MINNESOTA HISTORICAL SOCIETY.

MINNESOTA NURSERY STOCK

GROWS ALL OVER THE WEST AND CANADA.

NURSERY INSPECTION IN MINNESOTA

A Good Word for Some of Our Birds—By F. L. Washburn, State Entomologist.

F. L. WASHBURN, STATE ENTOMOLOGIST.

He is also, by virtue of his office, official inspector of Minnesota nurseries and orchards. He was graduated from Harvard University in 1882, and after a trip abroad he did post graduate work at Johns Hopkins University, coming from that place to the University of Michigan as instructor in zoology, thence returning to Harvard for graduate work for the Master's degree. He was called to the experiment station of Oregon before the completion of that work, finishing his degree work and obtaining his A. M. from his Alma Mater in 1895. After six years at the state experiment station he was called to the State University of Oregon and also was made state biologist. After seven years' service in the university he accepted the position in Minnesota made vacant by the death of Professor Otto Lugger.

At a meeting of official inspectors of nurseries and orchards held at Washington, D. C., in November, the writer was much impressed by the fact that most stringent laws exist in many of our states regarding nursery stock, far more stringent than our law in Minnesota is or ever likely to be. This is owing to the fact that much more serious conditions prevail in many of our states than they do here as regards insect pests and fungus diseases. There are no laws in the two Dakotas or in Vermont, Wyoming, Texas, Rhode Island, Nebraska, Nevada, Mississippi, Kansas or Arizona, and possibly one or two other states. But with these exceptions Minnesota stock could be shipped to no state in the union without a certificate of inspection, or in some cases a certificate of fumigation. In fact, the Canada laws are so strict that even with a certificate of inspection on the part of the proper authorities here, our stock cannot enter Manitoba without being fumigated at Winnipeg or en route to Winnipeg. On the other hand, up to this year any state could unload stock upon us of any kind without being prevented by any Minnesota law. At the last session of the legislature a law was passed to prevent the introduction and spread of injurious insects and dangerous plant diseases. It constitutes the entomologist of the state experiment station state entomologist with power to appoint and pay assistants. Between May 1 and Sept. 15 in each year, when requested by owner or agent, or there is reasonable ground to believe injurious insect pests or dangerous and contagious plant diseases exist, the entomologist shall examine any nursery, fruit farm or other place where trees or plants are grown for sale. If found apparently free from such pests or diseases, he shall issue his certificate, good for one year unless revoked, stating the facts and collect a fee of $5 a day and expenses.

Authority is given to enter upon any grounds, public or private, for the purpose of inspection, and if infested, to establish quarantine regulations. Treatment may be prescribed or trees, shrubs or plants ordered burned. A failure for ten days to comply with the order shall authorize the entomologist to perform the work and charge the cost. If not paid within sixty days, the amount, certified to the county attorney, shall be collected by civil suit and turned over to the state auditor to reimburse the state.

Nursery stock shipped into the state accompanied by a certificate of inspection by a state entomologist from the state whence shipment was made, shall be prima facie evidence of immunity. But when there is reason to believe such stock is infested, authority to inspect is given. On failure to comply with the treatment prescribed or to destroy the stock, if so ordered, the entomologist is required to perform the work and certify the cost. If not paid within ten days, he is to certify the amount to the attorney of the county where the stock is found. The attorney is to file the affidavit with the clerk of the village, city or town in which the stock may be, thereby constituting a lien thereon. The county attorney is to collect the amount by civil suit and pay over to the state auditor.

Bringing into the state of trees, plants, vines, cuttings and buds, commonly known as nursery stock, is proscribed, unless accompanied by a certificate of inspection and immunity given by the entomologist of the state whence shipped.

Violation of the act is declared a misdemeanor, with a penalty of from $10 to $100 and costs and commitment until paid.

The fees are to be paid to the state treasurer and added to the fund for combating injurious insects. All expenses are to be paid therefrom.

The law as passed has been very much modified from the original bill as first drawn because the public has not so far felt the need of the stringent laws existing in other states. As will be noted the entomologist only inspects nursery stock upon request of the owner, or upon complaint of some party that dangerous insects or plant diseases exist in some nursery, but the law makes it a penal offense for diseased stock to be shipped into Minnesota. As a matter of fact a large portion of the stock held by nurserymen comes from Iowa, where the most careful supervision prevails over nursery and orchard conditions. Furthermore, with the exception of a few points in the southern part of Iowa, the San Jose scale does not exist there. The Woolly Aphis, another serious pest of the apple grower, is found there, and while it is kept in check largely by the Iowa legislation, the entomologist occasionally finds this insect upon Iowa stock shipped into Minnesota, but only in isolated cases.

In inspecting nurseries thruout the state, for all nurserymen shipping outside of Minnesota naturally desire inspection, the writer has been impressed with the general absence of injurious insects and plant diseases in Minnesota grown stock. Of course, we have the various plant lice and tree hoppers, but nothing like what states to the south and southeast and east of us have to contend with. The entomologist was further impressed by the fact that the nurseries were in fine condition. That is, well cultivated, the stock looked healthy, was making almost without exception fine growth, and the activity on the part of the nurserymen and the increased acreage of the nurseries showed that horticulture is on the advance in Minnesota, and that people are realizing, as well they might from the exhibits made by the Horticultural society, that this state can raise as fine fruit as any state in the union. There is no doubt but that when occasion demands it the above law can be made more stringent to meet the needs of horticulturists and nurserymen. Pursuant to the provisions of this law the entomologist has turned into the state treasury $101.98, as shown by treasurer's receipts, representing the income from inspection.

Now, I wish to say a good word for some of the birds, but do not wish to be misunderstood. An orchardist is certainly justified in defending his fruit from birds when he is absolutely sure that the birds are working him more harm than good. But there is no question but that many a nurseryman shoots the wrong bird in ignorance of the bird's habits. It might be taken as a general maxim that birds nesting about the garden or farm are useful to the owner thereof, because they feed their nestlings very largely upon the insect food which they will seek for first, naturally, in the vicinity of their nests. But if these birds nest at a distance they will make frequent raids upon the berry patches when berries are ripe without making recompense by killing injurious insects because they can find what insects they need for their young nearer their nests. It would seem then, that the nurseryman or orchardist should encourage as far as possible the nesting of birds on his premises by the planting of shrubbery and trees. He would not only adorn his home, but would be offering birds a premium for their help.

There are good birds and bad birds and birds of doubtful character. The writer has obtained pictures made in the Entomological Laboratory of the experiment station of some useful birds and one bird whose character is very questionable.

Swallows feed almost entirely on the wing. Naturally their food must therefore be small insects, such as Crane flies and other flies, small moths, beetles and the like. They have been known to eat harvest flies, or cicadas, sometimes wrongly called locusts, in large numbers. The presence of swallows should be encouraged and the opportunity given for the barn swallow to enter the barn upon every farm. Quite apart from the economic value of swallows they certainly form a pleasing feature in every country home and we associate their presence with green meadows and with huge barns loaded with hay.

YELLOW-BILLED CUCKOO.

The Blackburnian Warbler is a type of the family of wood-warblers. The writer will never forget the woods of New England and Minnesota in May when hosts of warblers of many kinds are passing us on their annual migration to the north, where they nest. Little gems they are from the south which we can only temporarily enjoy, because the larger number of them are not content to nest with us; but there are many that do nest with us and do us much good; the summer Yellow-bird, for instance, which feeds very largely on canker worms; the yellow rumped warbler or Myrtle warbler; the black-throated green warbler whose food is largely canker worms; that beautiful jewel, the American Redstart, and others. All of these warblers consume large numbers of insects. As intimated above, canker worms are much eaten; they also eat small locusts, beetles, caterpillars, moths, various bugs and flies, spiders, small grasshoppers and leaf hoppers.

WHITE-BELLIED NUTHATCHER.

It is the summer yellow bird that suffers from the depredations of the cow blackbird or cow bunting. This blackbird has a parasitic habit of slipping along thru the bushes and laying its large egg in some small nest whose owner hatches it and raises the ugly, awkward child of the parasitic parent.

We have two forms of cuckoo, the black-billed cuckoo and the yellow-billed cuckoo. Who has not heard in summer time their mysterious call, so ventriloquistic that one cannot tell whether the bird is close at hand or an eighth of a mile away. The cuckoo affects the fashionable shade of brown and a white breast, rather a long tail and a bill somewhat curved. They are retiring in habit and somewhat shy. By shy, I do not mean wary, which indicates a different characteristic. In some work done by the biological survey, out of 155 stomachs of the yellow-billed cuckoo examined between May and October, only one contained berries and nearly one-half the food consisted of various kinds of caterpillars, and it is to be noted these were mostly hairy caterpillars, for this is one of the very few birds willing to eat the hairy species of caterpillars. When the tent caterpillar is abundant it forms nearly one-half the cuckoo's food. Is not this a bird worthy of our protection? Unlike the European cuckoo, which deposits its egg in other birds' nests, the American cuckoo is independent, raising its own young.

BLACKBURNIAN WARBLER.

Now comes a bad bird, the yellow-bellied woodpecker or sapsucker. Of all the woodpecker family, this is practically the only injurious member. Its tongue differs from that of other woodpeckers, not being adapted to pull from their burrows injurious borers or to extract other insects from beneath the bark. Its food, to be sure, consists in part of insects, also of berries, very largely of sap and to some extent of the inner layer of the bark of trees. Its main food may be said to be sap. It has been seen to remain for as many as six or seven hours upon a tree whose bark it had punctured, sipping the sweet sap from time to time that gathered in the holes it made. It may have been originally an exclusively insectivorous bird, but in seeking for insects by means of perforating the bark it may have acquired a fondness for the sap. To this sap flock many insects so that the bird can change its diet occasionally without much effort. Trees have been known to die as a result of the bleeding caused by this pest. It affects white birch and maple, apple, hickory and even pine as well as many other trees, in fact, is a general feeder. The bird is yellow on the belly, with a black or blackish breast and red on top of the head in the adult.

A modest little bird, but a good worker, is the brown creeper. It has stiff tail feathers, which it keeps pressed against the trunk of the tree as it travels over the surface, picking out many an insect from its retreat beneath the bark. It is undoubtedly a useful bird and is found with us thruout the year. It eats beetles, saw flies, ants and spiders. Professor Aughey states that in June, 1895, he saw a pair bring to the nest of young twenty-seven locusts in one hour. It harmonizes in color so closely with the bark that its enemies, the butcher bird or the hawk, would have difficulty in distinguishing it.

Our winter woods are enlivened by the chickadees. Always cheerful, always busy, seemingly not minding the intense cold of the north; at least one-half of the food taken during the winter months consists of insects. It also eats spiders and spider eggs. Its especial value to the nurseryman and orchardist lies in the fact that it drags from their retreat beneath the bark a large number of the larvae of the codling moth. Who does not remember, not only its cheerful "chickadee-dee" in our snow-laden woods, but also that other musical note which entitles it really to a place amongst our songsters. It has a great fondness for eggs of plant lice and eats various pupae.

Another useful bird in Minnesota is the white-bellied nuthatch. This bird has a curious habit in crawling over the bark of trees, of sometimes hanging head downwards; that is, it will travel down the tree or down a branch as readily as up, something which the brown creeper never does. Twenty-five stomachs examined by government experts contained beetles, ants, caterpillars and grubs. The nuthatch will eat seeds of various sorts, sometimes including corn when insect food is scarce. In some states the nuthatch has done very good work by eating the winter eggs of the pear tree psylla, a pest which has destroyed in one year many thousand dollars worth of pears by infesting the trees.

Our Bob White or quail, the partridge of the south, altho affording fine sport for the gunner and being a delicious titbit for our tables, really deserves protection. It eats army worms and probably other cut worms. It feeds freely upon potato beetles, 100 being taken from the stomach of one bird; this 100 must have been eaten in one day, of course. As many as 500 chinch bugs have been found in the crop of one quail early in the day.

Turning to a different class of much-maligned birds, the hawks and owls, I use as an illustration the sparrow hawk, believing it to be on the whole a useful bird. It is familiar to all of us, particularly in the late summer and early autumn, when it is seen along the country roads perching upon the fence poles.

In some government work done a number of years ago, out of 320 stomachs of the sparrow hawk examined, one contained a game bird, fifty-three other small birds, eighty-nine contained mice and 215 contained insects and allied forms. Not a bad record. The writer has seen this bird feeding upon grasshoppers in the autumn, and no doubt other observers can corroborate this statement.

The screech owl should be allowed to frequent the vicinity of our barns and granaries and orchards without being molested, for it is as useful as the proverbial barn cat. Out of 255 stomachs examined one contained poultry, thirty-eight contained other birds, ninety-one contained mice, eleven contained other small animals, and 100 contained insects.

The above list by no means represents all useful birds, but they are some of the more common birds which are notably useful. We should add to the list the downy woodpecker, the rose-breasted grosbeak, the ruby-crowned and golden-crowned kinglets, various pewees and fly catchers and the vireos so seldom seen, but so often heard in our shade trees in the warm days of summer.

THE ORIGINAL LYMAN'S PROLIFIC CRAB

This tree was originated by the late H. M. Lyman, in 1867, on his farm near Excelsior, Minn. It is 37 years old and now has a spread of over forty feet of branches from side to side. The trunk is fifty-five inches in circumference and the tree is without a blemish. This tree has yielded more bushels of apples than any other tree in this part of the state. At different times from fifteen to thirty bushels, and the fruit of this single tree sold in 1892 for $40. From this tree were originated all of A. B. Lyman's hardy seedlings.

HOW WE GROW CHERRIES

BY FRANK YAHNKE.

This is very simply answered, and if I would say that we plant the trees and take care of them, you would know the whole secret, but at the same time not know about how we really succeed in cherry-growing.

We have a distinct variety of cherries which is almost exclusively planted, known by us as the Homer cherry. This cherry is on its own roots. We plant the root sprouts so that the rows are twenty feet apart and the trees ten feet apart. We cultivate the young trees until they are bearing size and then we seed the cherry orchard into grass or clover. We have learned by experience that cherry trees bear more fruit when seeded in grass than when cultivated. As cherry trees ripen their fruit early in the season, we need not fear the drought which will probably injure the later fruits. At the same time cherry trees form their blossom buds early in the season, and for this reason it is desirable to check their growth early so as to make the conditions right for the formation of blossom buds, which insures a crop of cherries for the next season. However, when the trees become old and are no longer so vigorous in wood growth, a good cultivation is necessary to obtain good large No. 1 fruit and to get the same result as with young trees.

The pruning of cherry trees must all be done when the trees are young, and ought to be performed with this view in mind, to have an open crown in order to let the air and sun in, and to prevent the branches from crossing each other or from rubbing. If the trees are pruned annually, no other tool except a pruning shears or knife is necessary to do the work. It is best to do this work in March.

When the trees become bearing size they often become bark-bound and are benefited by opening the bark on the north side of the tree with a knife. A straight cut from the ground to the limbs is not desirable. It is better to make the cut in several offsets. The cut ought not to be so deep as to cut thru the inner bark. The best way to do this is to take a sharp jackknife, give a rip upwards, then set the knife in on one side of the upper end of the cut, and make another rip upwards, and so on until you have reached the limbs.

In the way of closing, I want to give one suggestion, and that is never to pick the cherries until they are fully ripe, for the cherries grow one-third of their size after they have colored. In picking, be very careful not to tear off the blossom buds for the next season. —Frank Yahnke.

HIS FATE.

Chicago Chronicle.

"You are me prisoner," announced the officer in plain clothes, grasping teh pockpocket by the collar.

"What right have you to arrest me?" angrily exclaimed the other.

"I'm a p'leeceman."

"You'll have to show me."

The officer simply pointed to his shoes.

"Thirteens," gasped the pickpocket, submitting to be led away. "What can a man do against a hoodoo like that."

HADN'T SEEN PAPA.

Chicago News.

"All the world loves a lover," quoted the young man who was making his first call.

"You haven't met papa yet, have you?" queried the fair maid in the parlor scene.

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