

AN IMPROVED METHOD FOR COLLECTING BIRD ECTOPARASITES

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Abstract.—A simple, quick method for removing ectoparasites from birds is demonstrated. The apparatus is easy to build, light and easy to use under field conditions. The apparatus is most useful for removing large ectoparasites such as louse flies from wild birds, but it can also be used to remove smaller ectoparasites such as lice, fleas and mites.

METODOLOGÍA MEJORADA PARA COLECCIONAR ECTOPARÁSITOS DE AVES

Sinopsis.—Se muestra un método sencillo y rápido para remover los ectoparásitos de las aves. El aparato es liviano, fácil de construir y de usar en el campo. El aparato es muy útil para remover ectoparásitos grandes tales como moscas parásitas de aves silvestres, pero también se puede usar para remover ectoparásitos más pequeños como piojos, pulgas y ácaros.

Many methods have been devised for trapping birds without harming them, but techniques for collecting bird ectoparasites are less developed. In many cases, ectoparasites were collected after first killing the birds. The first apparatus for collecting bird ectoparasites without harming the birds was designed by Williamson (1954). Collecting ectoparasites such as louse flies (Diptera: Hippoboscidae) without harming the bird is important not only for the bird's sake, but for the collection itself, as rough handling of the host may cause the flies to escape.

The following method is a modification of an apparatus designed by Williamson (1954) and is aimed at shortening the processing time, thus allowing more birds to be examined for ectoparasites. In the original method, each bird is placed in a glass jar with the head out. Chloroform vapors in the jar kill the parasites, which fall to the bottom of the jar and can be collected. When many birds are caught, this process can take hours. This problem was solved by Fowler and Cohen (1983) by using a large number of jars, and holding the birds with a retaining clip rather than by hand. This method enables processing many birds at a time. Another solution to the problem, which shortens the processing time, is described below.

APPARATUS DESCRIPTION

The apparatus consists of a glass jar with four holes halfway up the sides (Fig. 1). The holes are about 20 mm in diameter, and are spaced evenly around the circumference. The holes are covered with a rubber ring, about 25 mm wide. Four round holes, 3-4 mm in diameter, are made in

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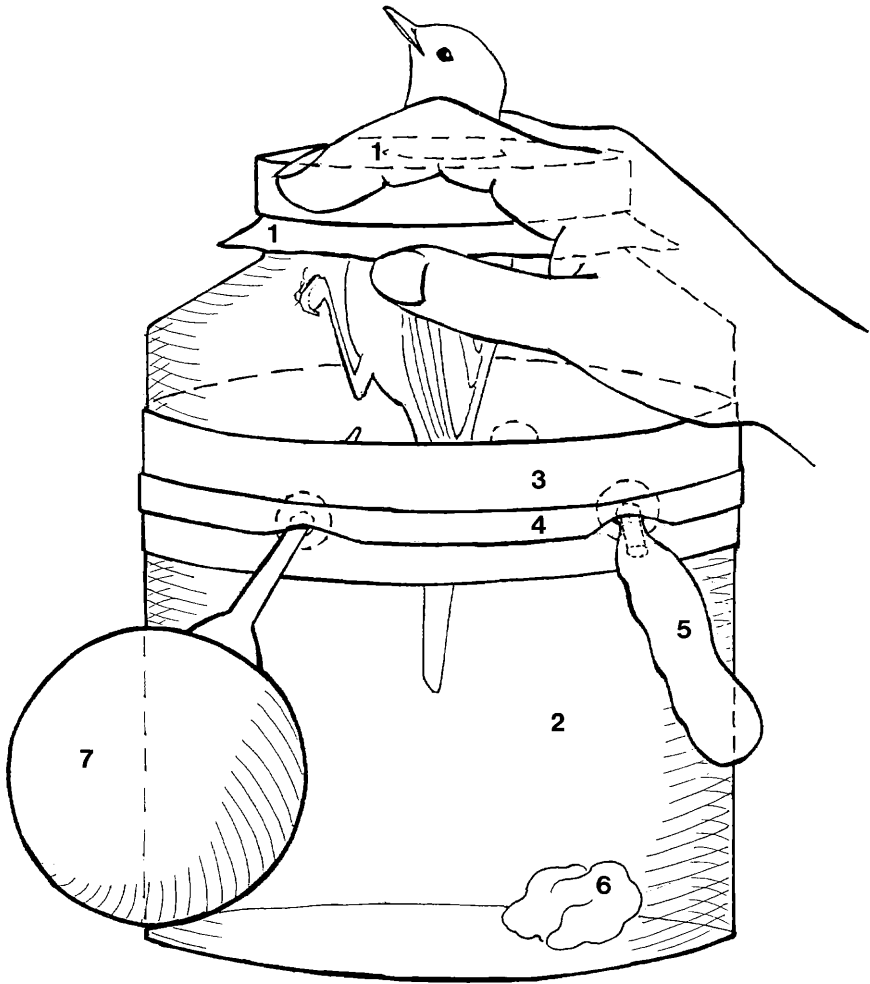


FIGURE 1. Ectoparasite removal apparatus. (1) Nylon fabric collar; (2) Glass jar with 4 side holes; (3) Inner rubber ring (with 4 holes); (4) Outer rubber ring; (5) Pressure balancing balloon; (6) Chloroform soaked cotton; (7) Rubber squeeze bulb with plastic pipe.

the rubber ring, so that they will be positioned over the middle of the holes in the glass jar. The holes must be made while the rubber ring is held taught in order to obtain a rounded shape. A second rubber ring, 10 mm wide and without holes, is placed on top of the first one, covering the four holes in the first ring. The jar's lid is a screw type, the center of which has been removed. A collar made of nylon fabric (the type used for umbrellas) with a hole in the middle the size of the bird's head is placed between the lid and the jar. Several collars are made to suit the

skull widths of different birds. The entire apparatus can be made in different sizes to suit different birds.

TECHNIQUE

The bird is placed inside the apparatus so that its body is inside the jar and its head is outside. A piece of cotton wool soaked with chloroform is placed in the jar in order to kill the parasites. A rubber squeeze bulb with a solid plastic pipe is inserted in the side holes by moving the second rubber ring to the side and pushing the pipe through the hole in the first rubber ring. By squeezing the rubber squeeze bulb, chloroform vapors are blown between the bird's feathers. The dead flies are blown off the bird's plumage within a few seconds of the beginning of the procedure. Vapor can be blown from all four holes, exposing the bird from all angles. The holes that are not in use are sealed immediately by the second rubber ring when the pipe is removed. In order to prevent increased pressure inside the jar while the air is forced in, a balloon attached to a plastic pipe is inserted into one of the holes. The balloon expands when the rubber bulb is squeezed, preventing a rise in pressure. This prevention is very important because an increase in pressure could force chloroform vapors to escape between the collar and the bird's neck, endangering both birds and collectors, and could cause a rapid decrease in the chloroform concentration within the jar, reducing the efficiency of the apparatus.

DISCUSSION

My modification reduces the time required for the chloroform vapors to penetrate the feathers and kill the parasites, and for the parasite to fall from beneath the feathers to the bottom of the jar. It is also less traumatic for the bird, because the bird is hand-held for a short period, instead of being held by a clip for an extended period. In addition it is easy and safe to use under field conditions.

ACKNOWLEDGMENTS

I thank Amnon Freidberg, Oren Hasson and Ruth Ann Yonah for their helpful comments, and Adi Gancz for the preparation of the apparatus drawing.

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Received 16 May 1994; accepted 25 Jul. 1994.