullets, let the hen have dark hackles, feathers well penciled and not streaky; choose a cock bred from just that sort of a hen. He must have broad, well-marked black stripes in neck and saddle hackles, and will not be hurt by a white spot on end of breast feathers, or a whitish edging to the fluff, as is often found. In both breeds of Brahmas ear lobes are large and red, falling below wattles; head and beak short; expression, lively; legs yellow, the tint being towards orange in the dark breed.

QUALITIES OF BRAHMAS

Brahmas are paying fowls. They lay wonderfully, are good sitters and mothers, are docile, thrive on any soil except a very wet one, do not need large Runs, and will not fly a three-foot fence. The flesh is good, and is

deep on the breast. The pure breed is not very desirable on the table if over six months old; but crossing with the Houdan, Crevecœur, or Dorking, will produce large, hardy birds, and an abundance of good flesh.

THE ORPINGTONS

The Orpington breeds were originated by the late William Cook, of Orpington, Kent County, England, from which they derive their name. They were introduced into this country about fifteen years ago. The varieties consist of the Rose Comb and Single Comb Blacks, the Rose Comb and Single Comb Whites, the Rose Comb and Single Comb Buffs, the Rose Comb and Single Comb Diamond Jubilee, and the Rose Comb and Single Comb Spangled. It is claimed for the several varieties that they are not only excellent layers but produce a superior carcass both as a broiler and as a roasting fowl. The class show deep bodies, full, heavy breasts and short, thick thighs. Taking after the English fashion their skin is white, the shanks a sort of pinkish-white. In weight they run as high as ten and a half pounds for cocks, and eight and a half for hens.

COCHINS OR SHANGHAIS

The Cochins, which is also an Asiatic bird, has a remarkable history. The birds first appeared in England about 1847, and at once attracted great attention. In fact, they became a perfect craze, and the prices paid were enormous. Cochins were presumed to be perfect in all respects; but a better acquaintance with them, and perhaps the natural effect of such extraordinary first favor, has caused them to lose repute.

SHOW COCHINS

Weight, eleven pounds for the cock; eight and one-half for the hen; neck, short; hackle flows wide over a very short and broad back, rising abruptly into a broad saddle, in the case of the cock, and a full cushion in the hen, in which her tail is almost buried. In fact, it looks as if there were no back at all. Body, short and deep; legs very short, and set wide; breast, broad and full; shanks feathered down the outside to the ends of the toes; thighs well covered with soft fluff; tail, small and low; head, small and neat; comb, single, small and regular; ear lobes, red; bay or dark red eyes, general appearance lumpy.

BUFF COCHINS

Buff Cochins range in color from very pale buff to dark cinnamon. The plumage should be uniform always; but in the cock the tail is darkest, with perhaps a little black in it. Legs, yellow or with a tinge of red.

PARTRIDGE COCHINS

In the case of cock Partridge, the breast and under parts are black; the head, hackle and saddle, orange-red, with black stripes; tail, black; wings, red and bay, barred across the middle with bright green-black. In the hens, the hackle is also orange striped, but the other plumage is a light brown ground with dark brown pencilings; legs, dark yellow.

WHITE AND BLACK COCHINS

White Cochins are perfect only when every feather is pure white, and the shanks clear yellow. Black Cochins are uniformly black, including the legs.

QUALITIES OF COCHINS

Some condemn Cochins utterly, except for the purposes of exhibition; but they are good layers, and are noted sitters, although they are too often broody when they ought to be caring for their chicks. They are hardy and easily raised, and make reasonably good eating when young. They fatten quickly, and must not be overfed. They are not much of a table fowl, unless crossed with the Dorking or Crevecœur.

CREVECŒUR

This well-known fowl is of French origin. It is very short in the legs, especially the hen. The cock averages seven and one-half to eight pounds in weight, but has been known to reach ten. These birds are very quiet, and bear confinement contentedly. They are full and compact in form; comb, in shape of two horns, and a crest red in color; throat, bearded and whiskered; plumage, black; legs, black and clean; face, red. The eggs are large, and the flesh of the fowl exceedingly fine. These birds are delicate, but will thrive if given plenty of run.

DORKINGS

The Dorking is an English bird, and a great favorite at its home. It has a deep, full body, with plump, protruding breast, especially in the cock; back and breast, broad; general appearance, square and plump, but compact; legs, white, or with slight rosy tinge; there is a double or fifth toe, the spur turning upward. Wattles, large and pendent; short, taper neck; full hackle.

COLORED DORKINGS

The Colored Dorking weighs considerably more than the other varieties. The color varies, the cock's breast being in some cases black and in others speckled, with color on the back and sides, and hackles lighter or darker. The hen is brown or black, speckled with gray, or a darker color. The comb may be either single or double. When single, it is large and perfectly erect.

WHITE DORKINGS

White Dorkings are usually smaller than the colored. The plumage is pure white, although in the cock there is a tendency to cream or straw color on back and wings. The comb is double or rose comb, broad in front and raised to a point behind. White Dorkings look smaller than they really are, and in fact weigh more than a Silver Gray of apparently larger size.

SILVER-GRAY DORKINGS

In the Silver Gray the cock's breast is pure black; tail and larger coverts black, with metallic luster; head, hackle, back and saddle, silver white; wing, white, barred with black across the middle. The hen has a salmon-red breast, shading off to gray at the thighs; head and neck, silvery gray with black stripes; wings, gray; tail, dark gray, shading into dark brown or black inside; back, silver gray, or light gray. This bird is very handsome, and has a clean and high-bred appearance.

QUALITIES OF DORKINGS

As a table fowl the Dorking is unsurpassed. The meat is fine and abundant, especially on the breast and wings. The hen is a good sitter and mother, but not much of a layer, except when young. The breed is delicate, and needs dry ground and unlimited range. Dorkings should not be hatched too early, as damp and cold weather is dangerous to the chicks.

GAME

Game fowls have changed in appearance since the days when they were bred for fighting purposes. As at present recognized the head of the cock has a snaky appearance, with a long but strong bill, prominent eyes, and fine, smooth red skin. The ears are red; the neck, long;

hackles, very short, without spread; the back, flat and wide, narrowing gradually towards the tail; breast, broad and full; stern, narrow and well held up; the tail is a "whip," being narrow and short; wings, large and strong; legs and thighs, long; shanks, firmly set and cleaned scaled; toes, flat on the ground, and spurs low; the body feels hard to the touch. The hen may be described in pretty much the same language.

BLACK-BREASTED RED GAME

In the Black-Breasted Reds the cock is described thus: Neck hackle, bright orange; saddle, about the same; back, red; breast, thighs and under parts, deep black; tail and wing bar, black. In the hen the hackle is gold, with black stripes; breast, reddish fawn or salmon red, lightening to gray on the thighs; wings, back and upper tail feathers, brown, with fine partridge marks; legs of both cock and hen are olive or willow color, and the eyes are bright red.

DUCKWING GAME

In the Golden Duckwing the face of the cock is red and the head white, but lower down the hackle runs to a straw color. The saddle is also straw color or yellow; the

wing bow, shoulder coverts and back, are a light orange or gold; a blue-black bar crosses the wing; the breast, tail and under parts are black. In the hen the head is silver gray, and the hackle is the same, with black stripes; the breast is salmon color, lightening to gray on the thighs; other plumage, dark gray, penciled over silver gray, giving a silvery or frosted effect. Legs in both, willow; eyes, red and bright. The Silver Duckwing is very similar, substituting silvery white for the straw color in the cock, and lighter shades in the hen.

BROWN-RED GAME

Brown-Reds have a glossy green-black for a general color; on the breast each feather is laced with lemon or gold; hackles, lemon color with black stripes; back and shoulder coverts, lemon; legs of both sexes, very dark willow; eyes, dark brown; faces, deep purple.

PYLE GAME

Pyle Game is like Black-Breasted Red, reading *white* instead of *black* in the description on page 141. Legs, yellow or light willow. Other Games are Birchen, White and Black.

ORIENTAL GAME

are White and Cornish Indian Games, Black-Breasted Red, Malay and Black Sumatra.

QUALITIES OF GAME

Game fowls are noted as layers, except the Black-Reds, and the eggs are small. They are good sitters and mothers, and the flesh is fine. Crossed with Dorkings, the result is a very satisfactory table fowl. Being so fond of fighting, it is the custom to dubb the cocks—that is, cut off their comb and wattles close to the head—when they are about six months old, otherwise they will punish each other severely before they can be separated.

HAMBURGHS

Hamburghs are small in size; have handsome plumage; brilliant comb, square in front, with upright spike behind; bright red face and blue legs.

SILVER-PENCILED HAMBURGHS

Silver-Penciled Hamburghs are small but graceful, the cock especially carrying himself very vainly, bearing his tail high, with a pretty curve; comb, full of points, and no hollow in center; ears, white. Pure white is the predominating color; but the cock's tail is black, with green glossing; side and sickle feathers, black, sharply edged with white; wing coverts sometimes marked with black, with a faint narrow bar across the wing, which is edged with black. The hen's hackle is pure white, the rest of the body white, with each feather penciled across the bars of black; tail feathers penciled in the same way.

GOLD-PENCILLED HAMBURGS

Same as Silver-Penciled except that ground color is not white, but golden bay. Cock's tail, black, with bronze edging on sickle and side feathers, or bronzed all over.

GOLD AND SILVER-SPANGLED HAMBURGHS

The distinctive marking of the Spangled Hamburgs consists of a black spangle or moon at end of each feather. In the Gold-Spangled the ground color is golden bay; hackle feathers, streaked with greenish black; tail, black; spangles, large and regular. Cock has two bars of regular spots across wing. In the Silver-Spangled Hamburg ground color is silvery white, and tail differs from the Golden in hen, being silver white with black moons at tips. In both sexes spangles on wing covert feathers form two regular black bars across wings.

WHITE AND BLACK HAMBURGS

White Hamburg is pure white, and Black Hamburg glossy black all over. Are apt to be larger than other varieties. Have characteristic rose comb, blue or lead-colored legs, and bright red face common to Hamburgs.

QUALITIES OF HAMBURGHS

Hamburgs are non-sitters, but good layers, except the Gold-Spangled. They are very erratic and seek a

wide range, flying almost any height fence. Eggs large, especially in the case of the black variety; flesh, good, but scant, by reason of the small size of the bird.

HOUDANS

Houdans are a French breed, but are very much like Dorkings, with large and compact body, shortish legs, and fifth toe. The bones are, however, smaller. Plumage is mixed or speckled black and white. Wattles nearly concealed by whiskers; comb, very distinctive, looking like two parted book leaves, with a feathered crest behind it.

QUALITIES OF HOUDANS

Houdans are hardy and lay well. Very fine as a table fowl. Eggs very likely to be fertile from the great activity of the cock, who requires a well-stocked harem.

JAVAS

Javas are similar in size and other respects to Plymouth Rocks. The cocks weigh $9\frac{1}{2}$ pounds and hens $7\frac{1}{2}$ pounds. The varieties are Black and Mottled.

LA FLECHE

Another French breed, but resembling the Spanish. The body and legs are large and long, the plumage close

laid and dense, legs slate color, plumage black with green reflections, comb two-horned, like the Crevecœur, with two small points also in front of the nostrils, and bright red in color. Wattles are bright red, and hang down very long; ear lobes dead white and very large, sometimes meeting under throat; carriage bold and smart.

QUALITIES OF LA FLECHE

The La Fleche is a good layer, eggs large and white, non-sitter; flesh fine and white, but legs dark. Capons are produced from this breed in France.

LANGSHANS

Langshans are a Chinese importation, and supposed to be related to or derived from Cochins, although this has been denied. Langshans are large birds, with long legs feathered, tail well furnished and carried high, scanty fluff, breast full and prominent and good outline, plumage close and glossy. Varieties are Black and White.

QUALITIES OF LANGSHANS

Langshans are good on the table and hens lay well, but are not greatly disposed to sit. Make good mothers, however, and the fowl is hardy and easily raised.

LEGHORNS

Leghorns are somewhat small in body, but very compact, and of sprightly and pleasing appearance. Have single combs, quite large, deeply toothed, and running down over the back of the head. The rose comb is also seen in the brown and white varieties. The wattles are long and pendent; ear lobes, white; beak, yellow; legs, same color, and clean; hackles, full; tail of cock, sweeping. The hen's comb falls in a single fold to one side.

WHITE LEGHORNS

White Leghorn's legs are bright yellow, face red, plumage entirely white; comb either rose or single. Brown Leghorns much like white in shape and size, but plumper.

BROWN LEGHORNS

The hackles of cock are golden bay with black stripings; back is red with a stripe of brighter bay on each feather; breast is black and full; wings dark red, barred with bay and green black; tail, black and quite long. Hen has light brown breast; yellow neck hackle, striped with brown; back, brown, slightly penciled.

BLACK LEGHORN

There is also a Black Leghorn, in which the plumage is black; the beak and legs are, of course, dark. The other varieties are Buff and Silver Duck-Wing.

BUFF LEGHORNS

Similar in size to the White variety, only having a rich, deep, clean buff color. Excellent layers.

QUALITIES OF LEGHORNS

Leghorns are astonishingly good layers, especially the Whites. Are hardy and precocious, laying and breeding early. As a table bird they are not notable.

MALAYS

Malays are of Asiatic breed, but are very different from Cochins. They stand up straight, and are very long in neck and legs. The wings protrude at shoulders, and are carried high. The body narrows towards the tail, which is small, and that of cock droops. Viewed in profile, the neck, back and tail make up three convex curves, descending at an angle. Shanks and thighs are large. Feathers are narrow and glossy, and sit close. The coloring varies, white being found, but the most usual being like the Black-Breasted Red Game. Beak is long and hooked, head also long; comb, lumpy; wattles small, with small deaf ears; eyes, white or yellow; overhanging eyebrows; head and throat snaky looking; legs, yellow and clean, with very large scales.

QUALITIES OF MALAYS

Malays need plenty of run and vegetable food, as they are addicted to feather eating. Are hardy when grown, but delicate as chicks. Make a good table fowl, and cross well with Dorking, Spanish or English Game. They do not lay well, and are exceedingly quarrelsome and ferocious, especially in confinement.

MINORCAS—BLACK AND WHITE

Minorcas, sometimes called Red-Faced Spanish, look much like the Black Spanish, but with red faces, larger combs and shorter legs. Also resemble Leghorns, but have a larger comb. There are White and Black Minorcas, but latter are most common. Plumage is metallic black and very handsome. They are larger than the White-Faced Spanish, and cock will weigh eight or nine pounds. Ear lobes are white, the legs clean.

QUALITIES OF MINORCAS

Minorcas are very good layers, are precocious and hardy, and do not sit. Thrive well under all conditions.

POLAND OR POLISH

Polands, or Polish fowls, probably include Crevecoeur, Houdans, and perhaps La Fleche, and those de-

scribed below. They comprise all varieties of tufted or crested fowls; comb is of a two-horned character, but nearly invisible in the Polish breeds.

WHITE-CRESTED BLACK POLISH

The most commonly known variety of Polish is the White-Crested Black. Cock carries himself boldly and gracefully, with neck thrown back. Comb almost invisible; wattles, bright red and full; ear lobes, pure white; body plump and short; legs short, and black or lead-blue in color. Plumage, black, with bright reflections on tail, saddle and hackle. Crest, theoretically, pure white, but hardly ever found without some black feathers; in shape the crest is regular, large and full. Cock weighs five to six pounds. Hen's color is a rich black, her crest white and globular. She weighs four to five pounds and is plump and compact. This breed is rather delicate.

OTHER VARIETIES OF POLISH

Other varieties are Golden, Silver, White, Buff-Laced, Bearded Golden, Bearded Silver and Bearded White.

QUALITIES OF POLISH

Polish fowls are quite hardy, but subject to colds, and must be carefully sheltered in wet weather. They lay well and are non-sitters. Excellent on the table.

PLYMOUTH ROCKS, BARRED WHITE AND BUFF

Plymouth Rocks are a popular American breed, which probably originated in a cross of Dominique and White Cochin. The comb is straight and single and the head is fine. The legs are without feathers, and bright yellow in color, which is also the color of the beak. The shape is an improvement on the Cochin, but much resembling it. The plumage is pure cuckoo gray, barred with dark bands of almost black or blue gray, broad or narrow, according to the taste of the fancier. There is also a white variety, in which the plumage is pure white. The Buff variety is a clear buff, uniform in shade except the tail, which is deeper in color.

QUALITIES OF PLYMOUTH ROCKS

Plymouth Rocks are good layers of small eggs; good table fowls; good sitters and mothers; hardy, thriving on any sort of soil, and bear confinement well. They grow more rapidly and earlier than any other breed.

REDCAPS

Redcaps are a large type of Hamburg, with a large rose comb. Cock weighs $7\frac{1}{2}$ pounds and the hen $6\frac{1}{2}$ pounds. They are good table fowls and fair layers.

RHODE ISLAND REDS

This breed is springing to the front. It originated on farms in the State of Rhode Island, where it came to notice on account of its remarkable laying and excellent table qualities. In size the breed compares with the Plymouth Rocks. There are two varieties, the Single Comb and the Rose Comb. They are very hardy fowls.

SILKIES AND OTHER BREEDS

Other breeds are Silkies, a fancy breed, the feathers of which hang loose like fibers of silk or wool. The skin is very dark. Rumpless fowl, have entire absence of tails. Black Sumatras are at the present time very seldom bred. Frizzles are a bird with feathers turned back towards the head. Two new breeds lately introduced are the Buckeyes and American Reds. American Reds are similar to Rose Comb Rhode Island Reds.

SULTANS

Sultans are probably a variety of Polish fowls, but differ very much in appearance from the varieties above described. They are very small, the cock weighing only four to five pounds. The plumage and crest are white; legs short, and feathered down to the toes; thighs well furnished and vulture hocked; tail full and flowing; muff and whiskers around the throat. The crest is more erect than in the other varieties, and the comb is two small spikes in front of the crest. Legs whitish, and furnished

with a fifth toe. Sultans are favorite pets, and present a quaint and pleasing appearance.

BLACK SPANISH

The only recognized breed of Spanish at the shows is the White-Faced Black Spanish, other varieties having no settled names. The leading point of the breed is the white face, the quantity and quality of which determine the rank of the bird. It should be wide, deep and high, should arch at the top, coming as near as may be to the bottom of the comb; extend sideways to the ear lobes and wattles, and meet under the throat. It should also be fine and smooth. Ears white, large and pendulous; comb very large, and colored bright vermilion; the cock's must be perfectly upright, the hen's falls to one side. The comb should be fine, although large, and the tothing should be very even. The cock has a very stately carriage, with protruding breast, and tail held up, but not forward. Plumage jet black, with glossy reflections; sickle feathers, fully developed and perfect. The hen is equally black, but less glossy; body heavy and plump; legs long, and blue or dark lead color.

QUALITIES OF SPANISH

Spanish fowls are very delicate as chicks, and at all ages are susceptible to wet weather, especially when moulting. They lay well, but are poor table birds.

WYANDOTTES

An American bird of six varieties—Golden, Silver, White, Black, Buff, Columbian and Partridge. They are large, rose-combed, yellow-legged (clean); plumage laced or striped, except in the white, which is white all over. The Wyandotte is a very handsome and hardy bird. They lay well, grow fast, and are a good table fowl—in fact, an ideal fowl for both fancier and farmer.

COLUMBIAN WYANDOTTE

A new variety of Wyandotte was a few years ago placed before the poultry world, and is rapidly forging its way to the front. It is known as the Columbian Wyandotte. In plumage it is like the Light Brahma; in shape, style of head, comb and shanks, it is purely Wyandotte; and in size, activity and wonderful laying qualities, it is Leghorn. It is a most valuable combination breed. Records kept by a well known breeder, who breeds them along with other varieties, shows that the Columbians are more destined to remain in the 200-egg class than any of our American breeds. As chicks and fowls they are very plump. Their breasts are round like that of a squab-pigeon. They are of a more nervous disposition than are any of our American breeds, in which they closely resemble the Leghorn. As sitters and mothers they cannot be surpassed.

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