

Systematics, Zoogeography and Distribution of the Mammals
of Wyoming, with Especial Reference to the Northern
Pocket Gopher, Thomomys talpoides
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During the period from July 16 through August 29, a general survey of the mammalian fauna of the northwestern part of Wyoming and its various habitat relationships was made in conjunction with two separate continuing projects. These projects are a systematic study of the mammals of Wyoming, including the Grand Teton and Yellowstone National Parks and a study on the taxonomy and distribution of the pocket gophers of Wyoming.

Investigations included the collection of specimens of mammals as well as data on the various ecological situations within the area, in order to correlate the current mammalian distribution (geographic and ecologic) with those data collected by Negus and Findley during their study of the area in the middle 1950's. As this was the first year of a long range program, no attempt was made to re-establish the Negus study plots, nor to make direct numerical comparison with his data. Collection of some 80 specimens of 13 species, and observation in many parts of Grand Teton Park show no radical departure from their reports.

Facilities of the Station were utilized for the processing of microscope slides of bone marrow smears from pocket gophers, to investigate the variation in their chromosome number and structure (Karyotype). Knowledge of the karyotype of individual animals is useful in understanding reproductive compatibility and isolation, and therefore in understanding variations of evolutionary importance. The study of karyotypes has proven to be of great value in the study of evolutionary relationships between animals. One hundred eighty slides were prepared, representing 18 animals from the Shirley Basin as well as Grand Teton National Park and the Pitchstone Plateau of Yellowstone National Park. The final stages of the preparations necessary in karyology, staining of slides, photographing individual metaphase plates and construction of the karyotype could not be done at the Station so the final results are as yet unknown.

Since behavioral variations may well indicate significant evolutionary variation, research was conducted on the feasibility of using miniature transmitters attached to pocket gophers to observe their movements while underground in their burrow systems. A miniature transmitter, designed by Dr. Edward Lonsdale, was inserted subcutaneously on the back of a pocket gopher and the animal returned to its burrow system. Spot observations were made over a three day period, with continuous observation during one eight hour period.

After three days the animal was recaptured, the transmitter recovered and the animal studied for ill effects of the experience. The animal seemed healthy with no indications of infection although he did show some indications of local irritation with a relatively large amount of fluid present around the transmitter. This fluid had caused some impairment of transmission as it had seeped in between the transmitter and its "non-irritating" soft plastic capsule.

Observations indicate that the pocket gophers can be successfully studied with attached transmitters. In this case the subject seemed to remain mostly in the vicinity of his nest which would suggest that the northern pocket gopher may be more sedentary than generally thought. This technique should be applied to many animals during all seasons of the year to study their movements underground, which are now known only by inference.

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