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CHROMOSOMES OF SOME NATIVE MURIDAE IN QUEENSLAND

By J. H. D. MARTIN, B.Sc.

SUMMARY

Diploid numbers were determined for *Rattus conatus* Thomas as 32, *Rattus assimilis* (Gould) 38, *Melomys cervinipes* (Gould) 48, *Melomys littoralis* (Lönnberg) 54, *Hydromys chrysogaster* Geoffroy 48. Karyotypes are illustrated. The sex mechanism in all species is XX-XY, the X being a medium to large acrocentric and the Y a small acrocentric or subtelocentric.

During general studies of native fauna in Queensland, chromosomes are being determined. Those of five of the Muridae are here recorded.

The bone-marrow spread preparations were made according to the modification (Yosida 1965) of the colchicine-hypotonic citrate technique (Ford and Hamerton 1956). Additionally, just prior to intraperitoneal injection of 0·5 ml of 0·1% colchicine solution, 0·12 ml of "Nembutal" 60 mg/ml (per rat of 150–200 g) was administered as a pre-anaesthetic. Hyaluronidase was not used and the acetic acid fixed suspension was not allowed to stand for a further 30 min. The preparations were stained with 1·0% natural orcein (Gurr) in 50% glacial acetic acid.

Karyotypes were assembled on size and morphology. Nomenclature follows Levan, Fredga, and Sandberg (1964).

Details of material and results are presented in Table 1.

The sex mechanism in all species is XX-XY, the X being a medium to large acrocentric and the Y a small acrocentric or subtelocentric.

The author is indebted to Miss Hazel A. Buchanan for assistance in the preparation of the karyotypes, and to Mr. W. W. Manley for advice on microphotography.

TABLE 1

DETAILS OF CHROMOSOMES OF SOME NATIVE MURIDAE

Species*	Trapping Data	No. of Metaphase Plates	No. of Chromosomes						Remarks
			2N	Meta-centric	Submeta-centric	Subtelo-centric	Acro-centric	Telo-centric	
Rattus conatus Thomas	2♂♂, 3♀♀ Gordonvale, N.Qd. 15.viii.67	60	32	26	..	2	2	2	See Figs. 1, 2
Rattus assimilis (Gould) ..	3♂♂, 2♀♀ Warwick, S.E. Qd. 20.vii.68	25	38	18	..	2	18	..	See Figs. 3, 4, 5, 6
Melomys cervinipes (Gould) ..	2♂♂ Warwick, S.E. Qd. 10.viii.67	70	48	4	..	2	42	..	See Figs. 7, 8
Melomys littoralis (Lönnberg)**	1♂ Gordonvale, N. Qd. 15.viii.67	14	54	10	..	26	18	..	See Figs. 9, 10
Hydromys chrysogaster Geoffroy	2♂♂, 1♀ Warwick, S.E. Qd. 5.xii.68	42	48	4	..	26	18	..	See Figs. 11, 12, 13, 14

* After Iredale and Troughton (1934).

** *M. littoralis* showed five pairs of metacentrics, the last pair consisting of one discrete metacentric and two broken portions.

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FORD, C. E., and HAMERTON, J. L. (1956).—A colchicine hypotonic citrate squash sequence for mammalian chromosomes. *Stain Technol.* 31:247-51.

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IREDALE, T., and TROUGHTON, E. le G. (1934).—A check-list of the mammals recorded from Australia. *Mem. Aust. Mus.* No. 6.

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The author is an officer of Entomology Section, Queensland Department of Primary Industries, and is stationed at the Sciences Laboratory, Indooroopilly.

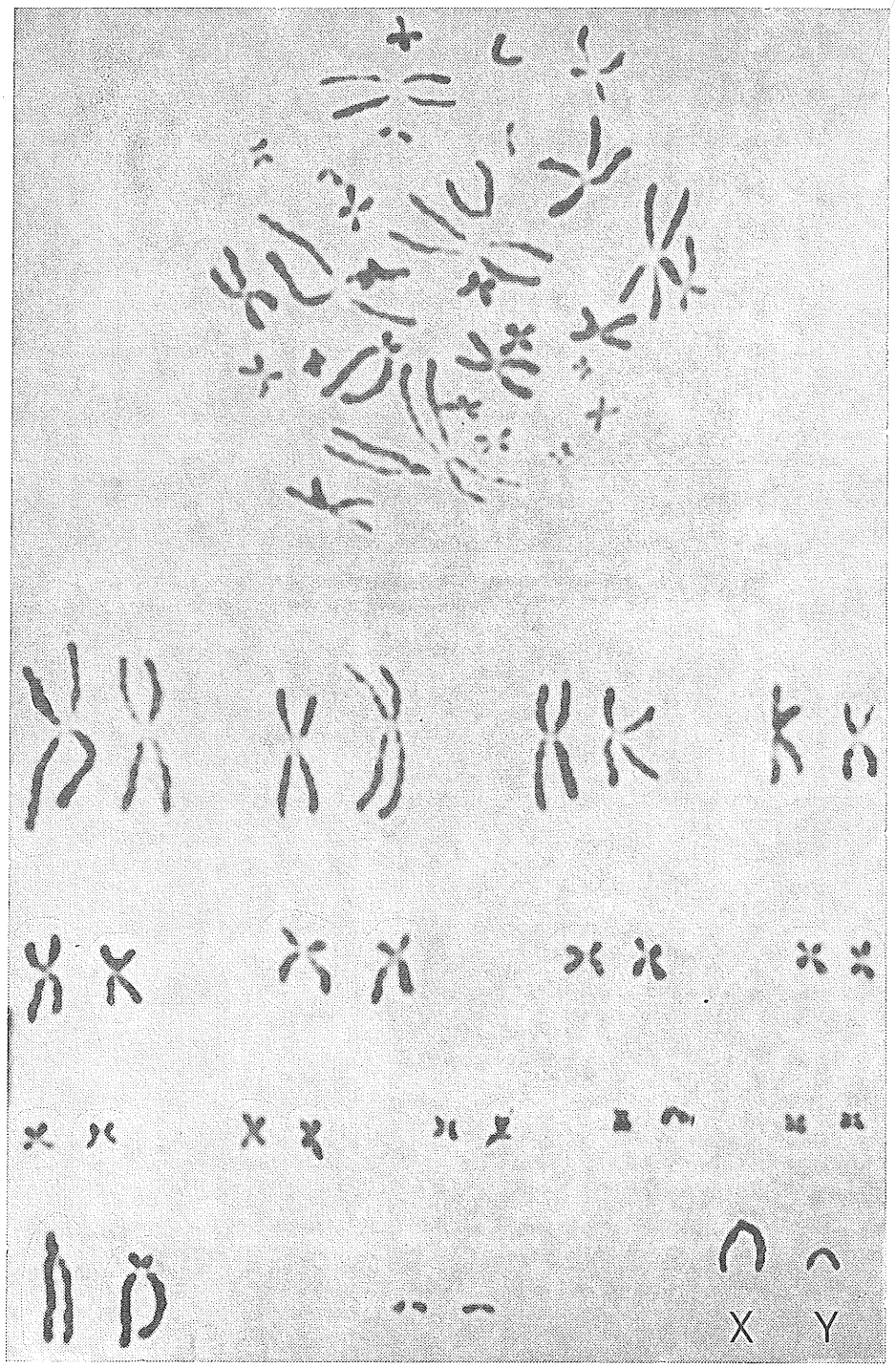

Fig. 1.—*Rattus conatus* Thomas ♂. Metaphase plate and karyotype (x 6250).

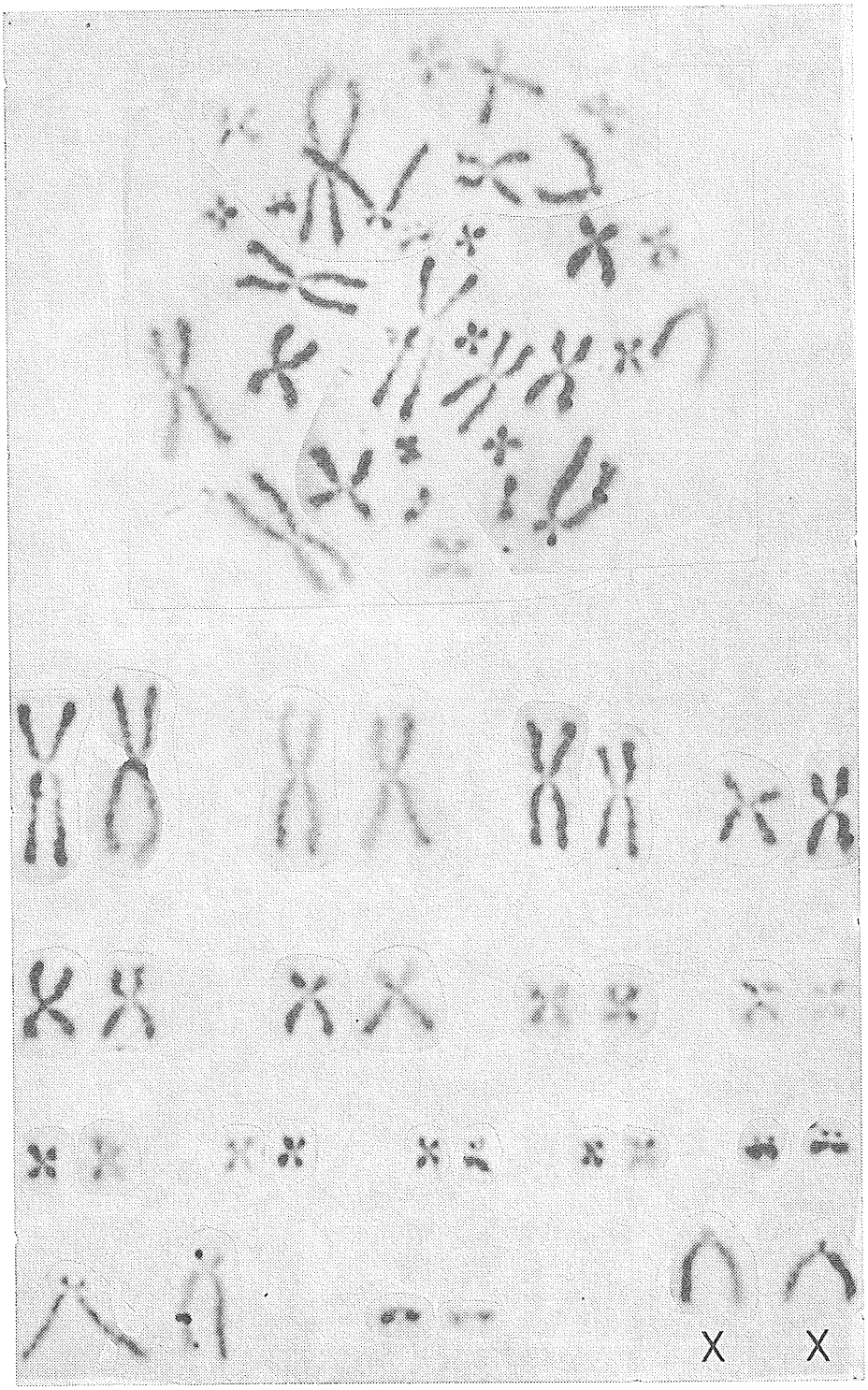

Fig. 2.—*Rattus conatus* Thomas ♀. Metaphase plate and karyotype (x 5300).

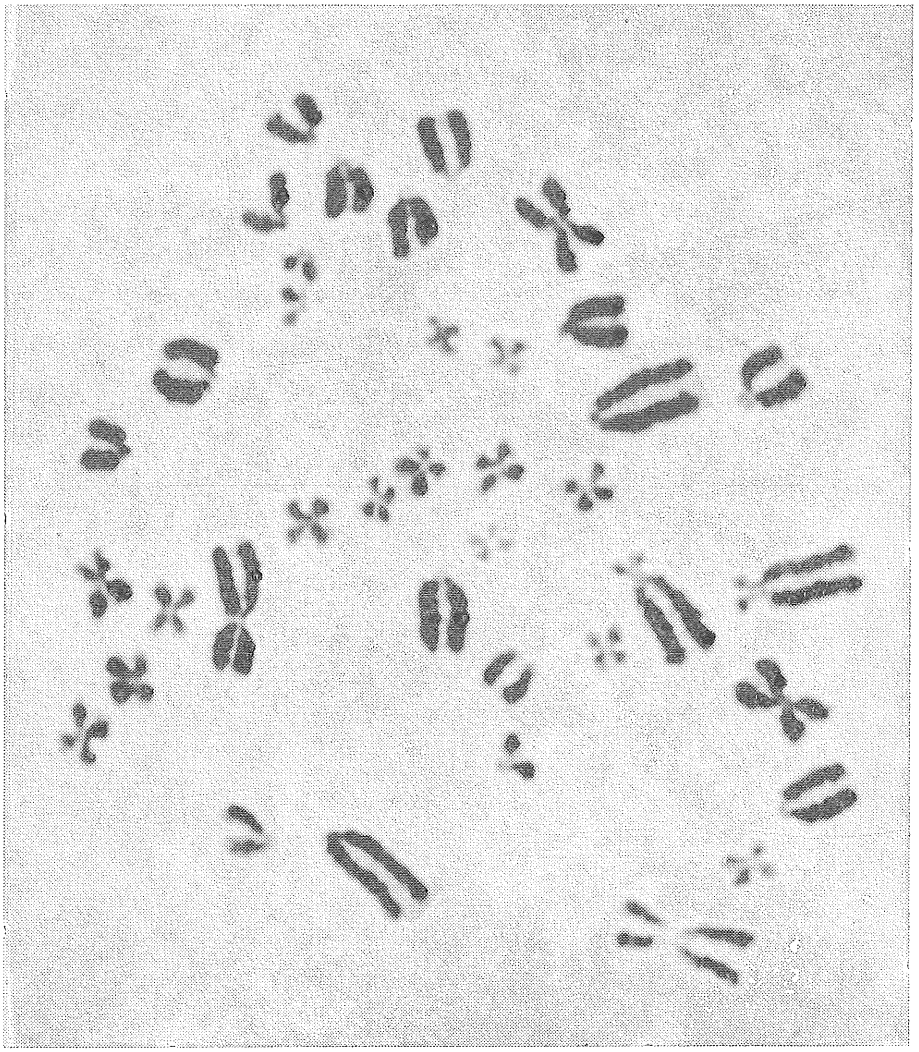

Fig. 3.—*Rattus assimilis* (Gould) ♂. Metaphase plate (x 7500).

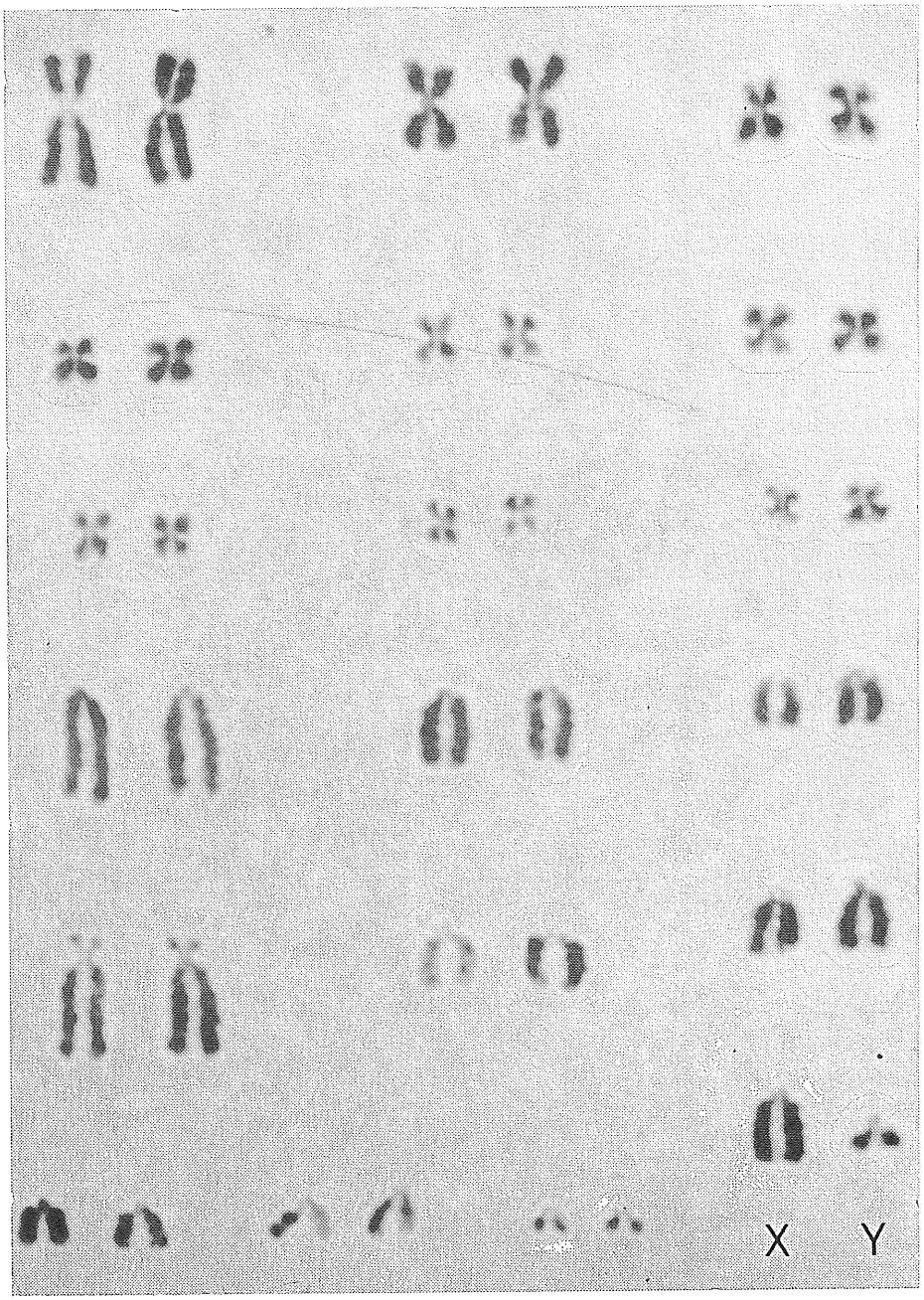

Fig. 4.—*Rattus assimilis* (Gould) ♂. Karyotype (x 7500).

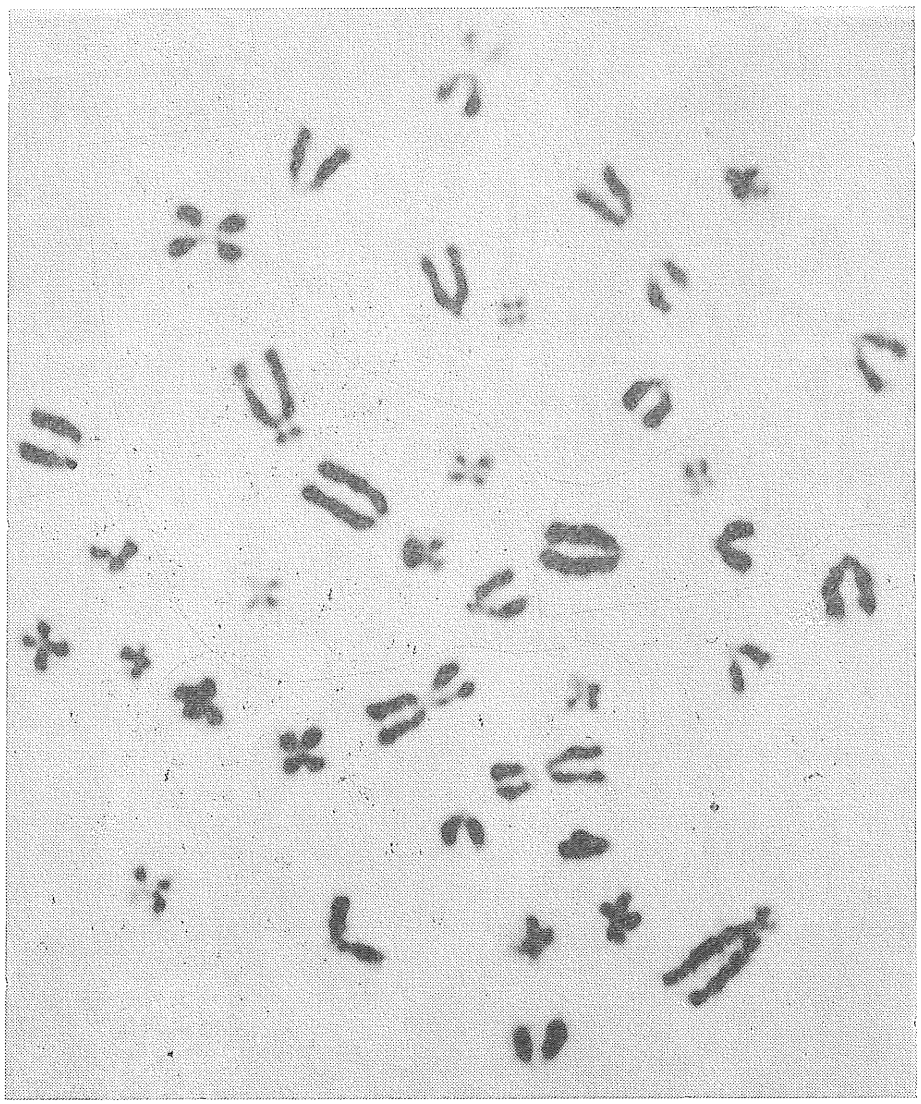

Fig. 5.—*Rattus assimilis* (Gould) ♀. Metaphase plate (x 6250).

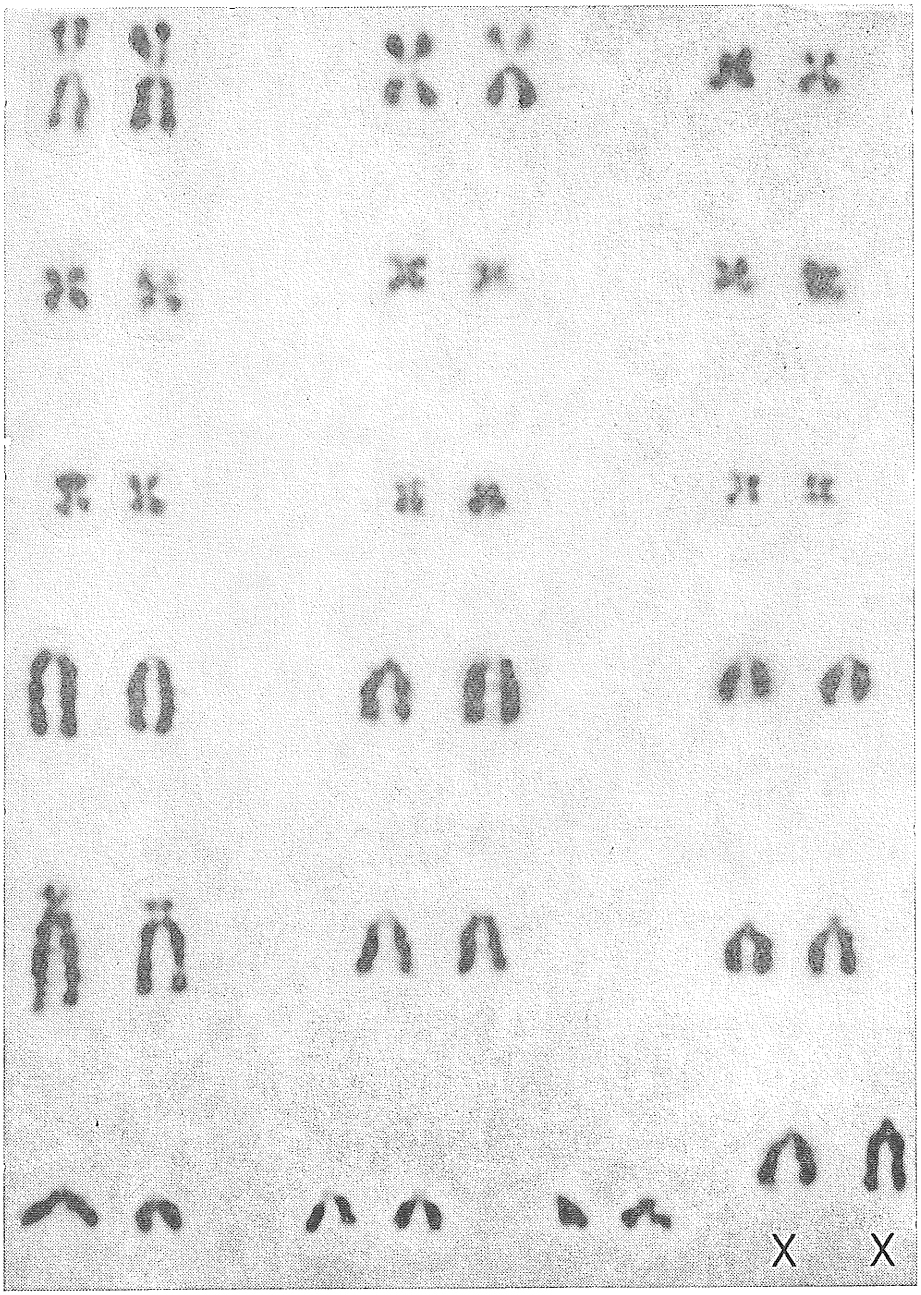

Fig. 6.—*Rattus assimilis* (Gould) ♀. Karyotype (x 6250).

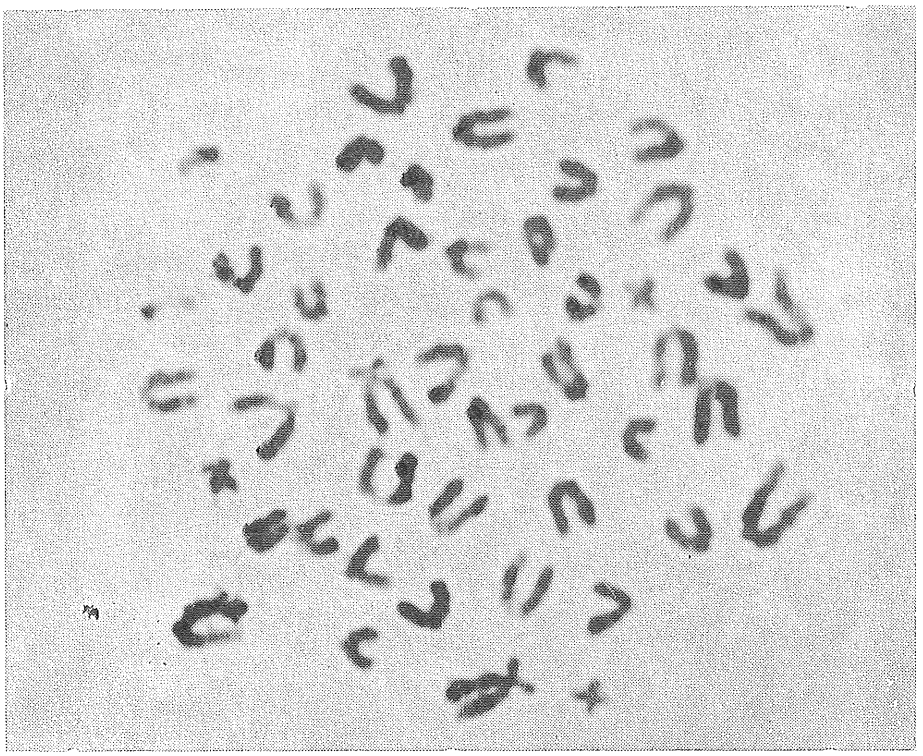

Fig. 7.—*Melomys cervinipes* (Gould) ♂. Metaphase plate (x 6900).

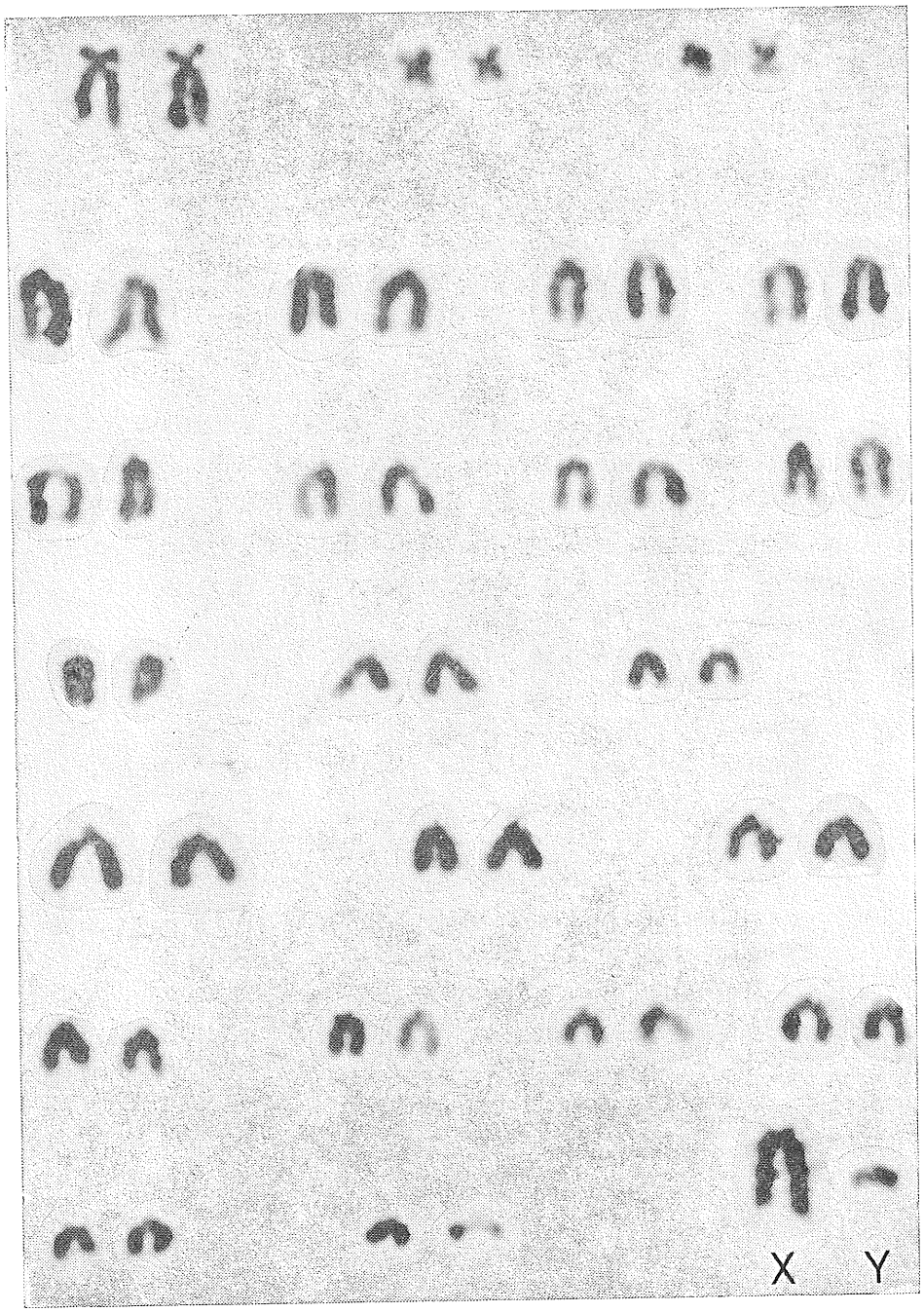

Fig. 8.—*Melomys cervinipes* (Gould) ♂. Karyotype (x 6900).

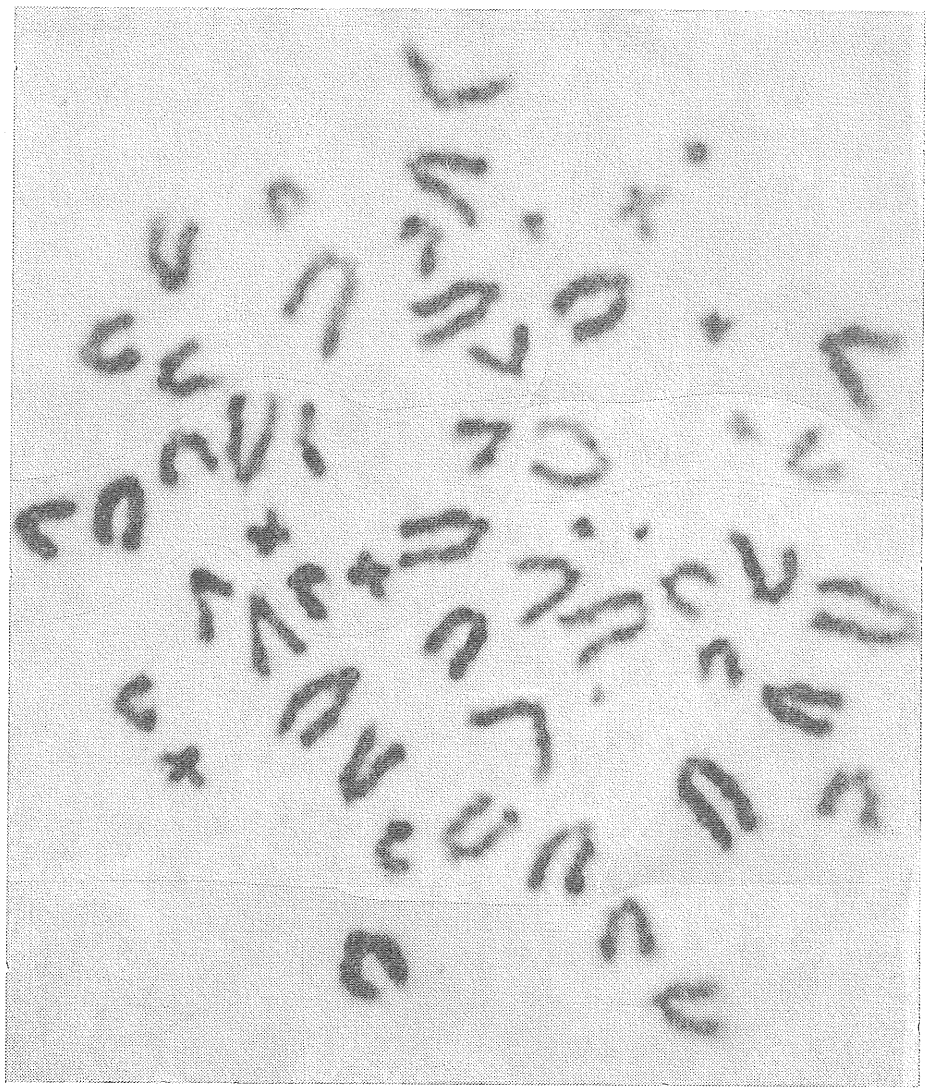

Fig. 9.—*Melomys littoralis* (Lönnberg) ♂. Metaphase plate (x 7500).

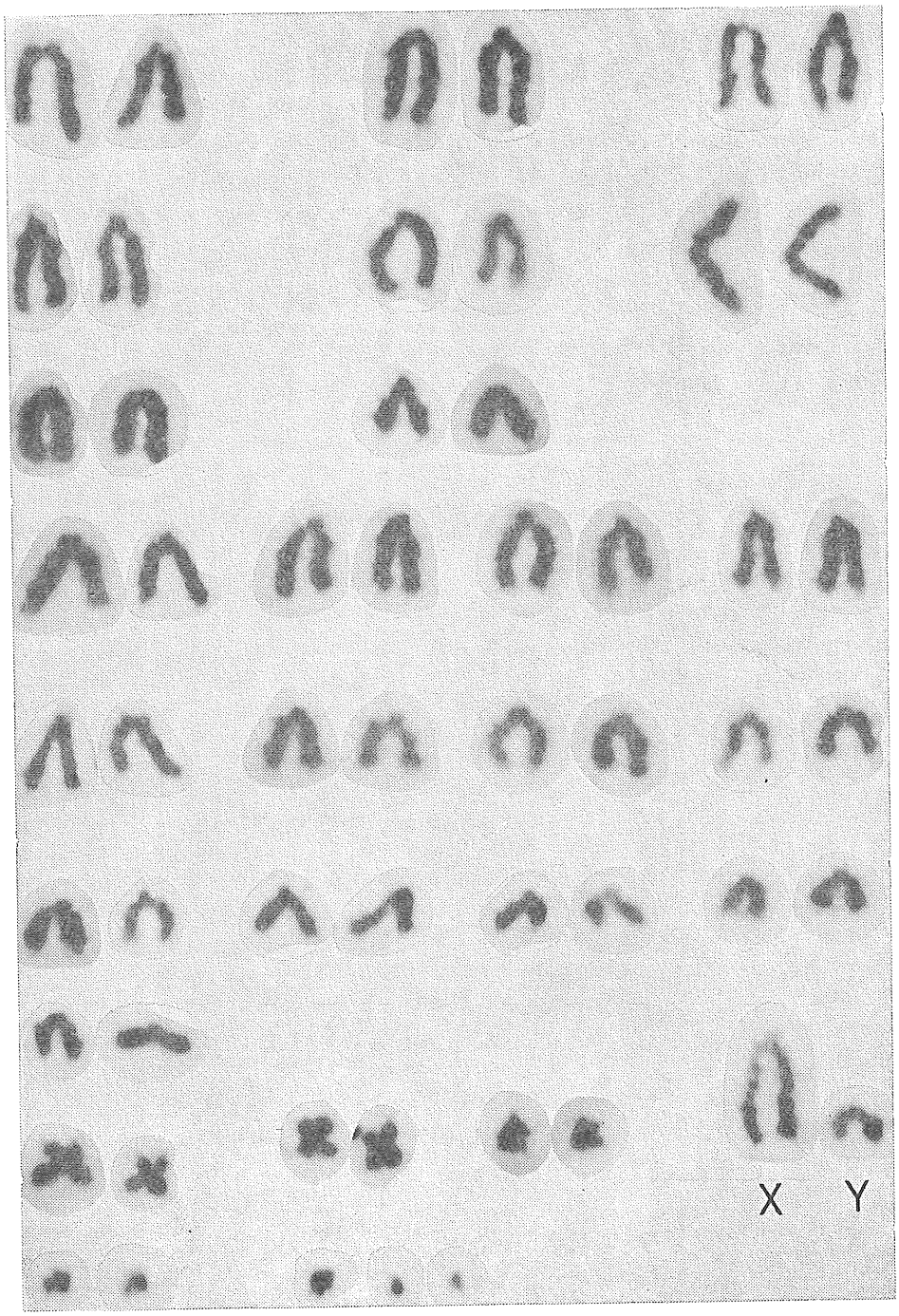

Fig. 10.—*Melomys littoralis* (Lönnberg) ♂. Karyotype (x 7500).

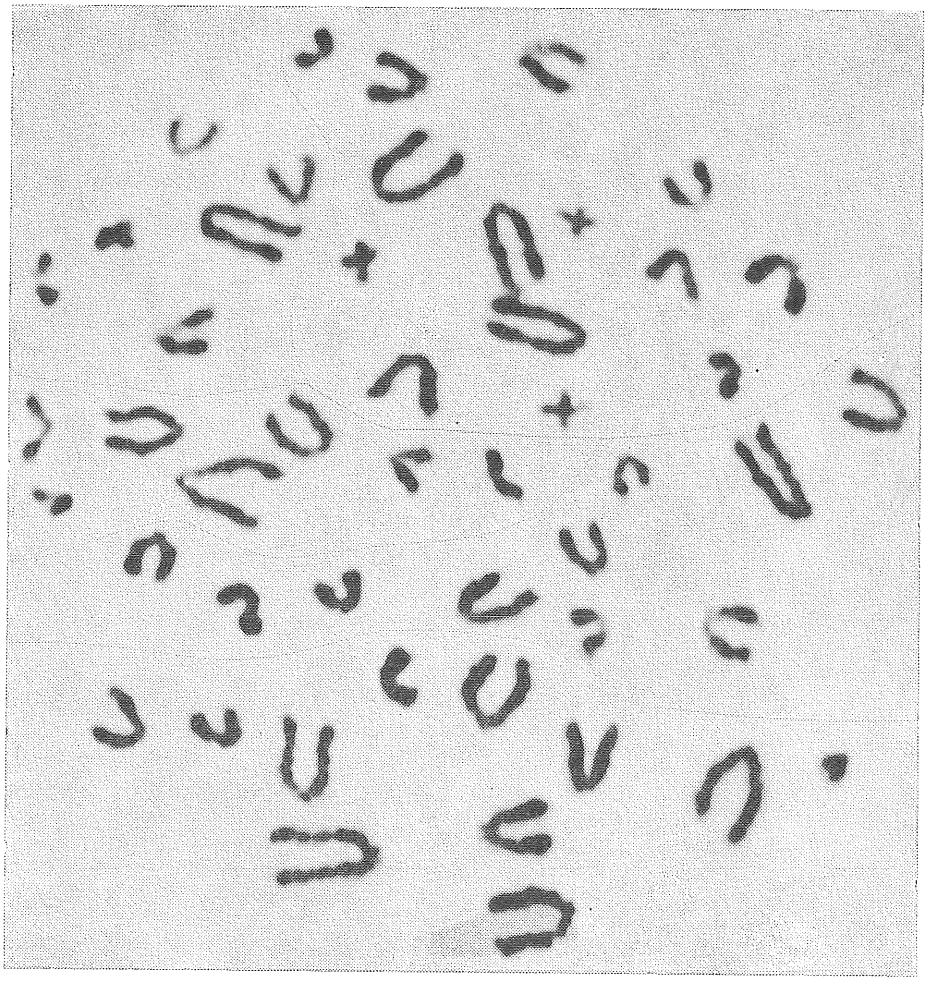

Fig. 11.—*Hydromys chrysogaster* Geoffroy ♂. Metaphase plate (x 6500).

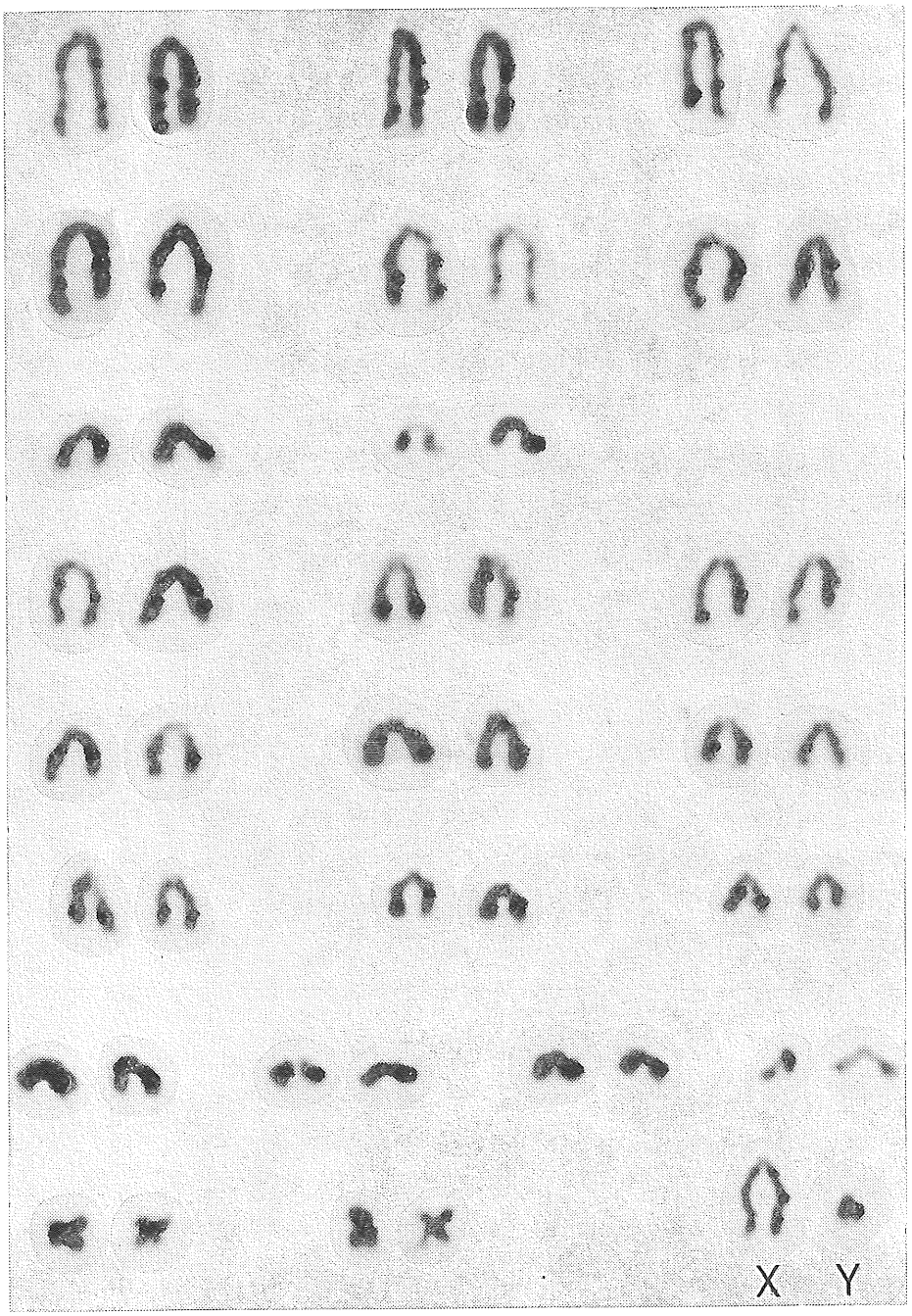

Fig. 12.—*Hydromys chrysogaster* Geoffroy ♂. Karyotype (x 6500).

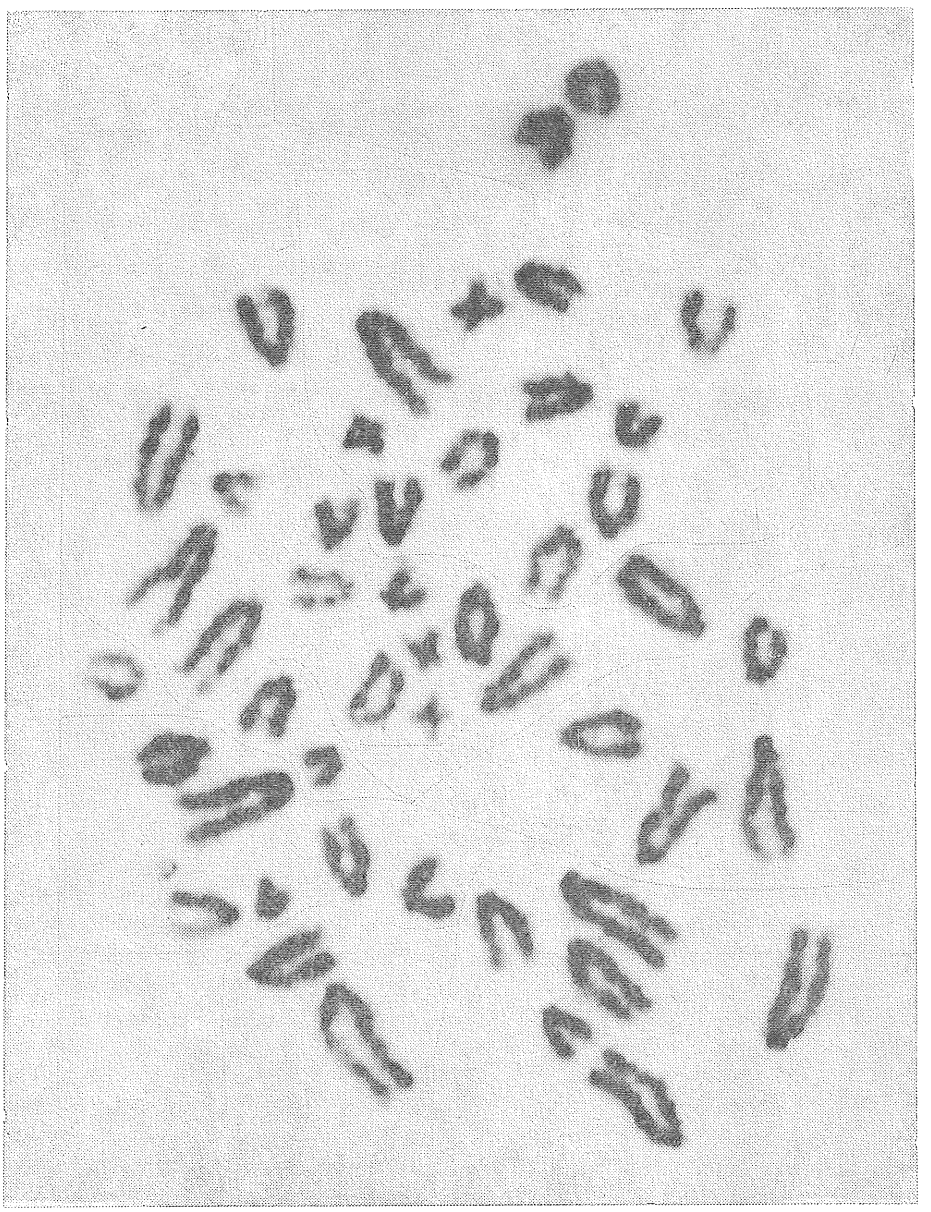

Fig. 13.—*Hydromys chrysogaster* Geoffroy ♀. Metaphase plate (x 6250).

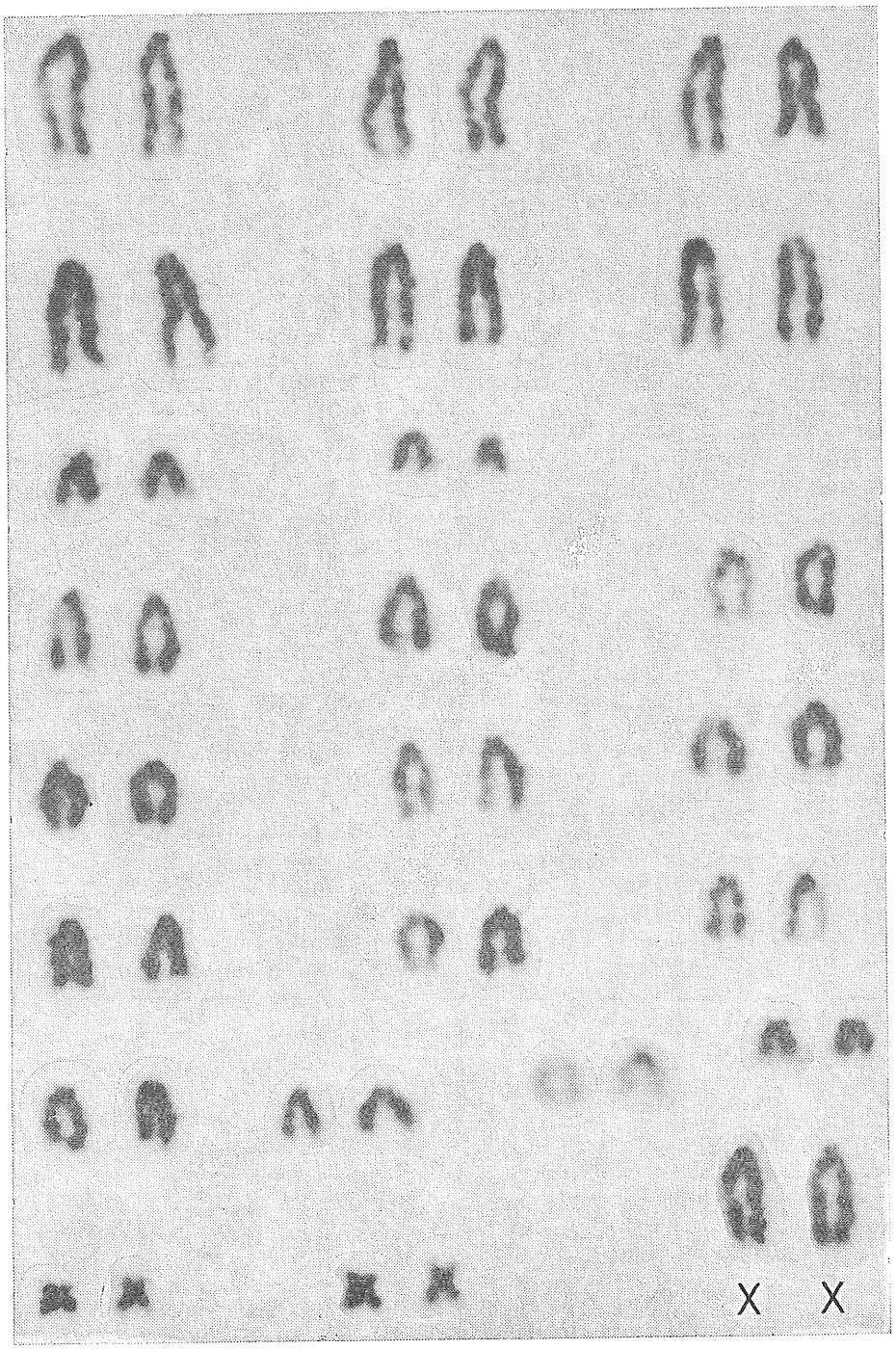

Fig. 14.—*Hydromys chrysogaster* Geoffroy ♀. Karyotype (x 6250).