inhalent anesthetic, methoxyflurane, was used to anesthetize the rabbits. Methoxyflurane (3 cc) was poured over cotton in a nose-cone and the nose-cone was then placed over the rabbit's nose. Anesthesia was generally achieved in about two minutes. Two lateral or flank incisions were made on each animal. The incision sites were located on the laterally recumbent animal midway between the end of the last rib and the rounded portion of the thigh and 3 cm ventral to the longissimus dorsus muscle. After choosing the incision site the skin was exposed by parting the fur with a pair of needle-point forceps. The site was saturated with 70 percent ethyl alcohol. The fur was not shaved. A drape was placed over the incision site. An incision 3 cm in length was made in the skin. The external oblique and internal oblique muscles were incised by blunt dissection, and an incision was made through the peritoneum. The ovary was located by gently probing with a blunt forceps for the fat pads associated with the reproductive tract. The mesosalpinx was manipulated when withdrawing the ovary from the abdominal cavity to avoid damage to the oviduct. After data on ovarian structures was recorded the ovary was replaced in the abdominal cavity. The incision in the peritoneum was sutured with chromic catgut (00). The muscle layers were also sutured with this material and the skin incision was closed with 14 mm Michel wound clips. Recovery from anesthesia was generally achieved in periods ranging from 10 to 60 minutes. Twenty-three cottontail rabbits treated to induce ovulation by hormone treatment were subjected to laparotomy in order to evaluate ovarian response. Of the 23 rabbits scheduled for laparotomy two flank laparotomy examinations were successfully conducted on each of 22. One rabbit died due to dislocated cervical vertebrae sustained because of faulty restraint during application of anesthetic.

THE USE OF INSECTICIDE-GENERATING COLLARS FOR THE INVESTIGATION OF PARASITIC DISEASE IN WILDLIFE POPULATIONS

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Extensive literature is available on the role of ectoparasites as disease vectors and the incidence of ectoparasite infection which exists in wildlife populations. However, relatively little is known concerning the role of ectoparasites as etiological agents of disease. One technique which may prove of value in elucidating this role is the use of insecticide-generating collars to eliminate ectoparasites from wildlife populations.

In our research we have used an insecticide-generating collar containing 2, 2 dichlorovinyl dimethyl phosphate (Sergeant's Sentry Dog Collar). We have tested these collars on both the cottontail rabbit, *Sylvilagus floridanus*, and the gray squirrel, *Sciurus carolinensis*.

The standard manufacturer's collar was subdivided into four separate collars. One of these was fastened with the buckle provided by the manufacturer and the remaining three were secured with steel rivets applied by a rivet gun ("Pop Rivetool, USM Corporation). A sharp pointed punch was used to make a hole in both ends of the collar for passage of the rivet. Rabbits were physically restrained with their eyes covered while collars were attached, whereas squirrels were anesthetized during collar application. To insure snugness of fit, collars were fastened tightly with a finger placed between the animal's neck and the collar. When fastened, the collar was tight enough that a foot could not be caught and loose enough that it allowed normal air passage and caused minimal discomfort to the animal. So that future growth would not result in overly tight collars, they were not applied to rabbits weighing less than 700 grams or to subadult squirrels.

In treatment periods varying in length from 30 to 90 days we have detected no adverse effects attributable to insecticide-generating collar applications. In addition, the collars have been shown completely effective in eliminating ectoparasites on cottontail rabbits that were confined in outdoor enclosures (Jacobson and Kirkpatrick 1973). Other evidence we have collected indicates the presence of insecticide-generating collar treated rabbits within a population will reduce ectoparasites on untreated rabbits as well (Jacobson 1973). Studies are now in progress to evaluate the effectiveness of insecticide-generating collars in eliminating ectoparasites of the gray squirrel.

Several authors have attempted to use insecticides in reducing ectoparasite burdens of wild animal species (reviewed by Miller et al. 1970). The techniques or pesticides used by these authors have one or more disadvantages in applied research on natural wildlife populations. Either they are expensive, in terms of man hours or monetary outlay involved, have undesirable environmental side effects, can not be used under natural conditions, or are in themselves ineffective in achieving control. We feel the use of the insecticide-generating collar circumvents all of these problems. It is easily applied; effective for extended periods of time; relatively inexpensive; has little if any adverse environmental side effects; and most importantly, can be used under controlled laboratory, semi-natural, or natural environmental conditions.

Although in our research we have tested insecticide-generating collars only on the cottontail rabbit and the gray squirrel, we feel their use could be extended to a variety of wild animal species. Areas of research which should be particularly well adapted for their use include comparative studies into the effects of ectoparasites on host physiology, nutrition, reproduction, mortality, and behavior. They also should be of value in further studies involving the role of ectoparasites as disease vectors.

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