CHROMOSOMES OF OKLAHOMA MAMMALS. I. THREE SPECIES OF SQUIRRELS

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Karyotypes are reported for Oklahoma specimens of *Eutamias q. quadrivittatus*, *Tamias striatus venustus*, and *Spermophilus tridecemlineatus texensis*. The latter two represent previously unkaryotyped subspecies. The results from study of the three squirrels are compared with those reported in the literature.

The use of karyotype analysis has proved to be a powerful tool for studies in mammalian systematics, even at the subspecific level, and investigations have been initiated to determine the typical karyotypes represented in populations of Oklahoma mammals. This report describes karyotypes of three species of Oklahoma squirrels, two of which represent previously unkaryotyped subspecies.

METHOD

All specific designations follow Hall and Kelson (1). The method differs from that of Patton (2) in that, after injection with colchicine solution, the animals were incubated for from 2 to 6 hr. (The time of incubation of marrow cells was found to be of critical importance.) Sciuromorpha were incubated 12 to 13 min; cell buttons were fixed for 80 min during each washing.

RESULTS AND DISCUSSION

Tamias striatus venustus Bangs, Eastern chipmunk: 1♂, Lake Eucha, Delaware Co., Oklahoma, 22 July 1968, OU 7216; diploid count: 2N = 38. Nadler and Block (3) advanced an arbitrary grouping of chromosomes to facilitate the classification and analysis of chipmunk karyotypes. In this grouping the chromosomes were classified as follows:

Group I. Large chromosomes with median centromeres.
Group II. Large chromosomes with subterminal centromeres.
Group III. Large chromosomes with terminal centromeres.
Group IV. Smallest pair of chromosomes with median centromeres.
Group V. Smallest chromosomes of uniform size with terminal or subterminal centromeres.

Following this classification, the 38 chromosomes of *T.s. venustus* are arranged as follows:

Group I. 4 pairs.
Group II. 6 pairs, plus X chromosome.
Group III. 3 pairs.
Group IV. 1 pair.
Group V. 4 pairs, plus Y chromosome.

This karyotype is identical to that reported for two other subspecies of the eastern chipmunk, *T.s. griseus* (4) and *T. s. lysteri* (3). The consistency among these karyotypes provides additional evidence for the lack of intraspecific variation found by Nadler and others in their studies of chipmunk chromosomes.

Eutamis q. quadrivittatus (Say), Colorado chipmunk: 1♀, 4½ mi S.E. Kenton, 4200 feet, Cimarron Co., Oklahoma, 7 July 1968, OU 4180; diploid count: 2N = 38. Again following the five group classification of Nadler and Block, the chromosomes of *E. q. quadrivittatus* are as follows:

Group I. 4 pairs.
Group II. 6 pairs, plus X chromosome.
Group III. 4 pairs.
Group IV. 1 pair.
Group V. 3 pairs, plus Y chromosome.

This karyotype is identical to that reported for *E. q. hopiensis* (3) and for *E. q. quadrivittatus* taken in Colorado (4; 5), and designated "*Eutamias* Karyotype B" by Nadler. It differs from "*Eutamias* Karyotype A" in the number of chromosome pairs in Group V, 3 and 4, respectively. Karyotype A is represented by various subspecies of *E. minimus*, none of which occur naturally in Oklahoma.

Spermophilus tridecemlineatus texensis Merriam, Thirteen-lined ground squirrel: 1♀, 1♂, North Base, University of Oklahoma, Norman, Cleveland Co., Oklahoma, 9 November 1968, OU 7241, 6891; diploid

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count: 2N = 34. The karyotype of *S. tridecemlineatus texensis* is composed of eight pairs of metacentric autosomes, eight pairs of submetacentric autosomes, and a submetacentric X. The Y is an acrocentric (6). This karyotype is identical to that reported for other subspecies of *S. tridecemlineatus*, namely *S. t. pallidus* (6), and *S. t. tridecemlineatus* (6, 7). Oklahoma has only one other member of the subgenus *Ictidomys*, *Spermophilus spilosoma*, which has a diploid number of 32 (6, 8).

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