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Bat Control

Richard W. Carter

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BAT CONTROL

Bats are the only group of mammals which are capable of true flight. The bones of the bat's hands (forelegs) are lengthened to support leathery membranes and form a true wing. They are expert flyers and are adept at locating prey (insects) and avoiding obstacles even in darkness. They emit sounds, not audible to humans, and are able to direct their flight by the echoes or reflections of these sounds. Bats also have good eyesight.

Bats live in all parts of the world except those areas which are always covered with snow and ice. About two thousand kinds of bats are known, and they range in size from those with a four-inch wingspread to some whose wingspread may be as much as five feet. Roosting places for bats are as varied as the areas in which they live, but they generally prefer dark, secluded places. Their choice of roosts has often led them to choose areas in and under buildings. Bats which infest buildings inhabited by man present a serious nuisance and cause health and economic problems. Because of this choice of roosts, most efforts in bat control have been directed toward repelling them from buildings or exterminating them.

Frequently, control can be accomplished by the use of repellents. Bats dislike the odor of naphthalene and paradichlorobenzene, two chemicals commonly used as moth and insect repellents. When the roost is located in attics or other closed spaces that can be reached easily, either of these materials can be used to drive them out. Three to five pounds of naphthalene flakes will usually be sufficient to treat the average attic. This material should be sprinkled liberally over the entire area or hung in bags near the roosting area. The odor will usually cause the bats to leave within a short time, even in broad daylight.

These repellents will probably be most useful in temperate zones, because it has been found that these materials vaporize too rapidly in the high temperatures normal to tropical regions. Roof temperatures often reach more than 130°F. The temperature in the roost areas may fluctuate as much as 75° within a 24-hour period. This possible temperature fluctuation causes metal roofs to expand and contract so that "bat-proofing" plugs or seals of wood, concrete or plaster are loosened and made ineffective.

The single most effective measure to eliminate bats is to eliminate their means of access into the house. This can be best accomplished during the original construction of the house by proper design to eliminate any openings through which bats might enter. No opening should be as large as one-quarter inch. Lacking the advantage of such house construction, openings may be closed after the bats are eliminated. When the bats have left, any dead bats must be removed along with any other remains such as droppings and food residues. Otherwise, these will attract other insect pests, or possibly a new colony of bats.

Dead or alive, bats should never be handled with bare hands. Wear gloves or use a stick, a towel, or pliers to handle any bats. Bats may carry some bacterial infections, but most importantly, may carry rabies.

Many methods have been tried to control bat populations with varying degrees of success. Among some of the less successful methods are the burning of sulfur or the evolution of hydrogen cyanide gas which are hazardous to the operators and house occupants and have only a temporary effect since they afford no residual activity. Various methods are recommended in various areas such as hanging spiky lime twigs where bats congregate, burning dried pepper pods, erection of lights (both electric and kerosene) frequently used in combination with owl or hawk wings to produce moving shadows, and spreading out pineapple skins. These are generally ineffective. Sticky bird repellents are not effective because they are almost impossible to apply in all areas, and, especially in tropical climates, dry out in the high temperatures. "Gamexana" smoke generators have also been found to be of limited use since they supply little residual action, and may be hazardous to the operators.

There is a system of repelling or exterminating bats which has been demonstrated to be effective. Attic spaces may be treated with an insecticide spray using a high volume spray, as supplied by commercial equipment. The use of B.H.C. (benzene hexachloride) 50% wettable powder, at the rate of one pound per gallon of water, was effective in immediately repelling bats from the houses. The application of twelve gallons of this spray in the attic space of houses with a floor area of about 1400 square feet can be expected to be effective. The spray equipment used was a conventional, high-volume, power-drive sprayer with a hose line and jet long enough to reach all areas of the floor and roof space from access openings.

Although B.H.C. is considered to be a repellent, it is expected that some bats will die. The typical house bats (*Myotis*) are insectivorous and considered to be biologically useful, so that a repellent may be more desirable than a toxicant. Five percent pentachlorophenol, a commonly used wood preservative, also has a certain amount of repellency.

If it is considered desirable to exterminate the bat colony the same system and techniques may be used, but with the substitution of D.D.T. 50% wettable paste for the B.H.C. With the use of D.D.T. (or B.H.C.) the bat population will probably fall to zero in three to four weeks, and these agents may be expected to have a residual effect for up to three years.

The application of these insecticides inside the enclosed roof spaces can be extremely difficult and hazardous, so that the method used must be adapted to the building, the operators, and the results desired. Following any treatment, a thorough cleanup and bat-proofing should be considered necessary adjuncts.

A second group of bats, which do not normally roost in houses but are nuisances in and around houses, are the fruit-eating bats. These bats

may be attracted by fruit growing near a house or by fruit left exposed in the house. People living in tropical regions object to screening because it may cut down on air circulation and because of the cost. However, if the hazard of bat-borne disease (rabies) is of concern, the use of a mosquito net is advised.

These fruit bats will often fly through the house, particularly if edible fruit is exposed to attract them. Fruit should thus not be left in the open. It will usually be noted that the bats will have a specific flight pattern, entering and leaving the house each night by the same route and at the same time. They may also temporarily roost in some part of the house and leave before daylight. The bats may be discouraged by placing some obstruction in the bat's flyway by closing windows, jalousies, shutters or louvers, if any. This must be continued for at least ten days.

If a temporary roosting place can be located, newspaper or aluminum foil may be hung over these spots to make it difficult for the bats to cling to the surface, and to make a noise when the bats strike the surface, frightening them away.

Light left burning are not a strong deterrent. When the food supply is exhausted, the bats will leave, but will probably return when it is again available. Bats entering the house may be killed, using extreme caution to avoid being bitten.

Occasionally, bats found roosting in a tree may be shot, but there is no assurance that these bats are the ones entering the house. Cutting down the trees will not eliminate the problem.

Experts in bat control will at times eliminate fruit bats with poison. A banana containing strychnine is hung in the area, and any bats biting into this fruit will be killed. This is also a dangerous poison to humans, and should never be used near children or pets. (Some African fruit bats are resistant to this poison). Only experienced people should handle this poison.

Where bats are causing damage to a fruit crop, they may be discouraged or driven off by burning sulfur sticks - or an equivalent - around the trees. This process would have to be repeated at frequent intervals.

Each bat problem will be different from others and will require a separate solution. Bats are receiving increasing attention and now, more effective solutions to the problems they create may be developed. It has been suggested that some of the new efficient rodenticides such as "Warfarin" may be adapted to use in this field.

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