

to each squirrel in the thigh area. Animals were then placed in small recovery cages until they regained consciousness and then were transferred to outdoor pens.

Fifty-two laparotomies were performed during this research, 45 of which were completely successful. None of the squirrels expired during the laparotomy. Of those that died during the recovery phase, two appeared to be in an emaciated condition before surgery, two died of complications resulting from two or more successive laparotomies performed on them at two day intervals, and three died as an apparent result of infections arising after loosening of their wound clips by chewing or scratching. The incision on the animals usually healed completely within 3 weeks.

Methoxyflurane proved to be a quite satisfactory anesthetic. None of the squirrels appeared to suffer complications because of its use. In a few instances during laparotomies an animal would stop breathing but maintain a heartbeat. This condition may have been brought on by periods of inadequate ventilation while administering the anesthesia. To restore normal breathing, a plastic tube was placed over the squirrel's mouth and nostrils and the investigator rhythmically blew air into the lungs. After each expansion of the lungs, the chest cavity was depressed by hand. This procedure continued until the squirrel regained its normal breathing pattern.

The average time taken to anesthetize each animal (from first exposure to the anesthetic until the animal lost consciousness) was approximately 8-9 minutes. Additional anesthetic was applied as needed during surgery. The average time to complete each laparotomy was 35 minutes and the average recovery time from the anesthetic after the operation was 32 minutes. The recovery time ranged from 9-60 minutes.

EXAMINATION OF OVARIES IN LIVING COTTON TAIL RABBITS BY LAPAROTOMY

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Techniques which allow collection of data from wild animals without sacrifice of the subject animal are particularly useful in wildlife science as the animals studied frequently are difficult to acquire. Also, such techniques allow multiple sampling from individual animals. Laparotomy facilitates examination of the female reproductive organs in the living animal without sacrificing the animal. A laparotomy technique suitable for use with cottontail rabbits (*Sylvilagus floridanus*) is described. Prior to the operation each animal was restrained in a specially constructed wooden box in which the rabbit's head was exposed. An

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*.