physiological acceleration in high altitude forms which enables them to get through their life cycle in considerably less time than do their low altitude relatives. As stated before, temperature may play a major role, but the role of oxygen pressure is still in doubt, as Prosser (earlier citation) puts it, "Oxygen availability has not been thoroughly investigated as a factor limiting the range of a species or isolating populations." He says further, "Curves relating metabolism to oxygen pressure, the limits of T_c (critical pressure) concentration on the metabolic patterns associated with differences in tolerance of anaerobiosis might be investigated with profit." This statement, made in the summer of 1955, almost exactly expresses the general aim of the present project.

(Grant from New York Zoological Society.)

Life History of Microtus richardsoni macropus

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During the summer of 1956, various aspects of the biology of Microtus richardsoni were investigated. Data were gathered particularly in regard to the following:

1. Altitudinal and habitat distribution in the Jackson Hole region.
2. Characteristics of the preferred habitat.
3. Reproductive phenomena
   a. Litter sizes
   b. Number of litters per year
   c. Age of sexual maturity
   d. Length of breeding season
4. Pelage sequences.
5. Behavior (in captivity).
6. Size range in a population.
7. Periods of activity.
8. Burrow sites and characteristics of burrow systems.

Data regarding reproduction, pelage, and size range is presently being analyzed in the laboratory.

Three substantial colonies of Microtus richardsoni were located during the summer. Numerous streams were studied from 6700 feet to 11,000 feet elevation, in order to determine the altitude range of the species in the region. Colonies known to be in existence in 1948 and 1949 were revisited. With one exception these colonies were no longer extant. The physical and vegetational characteristics of the preferred habitat were determined. On the basis of cuttings

and food caches, a list of plant species was compiled that are used extensively as food. Two burrow systems were excavated for purposes of determining their extent and nature. A number of specimens were live-trapped, and certain aspects of behavior were observed in captivity, such as swimming, diving, defensive positions, and vocalization, etc.

More than 80 specimens were obtained for examination in the laboratory. A more complete and detailed report will be submitted upon completion of the laboratory work.

Information still desirable:

1. Data on home range and territorialism.
2. Additional reproductive data.
3. Data on growth rates.
4. Further analysis of habitat and competition with related species.

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Intestinal Protozoa in Jackson Hole Mammals

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GENERAL PROCEDURE:

1. Demonstrate presence of and identity of protozoa.
2. Determine if these organisms are parasitic, commensal or coprozoic.
3. Examine soil for cysts or motile protozoa which might become coprozoic.
4. Cultivate protozoa in the laboratory.
5. Make permanent stained slides.

METHODS:

1. Fecal samples from the following animals were examined for protozoa by the direct smear method: elk, bison, moose, bear, coyote, marmot, horse, cattle, sheep.
2. Thirteen soil samples were taken from various areas frequented by the host animals.
3. Fecal samples and soil samples were moistened and placed in tight-fitting plastic containers and stored in a refrigerator which was maintained at approximately 4° C.
4. Representative samples were also kept in similar containers at room temperature.