

NEWS AND VIEWS OF THE FARMER

THE ENGLISH SPARROW A NUISANCE

The English Sparrow Was Introduced Into America About Sixty-Five Years Ago, and is Now Distributed Over Nearly All of the United States and Southern Canada—This Rapid Dissemination is a Result of the Bird's Hardiness, Diversity of Food, Aggressive Disposition, and Almost Complete Immunity from Natural Enemies.

By N. DEARBORN

The English sparrow among birds, like the rat among mammals, is cunning, destructive, and filthy. Its natural diet consists of seeds, but it eats a great variety of other foods. While much of its fare consists of waste material from the streets, in autumn and winter it consumes quantities of weed seed and in summer numerous insects. The destruction of weed seed should undeniably count in the sparrow's favor. Its record as an insect destroyer is not so clear. In exceptional cases it has been found very useful as a destroyer of insect pests. For example, during a recent investigation of birds that destroy the alfalfa weevil in northern Utah, English sparrows were feeding their nestlings largely on weevil larvae and cutworms, both of which are very injurious to alfalfa. In this case the sparrows, attracted by grain in fields and poultry runs and by the excellent sites afforded by the thatched roofs of many farm buildings, had left their nests and taken up their abode in the country where the weevil outbreak subsequently occurred. Unfortunately, however, farmers can rarely afford such aid against their insect pests. However this bird proves useful, it is entitled to the full protection and encouragement in its own right to its great value. Under present conditions its choice of insects is almost entirely confined to alfalfa cutworms and grasshoppers. Out of 522 English sparrow stomachs examined by a recent survey, 47 contained insect pests, 30 held beneficial insects, and 14 contained insects of little or no value.

On the other hand, much is to be said against the bird. It destroys alfalfa cutworms, grasshoppers, and other insects that eat seeds and young plants of peas and lettuce, and other garden crops. It eats newly sown, ripening or in seed alfalfa, a flock of 50 sparrows being the equivalent of a single cutworm. The annual loss caused by sparrows throughout the country is incalculable. It reduces the numbers of our most useful and attractive garden birds, as bluebirds, house wrens, purple martins, tree swallows, and barn swallows, by eating their eggs and young and by destroying their nesting places. It attacks such species as the robin, wren, and chickadee, and causes the loss of many of our native birds. Unlike our native birds, the English sparrow has no song, and its noisy and vituperative. It de-

files buildings and ornamental trees, shrubs, and vines with its excrement and with its bulky nests. The evidence against the English sparrow is, on the whole, overwhelming, and the present unfriendly attitude of the public towards it is reflected in our state laws. Nowhere is it included among protected birds.

One of the greatest objections to the English sparrow is its aggressive antagonism toward the small native birds, especially those familiar species which, like itself, build their nests in cavities. Nest boxes provided for bluebirds, martins, or wrens—birds both useful and pleasing—too often fall into the possession of this pest. It is either by the right of discovery or by practical assault. Fortunately it is possible to aid the native birds by selecting suitable nest boxes. Thus, a box having an entrance 1 inch in diameter will admit house wrens, but not sparrows. Boxes for larger birds may be constructed so that unwelcome tenants can be easily evicted and at the same time acceptable to more desirable species. When a sparrow has had its nest and eggs removed from a box, it not only as a rule seeks another place for its next nest, but is likely to avoid that type of nest box in future.

When a place has once been cleared of sparrows some time elapses before they return to it. Out of 522 English sparrow stomachs examined by a recent survey, 47 contained insect pests, 30 held beneficial insects, and 14 contained insects of little or no value.

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Funnel Trap (Side Raised to Show Interior).

entrusted to boys or persons unfamiliar with the native species, as otherwise valuable birds may be destroyed under the belief that they are English sparrows. Occasionally they build large covered nests in trees, but as a rule they build open nests in bird houses, electric-light hoods, cornices, waterpots, and similar places. While it is often difficult to reach nests by hand, they can usually be torn down by means of a long pole having an iron hook at the tip. By concerted and continuous efforts to destroy every nest after the eggs are laid, the numbers of English sparrows in any locality may be rapidly reduced.

The sparrow's habit of nesting in cavities can be turned to account against it. By providing one-room bird houses, or even packing boxes or tin cans, and putting them in trees or on poles or buildings at a height of about ten feet, the birds may be captured after dark with a long-handled net. The net should have a deep bag and a small hoop. After the net has been quietly placed over the entrance, a few raps on the box will send the occupants into it. By distributing a number of nest boxes about orchards, shade trees, and out buildings, and catching the sparrows that occupy them, the work of extermination may be carried on at a season when other methods are least effective.

Neither law nor public sentiment will allow the use of firearms or the unrestricted use of poison in the extermination of sparrows. The use of traps, therefore, is strongly recommended. Besides being safe to employ, properly designed traps have other advantages. The fact that native birds when caught in sparrow traps, can be liberated unharmed, is particularly important in suburban localities.

Sparrow traps may be classified, according to their nature, as nest-box traps and bait traps. Inasmuch as sparrows usually feed in flocks, but approach nest boxes only singly or in pairs, the annual catch of a bait trap will exceed that of a nest-box trap many fold. During the breeding season, however, nest-box traps are decidedly useful.

A nest-box trap, as its name implies, looks like an ordinary nest box. The weight of a bird entering such a trap into operation a mechanism which catches the bird and sets the trap for another. There are a number of devices to accomplish this. In designing a nest-box trap one should bear in mind that English sparrows, like other birds, dislike drafty quarters, and that a mechanism delicate

enough to be operated by a sparrow's weight is likely to get out of order unless the parts are few and well protected from the weather.

When extensive trapping is undertaken, the traps employed must fulfill certain requirements in addition to ultimate efficiency. Especially important are simple and prompt action, portability, and cheapness, all of which are found in the funnel trap. Numerous experiments show that funnel traps usually make a catch on the first day they are set. This trap has no loose parts to become disarranged and requires no tools to keep it in order. Although somewhat bulky, it weighs but little, and when painted green or gray is inconspicuous. It is easy to construct, and the cost of material is slight. The funnel trap has been tested on the Agricultural Grounds in Washington with excellent results, and one sent for trial to the Missouri Botanical Gardens at St. Louis during one summer caught 300 sparrows in six weeks.

In setting a funnel trap a place should be selected where sparrows are accustomed to assemble. Often there are several such places in a neighborhood, in which case it is advisable to move the trap daily from one of them to another, because the birds appear to associate the locality rather than the trap with the distress of their imprisoned comrades. Canary seed, hemp seed, wheat, oats, and bread crumbs are excellent baits. The bait should be scattered in the antechamber and first funnel and also, sparingly, outside about the entrance. A live sparrow kept in the trap as a decoy will facilitate a catch. In case native birds enter a trap they may be released without harm. Trapping may begin at any time after young sparrows are able to take care of themselves. Each day's catch should be removed from the trap at nightfall, and if a decoy is used it should be comfortably housed and otherwise cared for when off duty.

In removing sparrows from either a funnel or a sieve trap a receiving box will be found useful. It should be about 6 inches square and 18 inches long, inside measurement. The door, hinged at the bottom and turning inward, is controlled by the part of its wire frame extending through the side of the box to form a handle.

The early planting of apples was, according to J. H. Hale, for drink and not for food, but today the apple is grown principally for its food value. The American people are fast coming to appreciate its value for food, and today fifty times more fruit is being consumed than in former years. The market today is demanding the highest quality of fruit, and is willing to pay a premium for choice goods. Size, uniformity and color are three essential requisites in high quality of fruit. Mr. Hale does not think that the old orchards found upon the farms today can from any method of pruning or tillage be made to produce a high quality of fruit. The tree must be trained for its special purpose in order to get best results. "I think," said Mr. Hale, "a far larger portion of old orchards could be made to produce far better fruit were they given proper care and cultivation. Low down trees are very desirable; with them expense is reduced and cultivation can be better conducted. In selecting a site for a fruit orchard, select rolling land, and not low, cold soil. Tillage should ever be the watchword of the orchardist. Begin as early in the spring as possible, and continue for at least three months. Have the ground covered with something at harvesting time. A good cover crop is clover, but anything will do providing it furnishes a covering to the soil."

Short-tailed field mice are commonly known as meadow mice, pine mice, and moles; locally as bear mice, buck-tailed mice, or black mice. The term includes a large number of closely related species widely distributed over the Northern Hemisphere. Over 50 species and races occur within the United States and nearly 40 other forms have been described from North America. Old World forms are fully as numerous.

Meadow mice inhabit practically the whole of the Northern Hemisphere—America, north of the Tropics; all of Europe, except Ireland; and Asia, except the southern part. In North America they are few wide areas except arid deserts from meadow mice, and in most of the United States they have at times been numerous and harmful. The animals are very prolific, breeding several times a season and producing litters of from 6 to 10. Under favoring circumstances, not well understood, they sometimes produce abnormally large litters, and become a menace to all growing crops. Plagues of meadow mice have often been mentioned in the history of the Old World and even within the United States many instances are recorded of their extraordinary abundance with accompanying destruction of vegetation.

The runs of meadow mice are mainly on the surface of the ground under grass, leaves, weeds, brush, boards, snow, or other sheltering litter. They are hollowed out by the animals' claws, and worn hard and smooth by being frequently traversed. They are extensive, much branched, and may readily be found by parting the grass or removing the litter. The runs lead to shallow burrows where large nests of dead grass furnish winter retreats for the mice. Summer nests are large balls of the same material hidden in the grass and often elevated on small hummocks in the meadows and marshes where the animals abound. The young are brought forth in either underground or surface nests.

The Apple

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Meadow mice are injurious to most crops. They destroy grass in meadows and pastures; cut down grain, clover and alfalfa; eat grain left standing in shocks; injure seeds, bulbs, flowers, and garden vegetables; and are especially harmful to trees and shrubbery. The extent of their depredations is usually in proportion to their numbers. Thus, in the lower Humboldt Valley, Nevada, during two winters, these mice were abnormally abundant, and totally ruined the alfalfa, destroying both stems and roots on about

18,000 acres and entailing a loss estimated at fully \$250,000.

When present even in ordinary numbers, meadow mice cause serious injury to orchards and nurseries. Their attacks on trees are often made in winter under cover of snow, but they may occur at any season under shelter of growing vegetation or dry litter. The animals have been known almost totally to destroy large nurseries of young apple trees.

Older orchard trees are sometimes killed by mice. In Kansas the writer saw hundreds of apple trees, 2 to 10 years planted, and 4 to 6 inches in diameter, completely girdled by these pests. The list of cultivated trees and shrubs injured by these animals includes nearly all those grown by the horticulturist. The Biological Survey has received complaints of the destruction of apple, pear, peach, plum, quince, cherry, and crabapple trees, of blackberry, raspberry, rose, currant, and barberry bushes, and of grape vines; also of the injury of sugar maple, black locust, Osage orange, sassafras, pine, alder, white ash, mountain ash, oak, cottonwood, willow, wild cherry, and other forest trees.

The injury to trees and shrubs consists in the destruction of the bark just at the surface of the ground and in some instances for several inches above or below. When the girdling is complete and the cambium entirely eaten through, the action of sun and wind soon completes the destruction of the tree. If the injury is not too extensive, prompt covering of the wounds will usually save the tree. In any case of girdling heaping up fresh soil about the trunk so as to cover the wounds and prevent evaporation is recommended as the simplest remedy. To save large and valuable trees bridge grafting may be employed.

Pine mice inhabit chiefly forested regions and are unknown on the open plains. Ordinarily they live in the woods, but are fond of old pastures or lands not frequently cultivated. From woods, hedges, and fence rows they spread into gardens, lawns and fields through their underground tunnels or those of the garden mole. The tunnels of the pine mice are smaller than those of the mole. While the mole feeds almost wholly upon insects and earthworms, and seldom eats vegetable substances, pine mice live upon seeds, roots and leaves. Their harmful activities include the destruction of potatoes, sweet potatoes, bulbs, shrubbery and trees.

They destroy many fruit trees. The mischief they do is not usually discovered until later, when harvest reveals the rifled potato hills or when leaves or plants suddenly wither. While they differ little from meadow mice in general food habits, their surroundings afford them a larger proportion of mast. They are less prolific

than meadow mice, but this is more than made up for in the fact that in their underground life they are less exposed to their enemies among birds and mammals. Like meadow mice, they sometimes become abnormally abundant.

In the eastern part of the United States pine mice do more damage to orchards than do meadow mice, partly because their work is undiscovered until trees begin to die. The runs of meadow mice under grass or leaves are easily found and the injury they do to trees is always visible. On the other hand, depredations by pine mice can be found only after digging about the tree and exposing the trunk below the surface. The roots of small trees are often entirely eaten off by pine mice, and pine trees as well as deciduous forest trees, when young, are frequently killed by these animals.

Methods of destroying field mice or holding them in check by trapping and poisoning are equally applicable to meadow mice and pine mice. If mice are present in small numbers, as is often the case in lawns, gardens, or seed beds, they may readily be caught in strong mouse traps of the guillotine type. These should be baited with oatmeal or other grain, or may be set in the mouse runs without bait.

FIELD MICE AS A FARM PEST

The Ravages of Short-tailed Field Mice in Many Parts of the United States Result in Serious Losses to Farmers, Orchardists, and Those Concerned With the Conservation of Our Forests, and the Problem of Controlling the Animals is One of Considerable Importance.

By D. E. LANTZ

Short-tailed field mice are commonly known as meadow mice, pine mice, and moles; locally as bear mice, buck-tailed mice, or black mice. The term includes a large number of closely related species widely distributed over the Northern Hemisphere. Over 50 species and races occur within the United States and nearly 40 other forms have been described from North America. Old World forms are fully as numerous.

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The runs of meadow mice are mainly on the surface of the ground under grass, leaves, weeds, brush, boards, snow, or other sheltering litter. They are hollowed out by the animals' claws, and worn hard and smooth by being frequently traversed. They are extensive, much branched, and may readily be found by parting the grass or removing the litter. The runs lead to shallow burrows where large nests of dead grass furnish winter retreats for the mice. Summer nests are large balls of the same material hidden in the grass and often elevated on small hummocks in the meadows and marshes where the animals abound. The young are brought forth in either underground or surface nests.

Meadow mice are injurious to most crops. They destroy grass in meadows and pastures; cut down grain, clover and alfalfa; eat grain left standing in shocks; injure seeds, bulbs, flowers, and garden vegetables; and are especially harmful to trees and shrubbery. The extent of their depredations is usually in proportion to their numbers. Thus, in the lower Humboldt Valley, Nevada, during two winters, these mice were abnormally abundant, and totally ruined the alfalfa, destroying both stems and roots on about

18,000 acres and entailing a loss estimated at fully \$250,000.

When present even in ordinary numbers, meadow mice cause serious injury to orchards and nurseries. Their attacks on trees are often made in winter under cover of snow, but they may occur at any season under shelter of growing vegetation or dry litter. The animals have been known almost totally to destroy large nurseries of young apple trees.

Older orchard trees are sometimes killed by mice. In Kansas the writer saw hundreds of apple trees, 2 to 10 years planted, and 4 to 6 inches in diameter, completely girdled by these pests. The list of cultivated trees and shrubs injured by these animals includes nearly all those grown by the horticulturist. The Biological Survey has received complaints of the destruction of apple, pear, peach, plum, quince, cherry, and crabapple trees, of blackberry, raspberry, rose, currant, and barberry bushes, and of grape vines; also of the injury of sugar maple, black locust, Osage orange, sassafras, pine, alder, white ash, mountain ash, oak, cottonwood, willow, wild cherry, and other forest trees.

The injury to trees and shrubs consists in the destruction of the bark just at the surface of the ground and in some instances for several inches above or below. When the girdling is complete and the cambium entirely eaten through, the action of sun and wind soon completes the destruction of the tree. If the injury is not too extensive, prompt covering of the wounds will usually save the tree. In any case of girdling heaping up fresh soil about the trunk so as to cover the wounds and prevent evaporation is recommended as the simplest remedy. To save large and valuable trees bridge grafting may be employed.

Pine mice inhabit chiefly forested regions and are unknown on the open plains. Ordinarily they live in the woods, but are fond of old pastures or lands not frequently cultivated. From woods, hedges, and fence rows they spread into gardens, lawns and fields through their underground tunnels or those of the garden mole. The tunnels of the pine mice are smaller than those of the mole. While the mole feeds almost wholly upon insects and earthworms, and seldom eats vegetable substances, pine mice live upon seeds, roots and leaves. Their harmful activities include the destruction of potatoes, sweet potatoes, bulbs, shrubbery and trees.

They destroy many fruit trees. The mischief they do is not usually discovered until later, when harvest reveals the rifled potato hills or when leaves or plants suddenly wither. While they differ little from meadow mice in general food habits, their surroundings afford them a larger proportion of mast. They are less prolific

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In the eastern part of the United States pine mice do more damage to orchards than do meadow mice, partly because their work is undiscovered until trees begin to die. The runs of meadow mice under grass or leaves are easily found and the injury they do to trees is always visible. On the other hand, depredations by pine mice can be found only after digging about the tree and exposing the trunk below the surface. The roots of small trees are often entirely eaten off by pine mice, and pine trees as well as deciduous forest trees, when young, are frequently killed by these animals.

Methods of destroying field mice or holding them in check by trapping and poisoning are equally applicable to meadow mice and pine mice. If mice are present in small numbers, as is often the case in lawns, gardens, or seed beds, they may readily be caught in strong mouse traps of the guillotine type. These should be baited with oatmeal or other grain, or may be set in the mouse runs without bait.

Trapping has special advantages for small areas where a limited number of mice are present, but it is also adapted to large areas whenever it is undesirable to lay out poison. It is then necessary to use many traps and to continue their use for several weeks. If mice are moderately abundant, from 12 to 20 traps per acre may be used to advantage. These should soon make decided inroads on the numbers of mice in an orchard if not practically to exterminate them. For pine mice the tunnels should be excavated sufficiently to admit the trap on a level with the bottom. A light garden trowel may be used for the necessary digging.

On larger areas where mice are abundant, poisoning is the quickest means of destroying them, and even on small areas it has advantages over trapping. The following formula is recommended:

Dry grain formula—Mix thoroughly one ounce powdered strychnine (alkaloid), 1 ounce powdered bicarbonate of soda, and 1/2 ounce (or less) of saccharine. Put the mixture in a tin pepper box and sift it gradually over 50 pounds of crushed wheat or 40 pounds of crushed oats in a metal tub, mixing the grain constantly so that the poison will be evenly distributed. Dry mixing, as above described, has the advantage that the grain may be kept any length of time without fer-

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On larger areas where mice are abundant, poisoning is the quickest means of destroying them, and even on small areas it has advantages over trapping. The following formula is recommended:

Dry grain formula—Mix thoroughly one ounce powdered strychnine (alkaloid), 1 ounce powdered bicarbonate of soda, and 1/2 ounce (or less) of saccharine. Put the mixture in a tin pepper box and sift it gradually over 50 pounds of crushed wheat or 40 pounds of crushed oats in a metal tub, mixing the grain constantly so that the poison will be evenly distributed. Dry mixing, as above described, has the advantage that the grain may be kept any length of time without fer-

mentation. Distribute the poisoned grain a teaspoonful at a place, taking care to put it in the mouse runs, and at the entrances of burrows. To avoid killing birds it should be placed under piles of straw, weeds or other litter.

The quince is a native of South Europe, where it has been grown 2,000 years. The Greeks and Romans esteemed it highly. "Quinces," wrote Columella, nearly 2,000 years ago, "not only yielded pleasure, but health." Beyond question, the quince was "the golden apple of the Hesperides." It seems to have first been grown in the city of Cydon, in Crete, from whence comes its scientific name, *Cydonia vulgaris*.

The quince is a deciduous tree of small size, with crooked branches and a spreading, bushy head. Its habit of growth is slow. The trees rarely exceed 15 feet in height. The leaves are peculiar in being very downy underneath, and in hanging on late in the autumn. It runs easily into the bush form, as we commonly see it, which form is not at all desirable. In constitution, it is less hardy than either the apple or the pear, but somewhat more so than the peach. The flavor of the fruit is better in warm countries than in cold.

The quince merits high esteem as an ornamental plant. Its large white and pale pink blossoms, which appear later than those of other fruit trees, make it a beautiful tree; nor is it less ornamental in late autumn, when laden with its golden fruit. The autumn colors of the leaves are also attractive.

than meadow mice, but this is more than made up for in the fact that in their underground life they are less exposed to their enemies among birds and mammals. Like meadow mice, they sometimes become abnormally abundant.

In the eastern part of the United States pine mice do more damage to orchards than do meadow mice, partly because their work is undiscovered until trees begin to die. The runs of meadow mice under grass or leaves are easily found and the injury they do to trees is always visible. On the other hand, depredations by pine mice can be found only after digging about the tree and exposing the trunk below the surface. The roots of small trees are often entirely eaten off by pine mice, and pine trees as well as deciduous forest trees, when young, are frequently killed by these animals.

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