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HOUSE SPARROWS

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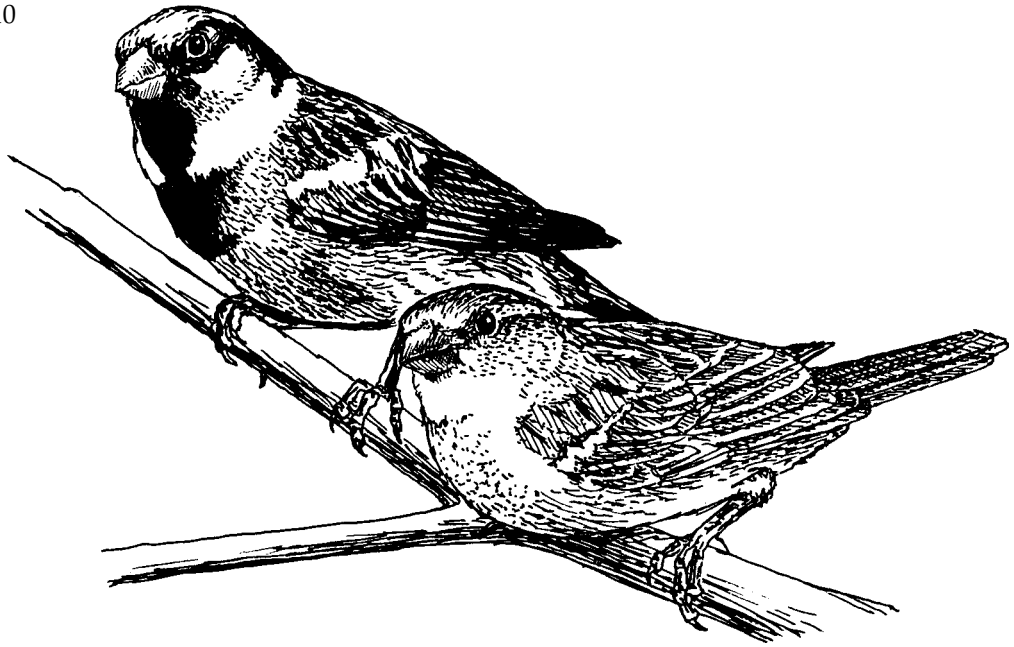


Fig. 1. House sparrow, *Passer domesticus.* Male (left) and female (right).

Damage Prevention and Control Methods

Exclusion

Block entrances larger than 3/4 inch (2 cm).

Design new buildings or alter old ones to eliminate roosting and nesting places.

Install plastic bird netting or overhead lines to protect high-value crops.

Cultural Methods

Remove roosting sites.

Plant bird resistant varieties.

Frightening

Fireworks, alarm calls, exploders.

Scarecrows, motorized hawks, balloons, kites.

4-Aminopyridine (Avitrol®).

Repellents

Capsicum.

Polybutenes.

Sharp metal projections (Nixalite® and Cat Claw®).

Toxicants

Fenthion in Rid-A-Bird® toxic perches.

Trapping

Funnel, automatic, and triggered traps.

Mist nets.

Shooting

Air guns and small firearms.

Dust shot and BB caps.

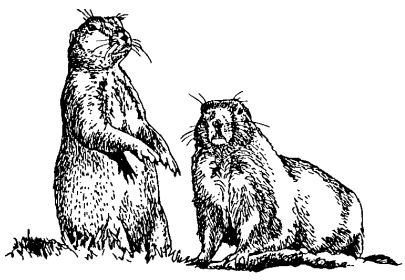
Other Methods

Nest destruction.

Predators.

Identification

The house or English sparrow (Fig. 1) is a brown, chunky bird about 5 3/4 inches (15 cm) long, and very common in human-made habitats. The male has a distinctive black bib, white cheeks, a chestnut mantle around the gray crown, and chestnut-colored feathers on the upper wings. The female and young are difficult to distinguish from some native sparrows. They have a plain, dingy-gray breast, a distinct, buffy eye stripe, and a streaked back. The black bib and chestnut-colored feathers on the wings are the first signs of male plumage and appear on the young birds within weeks of leaving the nest.



PREVENTION AND CONTROL OF WILDLIFE DAMAGE — 1994

Cooperative Extension Division
Institute of Agriculture and Natural Resources
University of Nebraska - Lincoln

United States Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control

Great Plains Agricultural Council
Wildlife Committee

E-101

Range

The house sparrow was first introduced in Brooklyn, New York, from England in 1850 and has spread throughout the continent.

Habitat

The house sparrow is found in nearly every habitat except dense forest, alpine, and desert environments. It prefers human-altered habitats, particularly farm areas. While still the most common bird in most urban areas, house sparrow numbers have fallen significantly since they peaked in the 1920s, when food and wastes from horses furnished an unlimited supply of food.

Food Habits

House sparrows are primarily granivorous. Plant materials (grain, fruit, seeds, and garden plants) make up 96% of the adult diet. The remainder consists of insects, earthworms, and other animal matter. Nestlings, however, are fed mostly animal matter. Garbage, bread crumbs, and refuse from fast-food restaurants can support sparrow populations in urban habitats.

General Biology, Reproduction, and Behavior

Breeding can occur in any month but is most common from March through August. The male usually selects a nest site and controls a territory centered around it. Nests are bulky, roofed affairs, built haphazardly and without the good workmanship displayed by other weaver finches, the group to which the house sparrow belongs. Sparrows are loosely monogamous. Both sexes feed and take care of the young, although the female does most of the brooding. From 3 to 7 eggs are laid, 4 to 5 being the most typical. Incubation takes 10 to 14 days, and the young stay in the nest for about 15 days. They may still be fed by the adults for another 2 weeks after leaving the nest.

House sparrows are aggressive and social, both of which increases their ability to compete with most native birds. Sparrows do not migrate. Studies have shown that 90% of the adults will stay within a radius of 1 1/4 miles (2 km) during the nesting period. Exceptions occur when the young set up new territories. Flocks of juveniles and nonbreeding adults will move 4 to 5 miles (6 to 8 km) from nesting sites to seasonal feeding areas.

Mortality is highest during the first year of life. Few sparrows survive in the wild past their fifth season. One individual, however, lived in captivity for 23 years. While house sparrows are tolerant of disturbance by humans, they can in no way be considered tame. Their success lies in their ability to exploit new habitats, particularly those influenced by humans.

Damage

House sparrows consume grains in fields and in storage. They do not move great distances into grain fields, preferring to stay close to the shelter of hedgerows. Localized damage can be considerable since sparrows often feed in large numbers over a small area. Sparrows damage crops by pecking seeds, seedlings, buds, flowers, vegetables, and maturing fruits. They interfere with the production of livestock, particularly poultry, by consuming and contaminating feed. Because they live in such close association with humans, they are a factor in the dissemination of diseases (chlamydiosis, coccidiosis, erysipeloid, Newcastle's, parathypoid, pullorum, salmonellosis, transmissible gastroenteritis, tuberculosis, various encephalitis viruses, vibriosis, and yersinosis), internal parasites (acariasis, schistosomiasis, taeniasis, toxoplasmosis, and trichomoniasis), and household pests (bed bugs, carpet beetles, clothes moths, fleas, lice, mites, and ticks).

In grain storage facilities, fecal contamination probably results in as much monetary loss as does the actual consumption of grain. House sparrow droppings and feathers create janitorial problems as well as hazardous, unsanitary, and odoriferous situations inside and outside of buildings and sidewalks under roosting areas. Damage can also be caused by the pecking of rigid foam insulation inside buildings. The bulky, flammable nests of house sparrows are a potential fire hazard. The chattering of the flock on a roost is an annoyance to nearby human residents.

Nestlings are primarily fed insects, some of which are beneficial and some harmful to humans. Adult house sparrows compete with native, insectivorous birds. Martins and bluebirds, in particular, have been crowded out by sparrows that drive them away and destroy their eggs and young. House sparrows generally compete with native species for favored nest sites.

Legal Status

The house sparrow is afforded no legal protection by federal statutes because it is an introduced species. A few states, however, may offer them some protection by requiring permits or otherwise restricting control activities. Check with state or local governments before poisoning or shooting house sparrows.

Damage Prevention and Control Methods

Exclusion

Close all openings over 3/4 inch (2 cm) to exclude house sparrows from buildings. Replace the glass in broken windows or cover them with plywood or wire mesh. Block openings, like bell towers, with poultry mesh no larger than 3/4 inch (2 cm). Warehouse doorways that must accommodate human traffic can sometimes be effectively blocked by hanging a flexible wall of 4- to 6-inch (10- to 15-cm) plastic strips in front of the opening. These will not seriously impede human movements yet present an impassable barrier to sparrows. Poultry houses and feeders should be screened to exclude sparrows.

Attach signs flat against buildings to avoid providing roosting sites. Screen or block spaces between existing signs

and buildings. Install slanted metal, plexiglass, or wooden boards (≥45° angle) over ledges, such as those under shopping mall overhangs or on old buildings, so sparrows cannot roost or nest on them. Eaves should be screened if the birds are able to squeeze into them. Block the spaces between window air conditioners and buildings to keep sparrows out. If possible, place fine mesh over architectural decorations on old buildings to prevent roosting. It is much more effective, however, to work with architects on building designs that eliminate ornamental patterns and holes that provide nest sites for sparrows.

Prevent house sparrows from roosting on ivy-covered walls by stringing plastic bird netting (green or black) over the vines. While not as satisfactory as removing the shrubbery, the mesh generally blends in with the plants and still prevents the birds from roosting and nesting in them. Place netting in front of ventilator openings to keep birds out of buildings. Examine ventilators, vents, air conditioners, building signs, ledges, eaves, overhangs, ornamental openings, and ornate designs for potential and existing bird usage and eliminate those sites where practical.

Protect small crop areas with plastic bird netting in situations involving high-value crops, such as grapes, berries, or experimental grains. This approach can be economical if netting is used for several years to protect the site. Leave no openings at the bottom of netted crop areas. Sparrows that get into fields through such openings and are unable to find their way out can cause considerable damage.

House sparrows can be discouraged at bird feeders by installing vertical monofilament lines at 2-foot (0.6-m) intervals around the feeders. Studies have shown that many other species of birds are not affected. Electric wires can be installed on perches of feeders to shock house sparrows when they land. This requires watching the feeder so the current can be activated only when house sparrows are attempting to feed.

House sparrows cannot use bird houses with openings 1 1/8 inches or less (2.8 cm); this size can be used only by wrens. Sparrows are attracted to and often colonize martin apartment houses if they are left unattended. Martin houses should be placed on tall poles in an unobstructed air space necessary for their aerial acrobatics. Block the entrances to martin houses until martin scouts appear in spring, back from their winter feeding grounds. Lower and clean the houses at the end of the breeding season. Bluebirds can be encouraged with nest boxes that have 1 1/2-inch (3.8-cm) entrance holes and a 3 1/2-inch (9-cm) hole bored in the roof, covered with 1/2-inch (1.3-cm) mesh. Bluebirds apparently can withstand wetting, but the sparrows like a tight roof overhead.

Cultural Methods

Destruction of roosting and nesting sites is one approach to solving a sparrow problem. Total removal of shrubs or even trees is an effective but extreme measure. In rural areas, removal of hedgerows adjacent to crop fields will limit the attractiveness of the area to house sparrows, but will also have a negative effect on other wildlife. Remove dead fronds from palm trees to eliminate roosting sites.

Several varieties of small grains are resistant to bird damage. Some sorghum varieties have a high tannin content in the early growth stages. Others have loose seed heads, on which sparrows are unable to perch and feed.

Frightening

No truly successful alarm or distress calls have been found for house sparrows. Frightening devices designed for other species (fireworks, shell crackers, acetylene exploders, and cymbals) will move sparrows from an area for a short period. Sparrows, however, adapt quickly to frightening devices and will not be repelled by sounds for any great length of time unless the sounds are diversified and their locations shifted periodically.

Visual frightening devices can be helpful in some areas where crops are susceptible to damage for only a short period. Of the "scarecrow" devices, kites, balloons, and simulated bird of prey forms that circle above are the most useful. Sparrows can be frightened temporarily by mylar tape or shimmering foil strips. Alternate the use of several audio and visual frightening devices for best control.

4-Aminopyridine (Avitrol®) is registered as a chemical frightening agent because the affected birds react so violently to it that the remainder of the flock is frightened out of the treated area. Usually large numbers of sparrows die before the repellent effect is achieved.

Repellents

Spread tactile repellents such as sticky bird glues on ledges to prevent roosting. These polybutenes are reasonably effective for periods of 1 year or more. They are messy and should be placed on tape or sealed masonry surfaces so they can be removed. They lose their tackiness after they become hardened by changing weather or covered by dust.

More expensive, but longer lasting than chemicals, are sharp metal projections such as Nixalite® and Cat Claw®. These sharp metal projections prevent the birds from roosting comfortably in an area. Sparrows can roost on ledges only 1 1/2 inches (3.8 cm) wide. Therefore, ledges and other niches must be completely covered. Placing monofilament lines at 1- to 2-foot (0.3- to 0.6-m) intervals may help to repel house sparrows from roosting sites. Electrified wires strung over roost sites have been effective, but it is an expensive alternative.

Granular formulations of capsicum are federally registered for repelling sparrows from certain fruits, vegetables, and grain crops. Read the product label for specific information.

Toxicants

Fenthion is the only toxicant registered for controlling house sparrows. It is applied by using Rid-A-Bird® perches. These metal perches have a wick in the center that delivers the liquid toxicant to the feet of birds as they perch. The

habits of the birds in individual situations must be studied to determine the most effective placement of the perches. This is an effective and reasonably selective method when used inside buildings. Use extreme care to avoid spillage of the toxicant. Fenthion can be absorbed through the skin, so applicators must be aware of the toxicity hazards.

State pesticide registrations vary. Check with your local extension or USDA-APHIS-ADC office for information on toxicant and repellent use in your area.

There are no fumigants registered for use against sparrows.

Trapping

Trapping is probably the most widely used method in attempting to reduce house sparrow populations in a small area. As most bird traps normally are live traps, nontarget species can be released unharmed. There are more types of traps available for sparrows than for any other bird. Sparrows that have been trapped once often become trap-shy. Therefore, traps alone are insufficient to remove an entire sparrow population.

Funnel Traps. These are the most commonly used traps available (Fig. 2). While funnel traps are probably the most easily entered of any trap, sparrows can also escape from them with relative ease. Thus, they should be checked frequently and the birds removed. Where possible, decoy individuals should be penned in separate compartments inside these traps

Automatic Traps. These are counterbalanced multicatch traps (Fig. 3). House sparrows enter a compartment alone to feed on bait that is placed on a shelf in the trap. Their weight causes an "elevator" to drop to the lower level where the bird "escapes" into a closed cage. Without the bird's weight, the counterbalanced "elevator" springs back into the original position ready for another passenger. It is more difficult to entice the birds into this type of trap than into the funnel traps, but the final catch is probably greater as it is almost impossible for the sparrows to escape.

Triggered Traps. These traps are limited by the number of house sparrows they can catch at one time (Fig. 4). In some cases the traps are not automatic and consequently require a watcher to tend them and spring them at the proper moment. The "clap trap" is one of the oldest bird traps, used first by ancient Egyptians.

Mist Nets. A final method of trapping is to entangle flying house sparrows in a fine net known as a mist net. Mist nets are placed across the flight paths of the birds in front of a dark background. The nets cannot be seen until the birds blunder into them, become entangled, and are unable to extricate themselves. Mist nets also require considerable amount of time to set up and tend, and they are illegal in some states. Federal permits are required for trapping birds in mist nets. Nontarget species may be captured and must be removed and released immediately.

Shooting

Shooting with air guns or low-powered firearms can be used with some success where local ordinances permit. Sparrows quickly become wary of a human holding anything resembling a firearm, so shooting from a blind is recommended whenever possible. An old method is to place grain in a windrow and shoot into a baited flock with an open-choke shotgun. Special ammunition known as "dust shot" (a .22 long rifle shell filled with No. 10 shot) or "BB caps" (a lead slug in a short .22 shell) are available. The effective range of these specialized tools, however, is extremely limited.

Other Methods

Nest Destruction. Discourage house sparrows from using an area by removing nests and destroying the eggs and/or young. House sparrows are very persistent, so this operation must be repeated at 2-week intervals throughout the breeding season. Use a long insulated pole with a hook attached to one end to remove nests that are located in high places. Nest destruction is also recommended in shopping malls and around building signs in urban areas. The nesting materials should be collected and removed to make it harder for the birds to find materials for new nests.

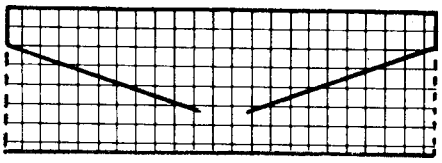
Predators. Cats and sparrows are both abundant in the same human-altered habitat. A study in one English village found house cats reduced a resident house sparrow population by 80% during a year. One farmer has devised a system using predation to control house sparrows by building catwalks around the inside of his barn at rafter level. Scrap lumber was used to provide his farm cats access to locations where sparrows usually roosted or nested. Once the cats were able to patrol the barn, the sparrows quickly vacated the building.

Economics of Damage and Control

Barrows (1889) published the results of a US Department of Agriculture survey concerning the status of house sparrows in 1886, about 35 years after their successful introduction. By this time, house sparrows were recognized as a detriment to agriculture and native birds. Kalmbach (1940) analyzed 8,004 sparrow stomachs and found that only 20% of the foods (primarily insects) taken by adult sparrows were beneficial to humans, 25% were of neutral importance, and 55% were definitely detrimental to human interests. While 59% of nestling foods were beneficial to humans and only 28% injurious, he pointed out that their impact lasted for only 10 to 12 days.

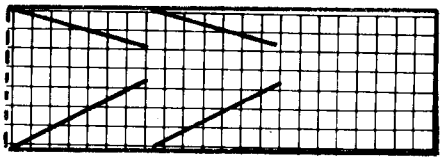
A recent survey of bird problems across the United States indicated that 25% of the respondents in cities had problems with house sparrows, behind pigeons (71%), blackbirds (54%), and starlings (42%) (Fitzwater 1988). Extensive measures with traps are not cost-effective.

National live trap



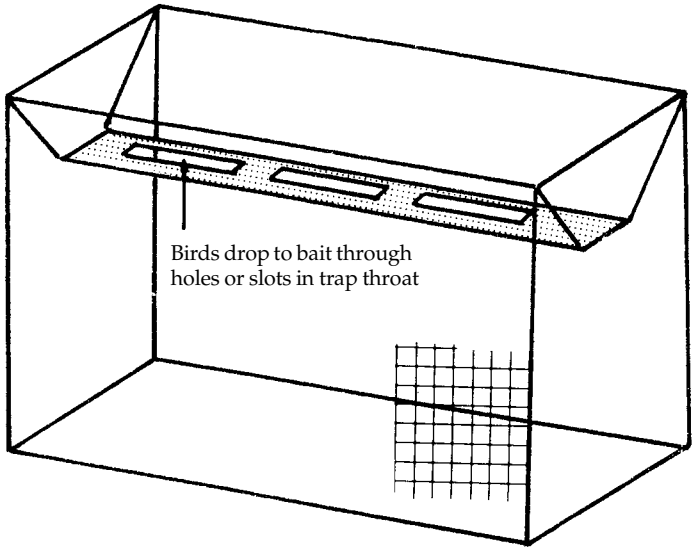
Side view

Vail trap

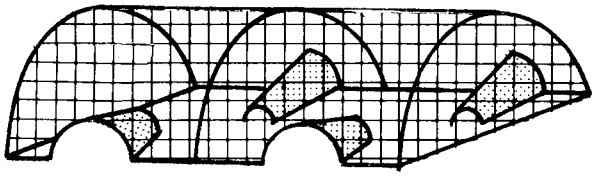


Side view

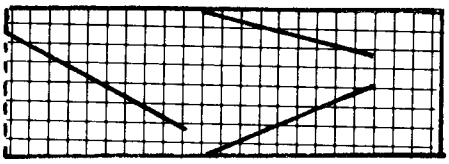
Modified Australian crow trap



Eclipse sparrow trap (European)



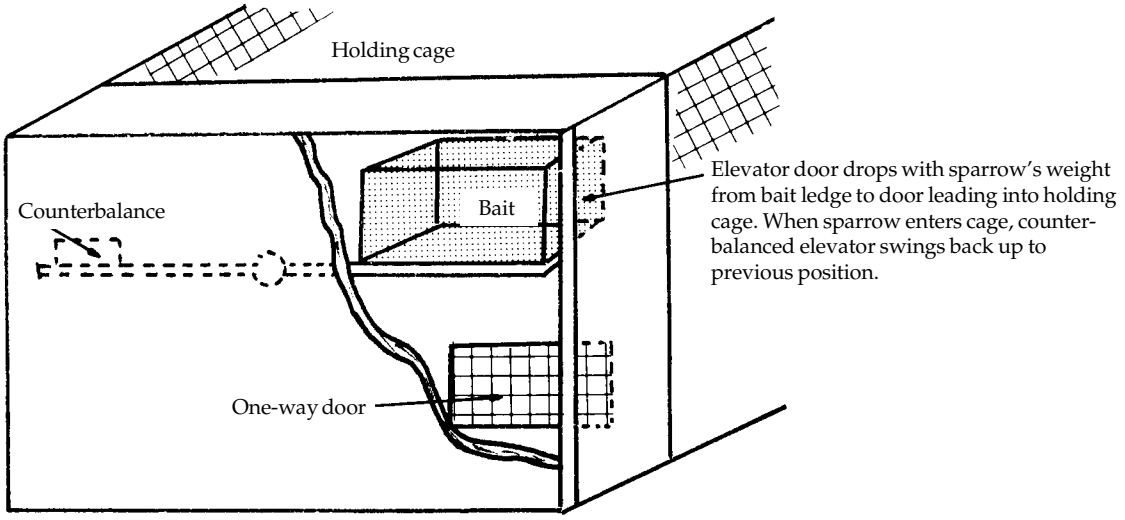
US Fish and Wildlife Service
funnel trap plan



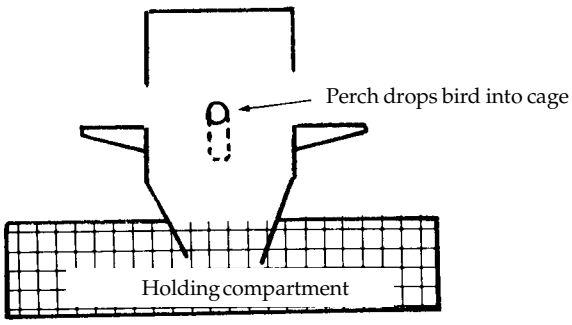
Side view

Fig. 2. Funnel traps

Havahart elevator trap



Last Perch trap



Tesch nest box trap

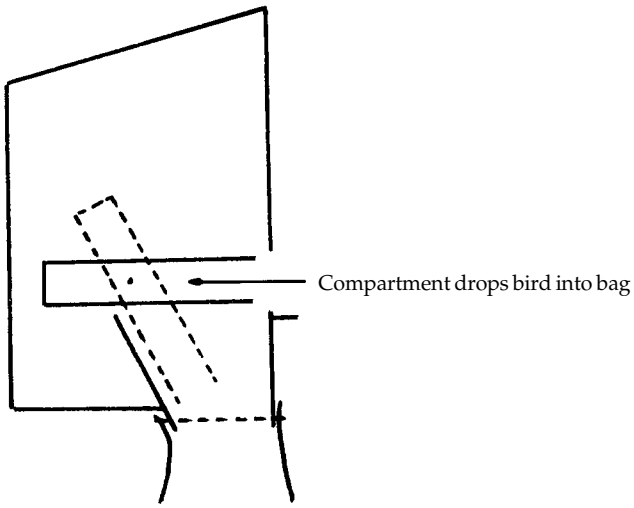
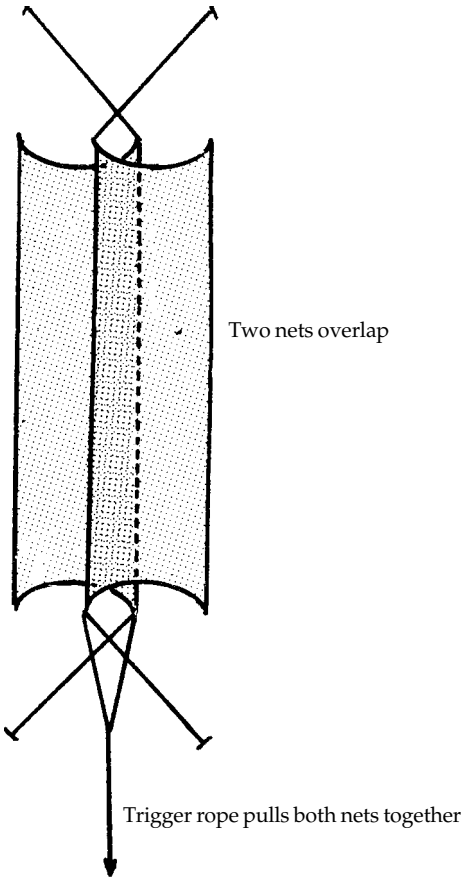
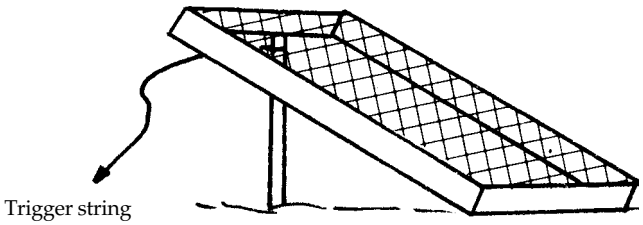


Fig. 3. Automatic traps

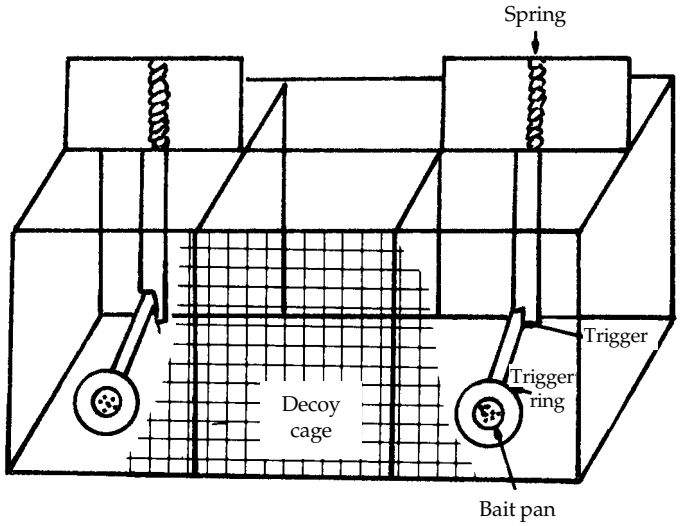
Clap trap



Sieve trap



Trio trap



Nest box trap

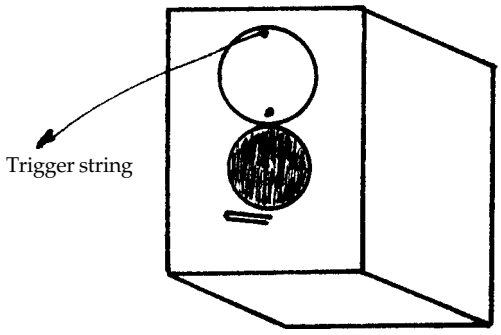


Fig. 4. Triggered traps

Acknowledgments

Figure 1 by Emily Oseas Routman.

Figures 2 through 4 by the author, adapted by Jill Sack Johnson.

For Additional Information

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