MOVEMENTS OF A BLIND RACCOON

A blind adult male raccoon (*Procyon lotor*) was live-trapped, radio-tagged (Mech *et al.*, 1965), released 17 November 1967, and radio-tracked until killed by a trapper 3 months later. Two veterinary opthamologists examined the blind animal on 29 December 1967; their diagnosis indicated bilateral lens luxation with secondary glaucoma, resulting in corneal edema and likely complete retinal degeneration with blindness.

Movements of the blind raccoon during two 1-week periods (19 to 26 November and 1 to 8 December 1967) were compared with those of a normal adult male raccoon radio-tagged 16 October 1967. Locations (fixes) were obtained with an automatic radio-tracking system (Cochran *et al.*, 1965). When usable tracking information was available, the location of each animal was determined once every 5 minutes. Errors in estimated locations of the animals caused by unsynchronized rotation of the antennas (Sargeant *et al.*, 1965) were compensated by a moving average of three successive fixes during periods when the animal was active. Travel rates and duration of travel periods were computed for series of successive fixes when activity was indicated by fluctuations in the recorded signal. A CDC 6600 computer was used to aid in analysis of the data.

Activity patterns, travel rates, length of travel periods, and minimum size of home range (Mohr, 1947) were compared for the two raccoons. The total period of activity was similar for the two animals for the two 1-week periods (Fig. 1). Onset of nocturnal activity by the blind animal was earlier during both periods, whereas cessation of nocturnal activity by the blind animal was later the first week and earlier the second week. Breaks in the activity patterns indicate periods of no movement.

The blind animal had a lower percentage of movements at rates less than 30 feet per minute and a higher percentage of movements at rates between 31 and 80 feet per minute (Fig. 2, upper). Differences in the distribution of rates of travel were significant ($X^2 = 37.23$, 14 df, $P < 0.01$). An animal's location relative to the tracking towers may bias rates of travel, but both animals occupied the same area part of the time, and any bias should be equal. Differences in the distribution of length of movement periods (Fig. 2, lower) were not significant ($X^2 = 3.27$, 3 df, $P > 0.05$).

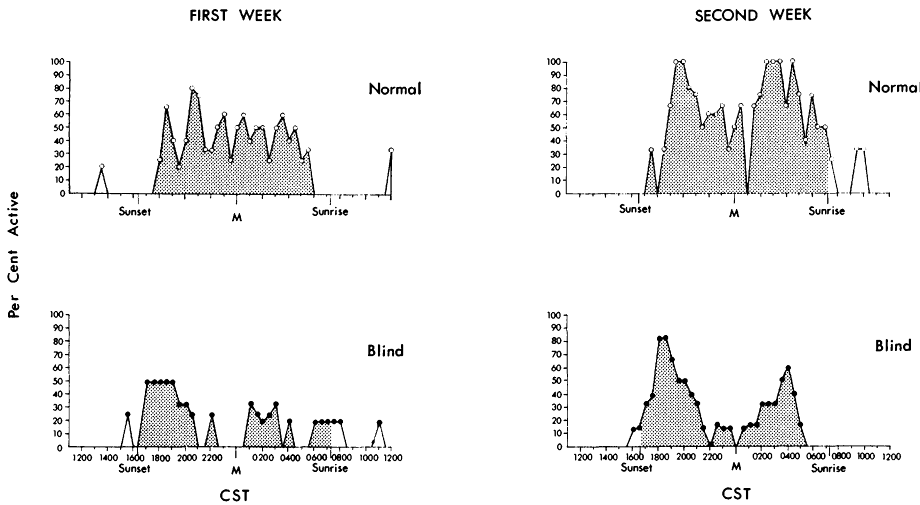

FIG. 1.—Activity patterns for a blind and a normal raccoon for two 1-week periods (19 to 26 November, 1 to 8 December 1967). Per cent active is an index of activity based on the per cent of time active during ½-hour periods summed over 7-day intervals.

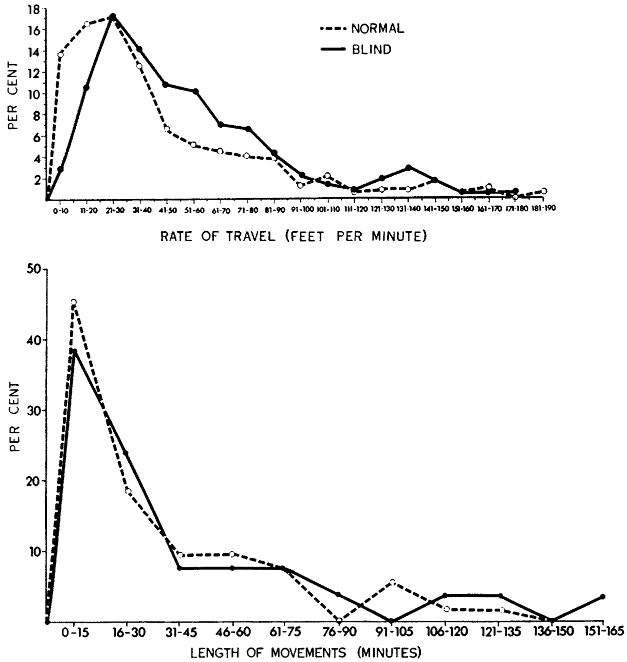

FIG. 2.—Comparison of frequency distributions of travel rates (upper) and duration of movements (lower) between blind and normal raccoons for 19 to 26 November and 1 to 8 December, 1967.

Home ranges of the blind and the normal raccoon measured 4 miles by 2 miles and 3 miles by 1 mile, respectively. Daily rest sites, as also reported by Mech *et al.* (1966), included swamps, cultivated fields, and den trees.

On five occasions the blind animal was seen traveling on roads for distances of ¼ to ½ mile. His behavior on roads was normal, but off roads his behavior was erratic, traveling in overlapping circles and in rapid zig-zag patterns, followed by travel in a relatively straight line. Nevertheless, the blind animal moved about the area with no apparent difficulty. Tracks made in snow indicated that he rarely bumped into trees or other objects. He was able to return to a specific rest site; on 20 December 1967 he traveled a distance of 2½ miles in less than 8 hours to a rest site he had used two days earlier.

These data indicate that some mechanism other than sight enabled the blind raccoon to orient within a specific area. Differences between the blind and normal raccoons in activity patterns, travel rates, length of movement periods, and minimum size of home ranges did not appear to be functionally significant and were probably no greater than would be found among normal raccoons.

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EFFECT OF MEDROXYPROGESTERONE ACETATE (PROVERA) ON PRODUCTIVITY IN CAPTIVE FOXES

Dziuk (1960) reported that medroxyprogesterone acetate (provera) inhibited matings in white mice, and Elder (1964) reported that ovulation was inhibited temporarily in pigeons (*Columbia livia*) fed 0.1 per cent provera in the diet. We report here on the use of provera for suppressing productivity in captive foxes (*Vulpes vulpes*).

Twenty male-female pairs of amber, ranch-bred foxes, over 1 year old and kept under normal daylight conditions in outdoor pens in central Wisconsin, were used in 1966 and 1967 for this study. Pairs were kept in separate pens that were 37.5 by 37.5 feet. Each vixen had produced a litter in the year preceding the year of treatment.

Ten cc of corn oil containing 50 mg of provera were sprayed on 2 pounds of the regular diet and mixed into the food thoroughly for 5 minutes. This mixture was separated into two, 1-pound packets before feeding, and both packets of the treated food (0.006 per cent provera) were placed in the pen of one pair of foxes receiving treatment. The control pairs received a similar diet containing corn oil only.

In 1966 five pairs each were offered 25 mg provera per fox per day during two 4-day periods (3 to 6 January and 24 to 27 January), and five other pairs each received 25 mg per fox per day during one 4-day period (24 to 27 January). Ten pairs served as controls. In 1967 another group of 10 pairs each received 25 mg provera per fox per day during a 4-day period (23 to 26 January), and 10 pairs again served as controls. Foxes were not fed for 3 days before and after treatment to insure maximum consumption of the test compound.

Vixens accepted the experimental food as readily as males, and there was no evidence of foxes rejecting the test diet. Small portions (about 1 pound) were not consumed by each of two treated pairs and one control pair during the period of 3 to 6 January 1966 but all food was consumed by these pairs within 3 days after treatment. In 1967 each pair consumed all food within 24 hours.

The peak of breeding activity for foxes at the ranch occurs during the final 2-week period in January, and 90 per cent of the pups are born between 10 March and 10 April (Edward Fromm, personal communication). Thus, most of the experimental vixens were expected to be in or near estrus during the late January treatment.

The estimation of the effect of provera on reproduction was based on the comparative numbers of pups produced during the first post-treatment whelping season by treated and by control vixens. The productivity of vixens treated in 1966 was recorded during the 1967 whelping season to determine longterm effects of provera on reproduction.

Production of pups by the treated foxes was significantly lower than for controls for the first post-treatment whelping season. The number of pups per female averaged 2.2