

POULTRY.

External Parasites of Poultry.

Practically all poultry are attacked by certain species of parasites. This infestation causes more loss to poultry-raisers than most of us imagine. Birds are seldom examined closely enough to detect the presence of parasites, unless these are present in large numbers. It is probably the irritation produced by these creatures, as much as the actual loss of blood and skin, that causes the poor condition of the birds. The parasites common on poultry may be divided into three groups: (1) Fleas, (2) lice, (3) mites. Fleas and lice are true insects having six legs, the same as all insects, but they belong to different orders. Mites are not insects, since they have only four legs.

Most mites work chiefly in the summer. An article on the ravages and means of control of the common red mite appeared in a June issue of "The Farmer's Advocate." A variety of mite that causes much trouble both in winter and summer is the Scaly Leg Mite, producing the disease known as "scaly leg." This mite hides under the natural scales on the legs, and the irritation produced results in the formation of the scaly growths.

Treatment.—First clean the house, and use liquid lice-killer freely about the roosts, etc., to prevent the spread of the disease. To effect a cure, use an ointment composed of one teaspoonful of coal oil mixed with a cupful of lard. Rub some of this well into the scales several times. Another method is to dissolve as many naphthalene flakes as possible in some coal oil, and then dip the bird's legs into the solution every two or three days until the scales are easily removed. Three or four applications are usually sufficient to cure the worst case.

Fleas belong to the same order as the common fly. They feed on blood, but only one species, the bird flea, lives continually on its victim. The common hen flea thrives in muddy runs and straw nests, and so is not likely to be troublesome in the winter time.

There are eight or nine species of lice attacking the bodies of poultry. They resemble one another in appearance, but every variety but two has a particular region that it frequents, and it is seldom found away from the preferred location. The two varieties that are exceptions have no special feeding-ground, and are known as wandering lice. They are, however, most common among the fluffy feathers of the abdomen. They travel from fowl to fowl at night, and sometimes get onto human beings handling the birds. The other species favor the head, neck, rump, under the wings, and the abdomen, chiefly.

Lice have not piercing mouth-parts, and do not, as most people suppose, suck the blood of their victims. Their mouths are constructed for biting and chewing, consequently sucking blood would be impossible. They chew and bite the feathers and the scales of the skin, causing so much irritation by their running around and scratching the skin with their sharp claws and jaws that the fowls often become sick. Lice spread quickly from an infested bird to the rest of the flock, and may also carry disease germs with them. Lice are most fatal to chickens, but practically every mature bird is more or less infested with lice. An odd louse or two on the birds need not cause any worry, but where present in considerable numbers, remedial measures should be taken. It requires a quick hand and eye to detect lice, if present only in small numbers; hence, if a farmer can find lice quite readily, they are in all probability rather numerous. The fact that fowls are infested, even when the owner thinks they are free from vermin is generally proven when the birds are killed and plucked.

Prevention.—A dust-bath is one of the best means of keeping the pest in check. The bath which hens seem to enjoy most is fine, soft, slightly-moistened earth. If a box of this is placed in one corner of the house, they will dust themselves so frequently that the parasites are made very uncomfortable, and will seldom prove troublesome.

Remedy.—By dusting every bird carefully with insect powder, preferably one containing considerable tobacco dust, they can be cleared of vermin, but a homemade insecticide is usually cheaper and equally effective. One good powder is composed of 1 ounce strong carbolic thoroughly stirred with 1 peck of freshly air-slaked lime. Another good dusting powder is made of equal parts of sifted coal ashes and tobacco dust, with a small quantity of any strong liquid lice-killer that will thoroughly mix with the ashes and tobacco dust.

In using these powders, it is necessary to work them well into the skin, so as to smother the lice. The applications will have to be repeated several times, at intervals of about a week to destroy the young lice that hatch from the eggs or nits about a week after they are laid. Liquid lice-killer should also be used on the roosts and

the dropping-boards to prevent the lice spreading to any untreated birds.

All parasites flourish most on unhealthy birds, and when a bird is seen to be in an unthrifty condition, it ought to be examined and treated carefully. They also flourish in damp, dirty, dark, badly-ventilated quarters, and when the birds receive too uniform or insufficient food. Therefore, remedying bad existing conditions is essential.

The poultry-keeper will find that, by keeping the pens and roosts clean, and by preventing the inroads of vermin, his birds will grow and fatten more quickly, will require less food, the hens will lay much better, and his profits will be larger.

Middlesex Co., Ont.

C. W. S.

Laying and Breeding Stock.

THE SELECTION AND CARE OF BREEDING STOCK.

The poultry industry has made rapid progress during the last few years, and has already taken its place as one of the great branches of Ontario agriculture. Statistics collected by the Bureau of Industries show that in Ontario, during the year ending June 30, 1911, over 5,000,000 birds of various kinds, but principally chickens, were sold or killed. This was an increase of nearly 850,000 over the preceding corresponding year.

In past years, the breeding of chickens has been carried on in a very unscientific manner—a practice that has been the source of much loss in poultry-keeping. The usual practice is to allow two or three males to run with the whole flock throughout the entire year. Occasionally one of them is traded with a neighbor for another one of different strain. The result is that many more eggs than are needed for hatching purposes are fertilized, but often very poorly. This state of affairs accounts for many of the weak, puny chickens hatched, as well as for the unfertilized eggs, or those containing dead germs.

In exhibition birds, most of the attention is devoted to appearance. In general-purpose or utility stock, constitution and performance should be the important consideration. For this reason a high-priced exhibition bird is not always a valuable requisition to a flock intended to produce eggs and meat. On the other hand, the practice of not introducing any new blood, or very little is likely to prove much more disastrous. For the ordinary farmer, who is not an experienced or efficient poultry-judge, the process of in-breeding, or the continued breeding together of near relatives—for this would be the result if new strains were not secured—is not to be recommended. In-breeding intensifies the good qualities of a particular strain, but it acts similarly with the weak and undesirable characteristics. Consequently, if the male or females are weak in constitution, the vigor of the offspring will rapidly deteriorate.

The more advisable course would be to buy a first-class bird from some breeder or farmer who has reliable utility stock of the desired breed. If the farmer who intends paying some attention to the poultry side of farming has a nondescript flock of mongrels, it might pay him to buy several settings of good eggs in the spring, and to replace his mongrels directly by pure-breds, and buy a cockerel or two for the next year.

Whatever be the course adopted or the breed selected, several points hold good in the selection of birds for the breeding pen, if the results are to be satisfactory:

1. All birds must be well matured in growth, healthy, vigorous, and free from hereditary weaknesses.
2. The birds, both male and female, should be of medium size for the breed. The large, coarse birds are not the best, as a rule. The male is generally a couple of pounds heavier than the female.
3. They should be of the low-set, blocky type, with short, straight legs, set well apart; full breast, broad back; short, stout, curved bill, and bright-colored eyes.
4. They should have light-colored legs, free from coarse scales and stubs.
5. They should be of a uniform shape, and pure-bred, if possible.

The male bird should have strong masculine characteristics; that is, he well spurred, always ready to fight any intruder to a finish, very gallant and attentive with the females in his charge, and always dancing and showing himself off. His plumage, especially the hackle, saddle and tail-feathers, should be rich and abundant, and his crow loud and clear, indicating good lungs.

The hens, on the other hand, should have an entire absence of masculinity. A "cocky" hen, or one on which spurs are noticed, seldom makes an egg record that would justify keeping her, much less giving her a place in the breeding pen. From ten to fifteen promising-looking females, chosen from the flock, should be mated with the best male obtainable—the number of hens depending on the activity of the male. The birds are mated twelve or fourteen days before the eggs for

hatching are required. The birds for breeding should have particular attention during the winter, but the hens should not be expected to lay heavily, as the first eggs laid are considered preferable for hatching. They should have dry, bright, well-ventilated houses at all times, but particularly during the winter.

If convenient, when the weather becomes warm, the breeding pen may be housed in a colony house and placed away from the rest of the flock, where they can obtain plenty of outdoor exercise and animal food, without any expense for fencing or animal and vegetable food.

In securing fertile eggs containing healthy germs, the fowls must have (1) exercise either in an outdoor range or in bright, dry scratching pens, the floors of which are covered with three or four inches of chaff or clover; (2) three meals a day in cold weather, two in warm. The third meal usually takes the form of a mash, preferably of mixed meals, table scraps and a little skim milk. In the absence of milk, use water. Mixed grains, oats, wheat, corn, barley, buckwheat, etc., scattered in the litter, constitute the other two; (3) animal food—scraps, green-cut bone, liver—should be fed in small quantities every other day; (4) vegetable food—mangels, turnips, alfalfa, cabbage—should be fed every day. When on a range in the spring, this, as well as much of the animal food, will be picked up by the hens. (5) Grit—coal ashes, sand, broken crockery—and shell-forming material—lime, broken plaster, oyster-shells—should always be before the hens. (6) The hens should be kept in moderate flesh; an overly-fat hen will seldom lay. Grain goes chiefly to produce heat and fat, hence the need for vegetable food, if eggs are desired.

Middlesex Co., Ont.

APIARY.

Co-operative Experiments in Apiculture.

At the annual meeting of the Ontario Experimental Union, Morley Pettit, Provincial Apiarist, O. A. C., Guelph, presented a report on "Co-operative Experiments in Apiculture," of which the following is a summary:

During the season of 1911 the following co-operative experiments were sent out:

1. The prevention of natural swarming in the production of extracted honey.
2. The prevention of natural swarming in the production of comb honey.
3. Races of bees—general.
4. Races of bees—with reference to their power to resist European foul brood.

The materials for No. 1 and No. 2 were circulars describing improved methods of management by which the natural swarming of bees could be greatly reduced, if not prevented entirely. The material for No. 3 and No. 4 were queen bees of improved races, sent to experimenters for testing.

In reference to European foul brood, which is causing thousands of dollars' damage by the destruction of bees, and the consequent loss of honey, fruit and seed in Welland and in some of the Eastern counties, it is well established that certain races of bees are better resisters of this disease than others. Some few strains of Italians have been found by experts to be practically immune. Others are good honey-producers, but have not been tested in this respect. Experiment No. 4 was sent out for this purpose, and will be reported on next year.

The Prevention of Swarming.—This experiment was very successful, as the experimenters were able, by the method taught them, to reduce natural swarming, with all its attendant loss and inconvenience, from 70 per cent. to 24 per cent. of the number of colonies kept. At the same time, the average crop of honey was increased by 11 pounds per colony. This means that, if the 991 colonies, spring count, owned by the experimenters had all been managed according to directions, their honey crop would have been increased more than 10,000 pounds in the aggregate. The increase of colonies by natural swarming cannot be counted on the other side of the sheet, as this could be made artificially, if desired, without extra expense.

Educational Value.—Numerous notes of appreciation were received from experimenters, stating the great benefit they had derived from the work. Experiments in these and other lines will be continued during 1912.

Abreast of the Times.

Enclosed find remittance for two subscriptions for one year, my own renewal and a new subscriber. "The Farmer's Advocate" is the best farm paper yet. Could not get along without it now, as it is always abreast of the times. The Christmas Number is a great credit to any publisher—the best yet. Wishing your paper every success for 1912. JAS. BRECKENRIDGE, Oxford Co., Ont.