

Our Poultry Corner

If you have some things you do not understand in connection with your poultry and want some information, state your case briefly and to the point, writing on one side of paper only, and address it to THE MONITOR PUBLISHING COMPANY LIMITED, we will submit it to Prof. Landry, and when his answers are received we will publish them withholding your name if you so desire it.

BLACK HEAD IN TURKEYS

(By George Robertson in Canadian Countryman)

Reference has been made from time to time in the Poultry Department of this paper to turkey troubles but during the past few weeks so many letters have been received, somewhat like the following, that the subject is again referred to:

"Can you tell me what to do to save my turkeys, I have a fine flock of poults, did not lose any until a few days ago, but they are dying off now sometimes one, sometimes two or three a day. They appear to be in good health up to within a day of dying and sometimes they never appear sick at all. I have given them the best of care and I don't want to lose them. I fed them hard boiled eggs and bread crumbs and all the cracked corn and what they would eat, as well as sour milk. I opened one this morning and noticed that the liver was all spotted. Would that be the cause of the trouble? What is it and what should I do?"

The trouble is undoubtedly Enteritis Hepatitis more commonly known as Black Head. Unfortunately experts can be of little assistance to the novice in the matter. Investigational work has been carried on for upwards of 25 years at some of the Experiment Stations, but as yet nothing definite has been settled.

Dr. Higgins, Dominion Pathologist author of Bulletin No. 17, Enteritis Hepatitis or Black Head in Turkeys, and who has probably given more study to this disease than anyone else in Canada, does not make any positive statement as to how the disease is spread, but in his writings he leans to the idea that it is an infectious disease, which may be transmitted either by direct contact with affected birds or by contact with ground on which infected stock has run. On the other hand, Philip B. Hadley of the Rhode Island Experiment Station—and which station has given more attention to the study of Black Head than any other—takes the stand that the disease is practically one of improper feeding. In this connection he writes: Black Head is not a communicable disease. It is not caught from other birds; it is not caught from infected soil. It is a disease of captivity, of management. The chief cause is ninety-nine per cent of cases—is improper feeding. Improper feeding in the average case means overfeeding. The feeding of turkeys must be regarded merely as supplementary to what is obtained on the range, and the amount must be adjusted accordingly.

Dr. Higgins has used muriatic acid in the drinking water with beneficial results. In this connection he says: "I was first prompted to use this acid as I found the contents of the digestive tract in turkeys dead of Enteritis Hepatitis or Black Head to be more alkaline in reaction than is usually observed."

The acid to be used is a teaspoonful in a quart of drinking water. This acidulated water should be placed in a porcelain or glass vessel and is suggested in the hope that the birds may be carried over an acute attack. At the outset, when the birds show evidence of being severely affected it may be of advantage to triple the amount of acid (using three teaspoonfuls to the quart of water) for the first three days. This amount will not injure the turkeys and may assist them in more rapidly overcoming the infection.

They should be confined during this period on dry sanded floors in well lighted and well ventilated quarters and allowed access to no other liquid. If allowed to roam they may obtain sufficient water for their requirements from the dew-laden grass or other sources, and therefore will not drink the acidulated water. If confined green food should be supplied in addition to the grain ration. Hadley, on the other hand, writes:

"The prevention of Black Head in a flock is not brought about by avoiding the parasites, for that is impossible. It is not accomplished by giving doses of intestinal antiseptics to kill the parasites in the intestinal canal, for that is probably a hopeless task. The problem is to so feed the poults that the parasites are restricted in their development and so that the "normal antagonistic factors"—can operate to advantage. It is safe to say that when we know how to feed turkeys successfully we shall find the dreaded blackhead disease has taken care of itself."

The writer's experience has led him to believe that the feeding of the

poults has a great deal to do with this disease. He has frequently observed that the flocks of poults that were most liable to be affected were those that had been specially "well fed" from the start. The more heavily fed they are the more liable to be badly affected they appear to be. When in conversation on this subject, one of our leading turkey breeders said: "I find that the sooner I can get the poults out on range to rustle for themselves the less I am troubled with Black Head."

THE WHITE PLAGUE OF POULTRY

It is safe to say that at the present time there is no disease of poultry which causes in the aggregate anything like the total loss that roup does in the northern part of the United States. Roup is widely, indeed almost universally, distributed. Every one who keeps poultry long enough is sure sooner or later to have experience with one form or another of the disease. Its germs are probably carried not only by poultry but also by various wild birds especially the English sparrow. The biologists of the Maine Agricultural Station have had opportunity not only to observe this dread disease in all its forms, but also to gain a very good idea of its prevalence through correspondence received at the station. The best cure of this disease is prevention. In order that prevention may be intelligently carried out it is essential to know something about the causes of the disease conditions which together go under the name of roup.

There are to be distinguished two diseases belonging to this general class of troubles, as follows: (a) Roup or contagious catarrh, when only catarrhal symptoms are present; and (b) diphtheric roup and canker, when diphtheral patches and false membranes are formed. Some workers consider these different stages of the same disease. It is also believed by some that sore head or chickenpox is also another form of the same disease.

The commonest form of roup, the nasal roup or contagious catarrh, attacks principally the membrane lining the eye, the sacs below the eye, the nostrils, the throat and the windpipe. The symptoms first seen are those very similar to an ordinary cold, but there is more fever, dullness, and prostration. The head is often very hot, the body normal or only slightly higher than normal. The discharges from the nasal openings is at first thin and watery, but in two or three days becomes thick and obstructs breathing. The inflammation, which begins in the nasal passages, soon extends to the eye and to the spaces which exist immediately below the eyeballs. The eyelids are swollen, and are closed much of the time. They may be glued together by the accumulated secretion. The birds sneeze and shake their heads in their efforts to free the air passages from the thick mucus. The appetite is diminished, and the birds sit with their heads drawn in, wings drooping with the general appearance of depression and illness.

When the inflammation reaches the spaces or sacs beneath the eyes it causes the formation of a secretion very similar to that of the nose and as this becomes thick it collects, distends the walls of these spaces, and produce a warm and painful swelling which is seen just below the eye and may reach the size of a hickory nut. This swelling presses with much force on the eyeball, which is displaced and more or less deformed, and in extreme cases even the bones of the head may give away before it.

The closure of the eyes prevents the badly affected birds from finding food; the accumulation of mucus in the nostrils completely obstructs these passages, so that the beak must be kept open in order to breathe; the obstruction of the windpipe and the smaller air tubes causes loud breathing sounds and difficult respiration.

In the severe and advanced cases the birds sit in a somnolent or semi-conscious condition, unable to see or eat; their strength is rapidly exhausted and many of them die within a week or ten days. A part of the affected individuals recover, but others continue weak and have a chronic form of the disease for months, during which time they continue to disseminate the contagion.

This disease is distinguished from diphtheria by the absence of the thick tough and very adherent newly formed membranes (false membranes) in the nostrils, mouth, and throat which are characteristic of the latter.

The course of roup is usually of long duration. A simple putrid discharge from the nose may stop in

DID YOU EVER THINK

why that skin trouble, from which you are suffering, will not heal? It is because it is so deeply rooted that ordinary ointments are incapable of penetrating to the seat of the disease.

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three or four days. But generally the symptoms last for months. When the eye-lids become swollen and tumors appear the case is usually chronic. Affected birds may be better for a few days or weeks, and then become very weak again. Damp, cold weather usually intensifies the disease.

SECRETS OF POULTRY SUCCESS

The secret of success in poultry raising lies first in getting pure-bred fowls of a known winter-laying strain and breed. The Light Brahma has grown to be the best breed in this respect around here, and every farmer who has tried it would have no other. To me it has proved to be the best I have ever heard of or tried.

The next step to take in getting eggs is to get an incubator and hatch early as the early hatched birds is the best winter layer, and the incubator is the only means which will hatch the eggs on time. It is also less trouble to care for an incubator than for a dozen or two hens that are always fighting each other or stealing each other's nests.

The next step is proper housing. This does not necessarily mean costly or very warm houses, but a house that has plenty of air and sunshine and is simple and easy to clean. Another thing to take into consideration is proper feeds and feeding. I aim to do this as cheaply as possible, and use nothing but home-grown feeds when ever I can. They are the cheapest and even if a grower gets a few more eggs by feeding commercial foodstuffs the difference is more than made up by the higher cost of production.

For example, in my own case I have a flock of about 90 Light Brahma hens. From these I have had eggs all winter and during February have had as high as 40 eggs a day. The house is so cold that on cold days a pair of water will freeze solid in a few hours. It has good ventilation, however, and I have not had a frozen comb all a winter, although the door has stood ajar day and night.

The only commercial feed which I have bought for this flock is one sack of bran and 100 pounds of oyster shells. Besides this they have always had a hopper full of ground oats before them. I have given them one peck of barley in 5 or 6 inches of water on the floor every morning. It certainly cheers poultry men up to hear those chickens sing on a cold winter morning. As for drink, I give them water in the morning and slop from the kitchen in the afternoon.—A. A. G.

BREAKING UP BROODY HENS

A hen is one of the most jealous creatures, and if placed in a wired-sided coop where she can see the rest of the flock ranging about the yard she is very restless, especially if there is a male with the flock frequently calling his mates to partake of a choice morsel of food, and if plenty of food and water are supplied she eats often, thereby keeping her body built up so she goes to laying again in a short time.

The plan followed here at the experiment station is to place the hen in this kind of coop on the day after she remains on the nest and does not lay; she is kept in the coop four days, and then released. During the time she is left in the coop she is given all the feed and water she wants. About 4000 hens are treated in this way each summer at this place. The records show that hens broken in this way begin laying again as follows:

The time from the laying the last egg till the hen began laying again was 10 days in March 8 days in April, 10 days in May, and 12 days in June. There were more broody hens in June than in April but for practical purposes we might say the average is 10 days. These coops can be easily built by any one out of scrap lumber and a little wire.—T. E. Quisenberry, Missouri.

The Orchard

ORCHARD MEETING

A very successful orchard meeting was held in the orchard of Mr. Atherton Marshall, of Clarence, on Sept. 5th, to demonstrate the control of the Green Apple Bug.

Prof. W. H. Brittain, who has been investigating the Bug, has in Mr. Marshall's orchard a valuable demonstration in the control of this insect. In 1911, Mr. Marshall picked 550 barrels of Nonpareils. Since that year his crop has dwindled down until last year it was only 1 1/2 barrels of Nonpareils. On ten large Nonpareil trees in 1915 only one apple was found, due to the ravages of the Green Apple Bug. Prof. Brittain's methods have this year resulted in the practical extermination of the bug and a moderate to good crop of Nonpareils.

Almost every orchard in Annapolis County has in it some Nonpareils that are failing to bear, due to the Bug, and it would pay every owner to read the accompanying article on the Green Apple Bug and then visit Mr. Marshall's orchard and compare it with some of the Nonpareil orchards adjoining.

THE GREEN APPLE BUG

(Lygus Inivitus Say, var. novascotiensis Knight)

History, Distribution and Seriousness of the Pest. For a number of years fruit growers in the Annapolis Valley of Nova Scotia have complained of the non-bearing of certain varieties of apples, especially the Nonpareil. Such trees would bloom heavily every year, but would invariably fail to set a crop of anything but a few gnarled, twisted apples. At the same time there came frequent reports of pears that "grew woody" and were covered with corky distorting scars.

No one appears to have suspected the connection between the trouble in the apple and pears or that either of them was due to an insect. Examination of affected orchards about blossoming time showed them to be swarming with small yellowish or green sucking insects, which in appearance resembled long-legged plant lice. These insects moved with extraordinary rapidity and had a wonderful ability to hide. They later developed wings and became a delicate brownish insect about one quarter of an inch long. This insect resembles closely an insect known as a pear pest in New York State under the name of False Tarnished Plant Bug (Lygus Inivitus) of which species it forms a variety. Lately it has gained an unenviable reputation in Nova Scotia as the "Green Bug" or the "Green Apple Bug."

The pest is well distributed through the main fruit producing centres of Hants, Kings, Annapolis and Digby counties, but, though the adult is a fairly strong flier, it does not seem to spread very fast. It is certainly one of the most serious pests in the Annapolis Valley, in fact, where it once becomes established there is no pest to compare with it, either in amount of damage done or in the difficulty of controlling it. That such a pest should have gone so long unnoticed is rather surprising and can only be attributed to the very elusive habits of the insect.

Food Plants. As far as we have determined, the insect breeds only on the apple and pear. It has been found on plums in the adult stage, but has not been known to lay its eggs in that plant. When shaken from the tree, the young insects have been observed to feed on various plants growing on the ground but when it reached the winged state it always seeks the apple and pear tree to feed and deposit its eggs.

Life History. The eggs, which are laid beneath the bark of the twigs, begin to hatch a few days before the blossoms open. The height of the emergence coincides with the opening of the blossoms and practically all are out by the time the last blossoms fall. From 31 to 34 days elapse from the time the insect hatches until it gets its wings. Soon after hatching the eggs are laid, after which the adult insects begin to die off, few remaining after a month has passed.

Habits of Young Insects. The young bugs are very active and when disturbed run rapidly, hiding in the axils of the leaves or any place that affords concealment. When suddenly disturbed they frequently drop, but generally alight on another branch before reaching the ground. When forced to drop by heavy rains, winds, sprays, etc., they may reascend the tree or they may feed on the herbage at its base until their wings are obtained, when they will fly up into the trees again.

Experiments have shown that insects that fall to the ground are cap-

able of feeding and completing their transformations on timothy, red clover, couch grass, dandelion and a great variety of other plants.

In feeding, the young insects prefer the young leaves of apple and pears, but also puncture the tender twigs. Later on they attack blossoms, but when the fruit is set, they feed on it to the exclusion of other food. The later stages will not feed on the leaves if other food can be obtained.

HABITS OF ADULTS

Adult insects are, like their young very active and take to flight readily when disturbed. The nymphs prefer green pears to all other food, but also feed upon the fruit of apples and plums. Pear trees kept free from the young insects by spraying had their crops destroyed later by bugs flying in from nearby apple trees.

CHARACTER AND EXTENT OF INJURY.

1. Injury to the Apple. The first evidence of injury is to the tender foliage in the form of purplish spots upon the surface of the affected leaves, accompanied in severe cases by a slight tendency to curl, as the leaves unfold and later reach full size, the discoloration disappears, but if affected leaves are held to the light they will be found to be pierced through and through with small holes. In very severe cases they have a ragged, frayed appearance.

The tender, succulent twigs are favorite points of attack and as the insect removes its beak a clear drop of liquid oozes through the bark. Later, as the twig increases in size, quite a decided lump may develop at the point of puncture, with, in severe cases, a cracking of the bark. In heavily infested orchards where insects are present in hundreds of thousands, the twigs may be literally stung to death and afterwards remain clinging to the tree for some time, in a brown dried-up condition.

Blossoms are attacked with equal freedom and like them, may frequently be stung to death by the countless number of beaks all with drawing their sap at the same time. The dead dry blossoms usually fall to the ground in a short time. These facts explain why susceptible varieties bloom year after year without giving any crop.

As soon as the young fruit has set, drops of gum oozing through the skin, reveal the spot of the insect's attack. A slight reddish purple raised spot will mark the puncture and the young apple generally drops, after being stung. Fruit that is able to still cling to the tree, or that is not attacked until it reached some size, is usually badly gnarled and wisted as a result of the insects' attack. The failure of the tissue about the puncture to develop, results in a one-sided apple, with a pronounced depression, surrounding a brown slightly raised scar marking the spot where the insect inserted its beak.

Injury to Pears. Injury to the leaves, stems and blossoms of the pear resembles that of apple, except that in this case the tissue about the puncture turns black. Stinging of the young pears does not often result in dropping as in the case of apples. The effect of the punctures on the fruit is, however, very conspicuous, it being covered with hard, granular, corky scars, which are often split open as in the case of those on the apple. Hard flinty areas extend into the pulp, making the fruit useless for any purpose whatever.

Injury to Plums. Injury to the fruit of plums is not uncommon, where these trees border on affected apple or pear trees. Plums injured by the bugs do not usually become scarred and twisted as in the case of apples and pears, though they may sometimes grow one-sided. The seat of injury is usually at the extremity of the fruit furthest from the stem. As usual in the case of stone fruits this injury is marked by the exudation of colorless gum which flows through the small puncture, sometimes forming a globule and sometimes a coil of gum which finally hardens in the air.

SUSCEPTIBILITY OF VARIETIES.

Nonpareil (Roxbury Russet) is the most susceptible variety of apple, next in order comes Ribston, Granvinstons, Golden Russets, Blenheim, and Greening. There is a tendency in an orchard for the insect to spread from the more susceptible to the less susceptible varieties.

The Bartlett pear is more subject to attack than other varieties, but Clapp's Favorite, Burbridge, Maria and Flemish Beauty are also affected.

CONDITIONS FAVORING INCREASE

As a result of our observations throughout the infested area it appears that the most suitable conditions for an undue increase on the part of the insect are shady orchards, with closely planted thick growing

trees, where air drainage is poor and a certain amount of herbage on the ground. These conditions are not essential however, as the pest is known to flourish under all conceivable conditions.

CONTROL

Several factors make the control of this pest more difficult than that of any insect with which we have to contend. First, the insect is very active and very clever at hiding, making it very difficult to hit it with the spray. Second, when the tree is sprayed, large numbers of the young insects drop to the ground and may reascend the tree when the spraying is over. 1389 insects were found going up one tree after it had been sprayed—enough to ruin the entire crop. Third, the insects are capable of coming to maturity on timothy, clover, couch grass, and other plants that may be growing at the bottom of the tree, after which they can fly back to the fruit trees and continue their work of destruction.

The following are, therefore, the measures to be followed in controlling the Green Apple Bug:—

1. In normally planted, well pruned orchards, with only a moderate infestation, spraying the apples with Blackleaf 40, 1 pint to 100 gals. just before and just after the blossoms fall and again five days later, should be sufficient. In others special measure must be taken.
2. The trees must be banded with tree tanglefoot to prevent the reascend of those insects that have fallen to the ground.
3. The orchard must be kept in a state of clean cultivation until the end of the first week in July, in order to starve all insects that have been forced down the tree.
4. The trees must be thoroughly thinned out and pruned so that all parts can be reached by the spray.
5. A very heavy drenching spray must be given.

A CANADIAN CHAINED TO HIS GUN

To the Editor.

Why will people deliberately seek sorrow? Everyone now outside of an Asylum knows that drink causes most of the sorrow and suffering in the world and yet we have the spectacle of prominent men and a few leading newspapers opposing any relief from this scourge. It would seem as if for some selfish reason they want Britain defeated in this war for there is no doubt that drink lessens the effectiveness of the soldiers.

The sufferings of men addicted to the use of alcohol, morphine or any other narcotic drug are often beyond description when they are deprived of their favorite dope. Many of them will lie, steal or even murder to secure a supply to relieve the terrible craving. Yet in the face of this well known fact, people will risk it.

A physician who has been very successful in the treatment of these cases, tells me that the cause of this dreadful craving is a secretion poured out by nature to protect the brain and nervous system from destruction. It is one poison counteracting another, but when the dope is withdrawn this secretion does not stop but continues to be poured out, causing the most acute suffering in the absence of the poison which it was intended to counteract. That explains what has long been a puzzle and shows that there can only be one remedy, viz., something that will check this secretion and thus restore the man to normal.

Men who drink often have an insane desire to make others drink also. An officer in France not long ago tried to force a subordinate to drink who was a total abstainer. He kept on annoying the Canadian abstainer till he turned on him and knocked him down.

The officer was not punished for trying to ruin his subordinate, but the latter was chained to his gun for two hours every day for striking his superior officer.

That officer was doubtless a beer-drinker. Whisky makes a man noisy and either funny or combative; beer makes him coarse, foul mouthed and brutal. The beer drinker suffers more than the whisky drinker when deprived of his favorite beverage, and more rarely is able to give it up.

H. ARNOTT, M.B., M.C.P.S.

The Panama Canal is again blocked by a slide about 200 feet in length. It is a serious handicap to shipping, as 9 vessels are waiting on the Pacific and 10 on the Atlantic side. The canal may be opened in a few days.

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