

From the Arctic Health Research Center, Public Health Service,
U.S. Department of Health, Education, and Welfare, Anchorage, Alaska

CYTOGENETIC EVIDENCE
FOR THE SPECIFIC DISTINCTION OF AN ALASKAN MARMOT,
MARMOTA BROWERI HALL AND GILMORE
(MAMMALIA: SCIURIDAE)

By

ROBERT L. RAUSCH and VIRGINIA R. RAUSCH

With 2 Figures in the Text

(Received December 7, 1964)

The marmot occurring in the Brooks Range of arctic Alaska is sufficiently similar morphologically to *Marmota caligata* (ESCHSCHOLTZ) of northwestern North America, including central and southern Alaska, as to be considered a subspecies of the latter, designated *M. caligata broweri* HALL and GILMORE. We have found, however, that the two animals differ cytogenetically to a degree exceeding that usually observed in closely related, but distinct, species of Sciurids (NADLER, 1962; NADLER and BLOCK, 1962).

Most authorities recognize five North American species of giant ground squirrels of the genus *Marmota* Blumenbach. Three of these, *M. caligata*, *M. olympus* (MERRIAM), and *M. vancouverensis* SWARTH, appear to be closely related (HOWELL, 1915; HALL and KELSON, 1959) and have been considered possibly to be conspecific with the Palearctic *M. marmota* L. (ELLERMAN and MORRISON-SCOTT, 1951; RAUSCH, 1953). However, accumulating evidence indicates that the latter concept is erroneous. In 1953, one of us (RAUSCH, 1953) suggested that acceptance of a more restricted definition of species of North American marmots belonging to the *caligata*-group would, on morphological grounds alone, necessitate a review of the taxonomic status of the marmot occurring in the Brooks Range. *M. caligata broweri* can now be distinguished at the specific level by morphological as well as by zoogeographic criteria; moreover, as reported herein, the results of a cytogenetic investigation demonstrate the specific distinction of *M. c. broweri*.

Cytological preparations were analyzed from 4 specimens of *M. c. caligata* from south-central Alaska (2 ♂♂, Talkeetna Mountains; 1 ♂, Kenai Peninsula; 1 ♀, Chugach Mountains) and from 3 specimens of *M. c. broweri* from the central and eastern Brooks Range (1 ♂, Chandler Lake; 2 ♀♀, Lake Peters). Chromosome numbers were also determined for *M. olympus* (1 ♂, Olympic Peninsula, Washington) and *M. flaviventris* (Audubon and Bachman) (1 ♀, Kamloops, British Columbia).