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2. Abe, Syuiti: **Karyotypes of 6 species of anabantoid fishes**

The suborder Anabantina includes a large group of tropical freshwater fishes. However, karyological information of this group has been still meager (Makino 1956, Gyldenholm & Scheel 1971). In this paper are described karyotypes of 6 species (5 genera) of anabantoid fishes obtained from a tropical fish dealer. Each fish was sacrificed 4 hours after intraperitoneal injection of Colcemid (7 μg/g body weight). Air-dried chromosome preparations were made from kidneys, spleens, and gills, and stained with Giemsa.

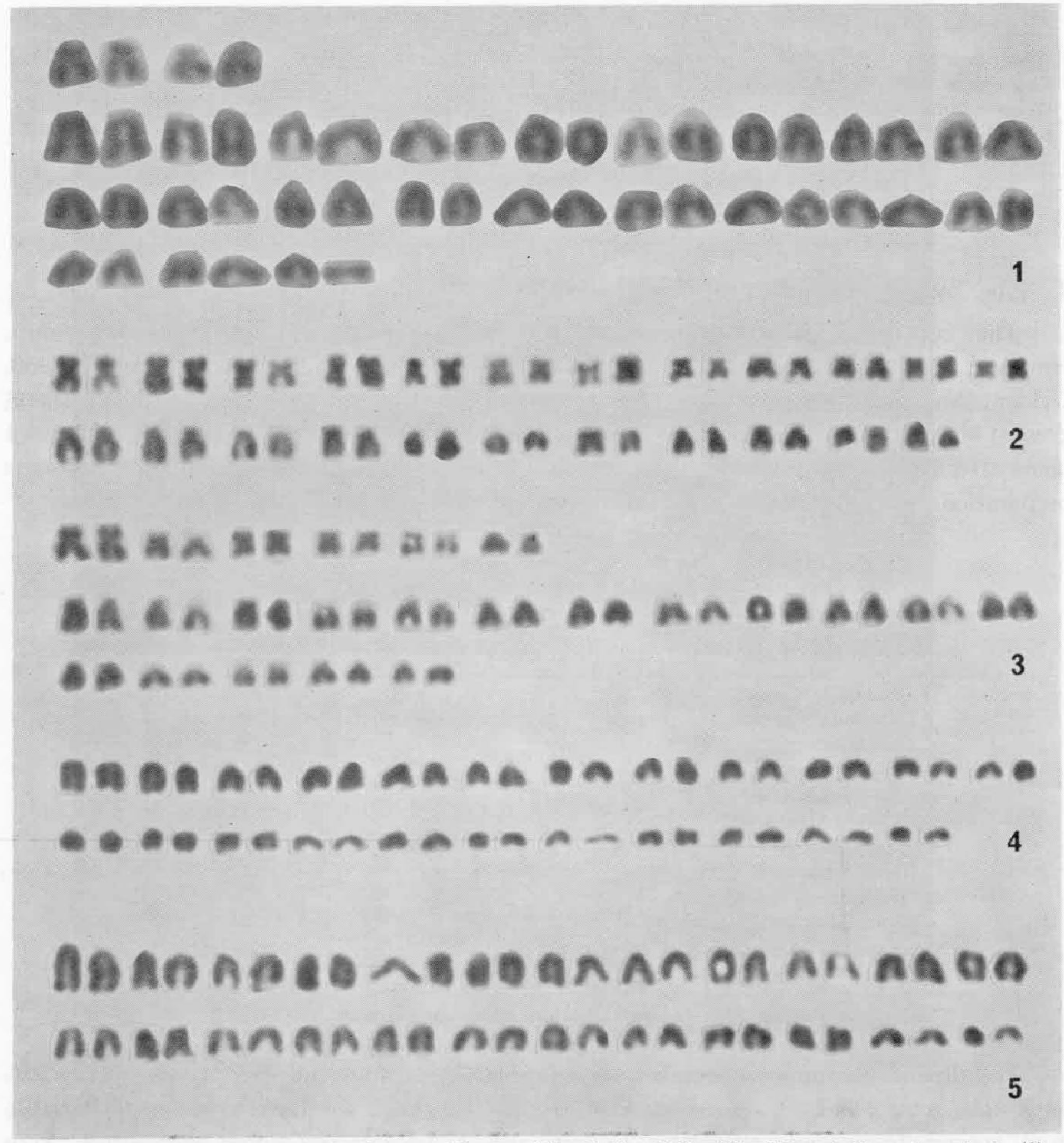
Table 1. Results of karyotype analyses in 6 species of anabantoid fishes studied

Species (Common name)	No. of specimens	2N	M & SM*	A**
Anabas testudinens (Climbing Pearch)	1(♀)	46	4	42
Colisa lalia (Dwarf Gourami)	2(?)	46	24	22
Helostoma temmincki (Kissing Gourami)	1(♀) & 1(♂)	48	—	48
Trichogaster leeri (Pearl Gourami)	1(♂)	46	—	46
T. trichopterus (Blue Gourami)	2(♂)	46	—	46
Macropodus opercularis (Paradise Fish: Albino)	1(?)	46	12	34

*M: metacentrics, SM: submetacentrics, **A: acrocentrics.

The diploid chromosome number was established as 46 in all except one species, *H. temmincki*, which had 48 acrocentrics (Table 1). However, the karyotypes were variable from species to species, excepting *T. leeri* and *T. trichopterus* whose karyotypes were indistinguishable from each other (Table 1 and Figs. 1–5). No heteromorphic sex-elements were detected in any of the present specimens so far studied. Post (1965) reported haploid chromosome numbers of 24 and 21 from testicular specimens of *T. trichopterus* and *M. opercularis*, respectively, both being contradicted with the present results.

The karyotypic differences among the 6 species are not explained simply by the centric fusion (or fission) mechanism, although such a mechanism may exist between *A. testudinens* and *H. temmincki*. Probably, percientric inversions and some other mechanisms could



Figs. 1–5. Karyotypes of *Anabas tetudinens* (1), *Colisa lalia* (2), *Macropodus opercularis* (3), *Trichogaster trichopterus* (4), *Helostoma temmincki* (5).

account for the karyotypic diversity here observed, which may reflect divergent processes in the anabantoid speciation.

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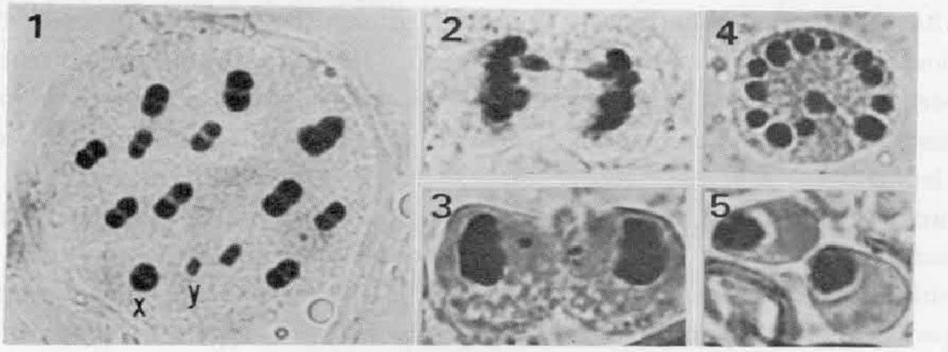
3. Muramoto, Naoto: **On the spiralization of the sperm-head of *Adelphocoris quadripunctatus* (Miridae; Heteroptera)**

Because of the fact that the sperm-head is regarded as being transformed from the interphase-nucleus, special attention has been given to the behavior of chromonemata within the sperm-head (Cooper 1952; Herskowitz and Muller 1954; Nakanishi 1957). It was confirmed that the spiral chromonemata were contained within the sperm-head, and that it was related to a spiral chromonema-structure in a cell (Gall 1961; White 1973). The sperm-head of many heteropteran insects is lance-shaped, but that of *Adelphocoris* species is of a spiral-form. This study deals to some extent with the spiralization of the sperm-head in *Adelphocoris quadripunctatus*.

Material and Method: Germ-cells from the adults of *Adelphocoris quadripunctatus* (Miridae; Heteroptera) were used as material for this study. Slides were made according to the acetic orcein and acetocarmine squash methods.

Results: The number of chromosomes was n, 14 for MI; and the X and the Y chromosomes were easily distinguished from the autosomes (Fig. 1). The X and the Y divided respectively in MI and moved to each pole later than the autosomes (Figs. 2 and 3). The number of MII chromosomes was n, 13 and the autosomes were surrounding the XY-compound body (Fig. 4). The spermatocytes with the X or the Y were not distinguished one from the other on the morphological basis (Fig. 5).

In the process of the sperm-formation, the nucleus moved to one side of a spermatocyte and the gradual elongation was noted toward the front and the rear (Figs. 5 and 6). The nucleus took the form of a slender pipe through its elongation. Then, the substance



Figs. 1–5: Chromosomes of *Adelphocoris quadripunctatus* 1 MI with 14 chromosomes. 2. MI-anaphase, showing the division of the X. 3. The same, showing the Y. 4. MII with 13 chromosomes, showing the XY compound in the center. 5. Two spermatocytes in each of which the nucleus moved to one side.