

## HELMINTH PARASITES OF THE WYOMING GROUND SQUIRREL, *SPERMOPHILUS ELEGANS* KENNICOTT, 1863

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**ABSTRACT.**—Helminth parasites of the Wyoming ground squirrel, *Spermophilus elegans* Kennicott, 1863, were surveyed from two environmentally different habitats within Wyoming. A total of four helminth species were identified. Three helminth species were found in 419 hosts collected in a mesic habitat including one species of adult cestode, *Hymenolepis citelli*, and two species of nematodes, *Citellinema bifurcatum* and *Syphacia citelli*. Only larval cestodes (*Taenia taxidiensis*) were found infecting 335 Wyoming ground squirrels collected from a xeric habitat.

The helminth parasites of ground squirrels belonging to the genus *Spermophilus* have not been investigated throughout much of their range. Such studies as those of Jenkins and Grundmann (1973), Babero (1973), and McGee (1980) examined helminths from these hosts in Utah, Nevada, and Saskatchewan, respectively.

In conjunction with studies on the coccidian parasites of the Wyoming ground squirrel, *Spermophilus elegans* Kennicott, 1863, each host was also examined for the presence of helminths. Until 1984, *S. elegans* was classified as a subspecies of *S. richardsoni*; thus, this is the first report of helminths from *S. elegans*.

The ground squirrels we examined were collected from two study areas in Wyoming by snap trapping and shooting. The first area is a sprinkler-irrigated alfalfa and brome grass field (105°33'W, 41°12'N) located approximately 18 km south of Laramie, Wyoming, at an elevation of about 2,250 m with annual precipitation of 26 cm. The second study area of desert shrub-steppe (107°45'W, 41°17'N) is approximately 33 km north of Baggs, Wyoming, at an elevation of about 1,950 m with an annual precipitation of 15 cm. Approximately 240 km separate the two study sites. We hypothesized that a greater number of squirrels would be infected with helminths in the more mesic irrigated alfalfa and that different helminth species would be found in the two host populations because of differing climatic moisture conditions.

### MATERIALS AND METHODS

Each ground squirrel collected from 1983 to 1985 was weighed, sexed, and individually bagged for shipment to the laboratory in Laramie where the animals were necropsied. The small intestine, caecum, and large intestine were opened in containers of tap water. After the contents of the digestive tract were stripped into their respective containers, the water was decanted, and the remaining sediment was examined for the presence of helminths using a dissecting microscope.

Recovered cestodes were relaxed in tap water containing several drops of pentobarbital sodium, fixed in hot 10% formalin, and stained in Semichon's acetocarmine. Following staining, representative specimens were cleared in terpeneol, washed in xylene, and mounted permanently in Permount. Nematodes were fixed using hot 70% ethyl alcohol, cleared in 70% ethyl alcohol + 5% glycerine, and mounted permanently in glycerine jelly. Scolices from metacestodes were mounted in Hoyer's solution. Representative specimens have been deposited in the National Parasite Collection, Agricultural Research Service, Beltsville, Maryland (USNM Helm. Coll. No.     ).

### RESULTS AND DISCUSSION

From the 419 ground squirrels examined from the irrigated field, two species of nematodes and one species of cestode were found. From the 335 squirrels collected from the shrub-steppe, no adult helminths were

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Shults, Larry M and Stanton, Nancy L . 1987. "HELMINTH PARASITES OF THE WYOMING GROUND SQUIRREL, SPERMOPHILUS ELEGANS KENNICOTT, 1863." *The Great Basin naturalist* 47(1), 103–104.

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