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Fig. 1. Spermatogonial metaphase showing 26 univalent chromosomes.

Fig. 2. Primary spermatocyte metaphase showing 13 bivalents. Camera lucida drawings, magnification being 4200 X

chromosomal complex of *R. tigrina*, *R. nigromaculata* and *R. rugosa* and *R. esculenta*

In the primary spermatocytes 13 bivalents are seen at the metaphase (Fig. 2), five or six of which are of large size while the remaining are small. All the chromosomes appear thick and much condensed as is generally the case with the majority of Anurans so far studied.

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Chromosomes of *Rana tigrina*.

CONSIDERABLE advance has been made during recent years in our knowledge of the Amphibian chromosomes, and several species belonging to the genus *Rana* have been investigated in this direction. But so far as we are aware no report exists up to the date of writing as regards the chromosomes of the well-known Indian species, *Rana tigrina*.* A brief account of our preliminary observations on the chromosomes of this species is presented herewith.

A polar view of the equatorial plate in the metaphase clearly shows 26 chromosomes of different sizes and shapes having V- and J-shape. We have examined several plates showing this stage and in all of them invariably the number of chromosomes is 26 showing the above-mentioned variation in size and shape as shown in the accompanying Fig. 1. All the chromosomes seem to show median or sub-median fibre attachment, since they show constrictions either median or sub-terminal. In this respect, therefore, the Indian species resembles the Japanese forms, *R. nigromaculata* and *R. rugosa* investigated by Iriki¹ and the European form, *R. esculenta* studied by Galgano.² However, the Indian frog differs from *R. temporaria*, studied by Makino³ in the fact that in the latter species there are constantly found two very small grain-like chromosomes, which are absent in the

¹ Iriki, Sh., *Science Reports of the Tokyo Bunrika Daigaku*, 1932, B 1, 61.

² Galgano Mario, *Monitore Zoologico Italiano* supp., 1931, 41, 224.

³ Makino, S., *The Proceedings of the Imperial Academy*, 1932, 8, 1, 23.

* See the list by Oguma and Makino, *J. Genet.*, 1932,