

Chromosomes of *Chanos chanos* (Gonorynchiformes, Chanidae)

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(Received October 6, 1975)

In the period of the last decade, karyological studies of fishes more than five hundred species have been reported (Park, 1974). As far as we are aware, however, there are no reports on karyotypes of gonorynchiform fishes which are recently considered to be closely related to cypriniform fishes (Rosen and Greenwood, 1970). On the other hand some investigators include gonorynchiform fishes in the order Clupeiformes (Gosline, 1971; and many previous authors). The systematic position of

the Gonorynchiformes is still uncertain.

Recently we had a chance to observe chromosomes of *Chanos chanos* (Forsskål), and the result of the observation is described in the present paper. We hope that this karyological information would become useful for systematic discussion, when more data on primitive ostariophysan fishes become available.

Material and method

Two juvenile specimens, 83.5 and 117.0 mm in standard length, from Taiwan, were sacrificed on September 17, 1974. Several characters of the specimens are as follows: dorsal fin with 17 rays, anal fin with 10 rays, number of vertebrae 22+21, total 43.

Method of chromosome preparation is the same as that of Arai and Katsuyama (1973).

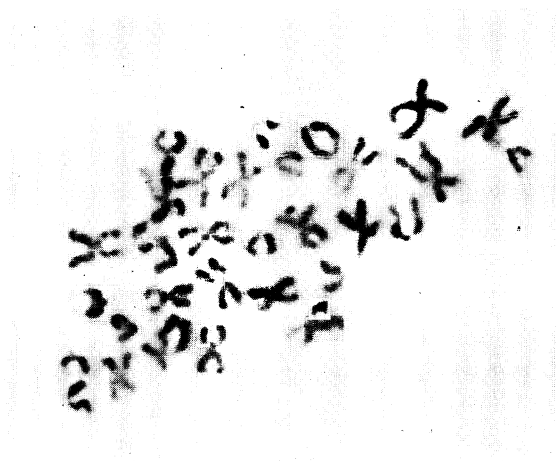


Fig. 1. Photomicrographs of metaphase from gill epithelial cells of *Chanos chanos*. $2n=32$. $\times 4870$.



Fig. 2. Karyotype of *Chanos chanos*, from Fig. 1. Arm number 50. $\times 4870$.

Classification of chromosomes is adopted from Levan et al. (1964). Metacentrics and submetacentrics are described as two-arm chromosomes, and subtelocentrics and acrocentrics as one-arm chromosomes.

Material used for the experiment are deposited at the Department of Zoology, National Science Museum, Tokyo.

Result and discussion

Twenty four chromosome figures from gill epithelial cells were observed. As shown in Figs. 1 and 2, the diploid chromosome number is 32. The karyotype comprises 7 pairs of metacentric, 2 pairs of submetacentric, and 7 pairs of acrocentric chromosomes. All the two-arm chromosomes are approximately two times larger than any one-arm chromosome, and hence they seem to be produced by centric fusion. The arm number is 50.

The diploid number of *Chanos chanos* is very small in lower teleostean fishes. However, considering its karyotype, 32 chromosomes may be derived from 50 chromosomes by centric fusion. Karyologically, *Chanos chanos* may be considered as a much differentiated species.

Acknowledgments

We wish to express our gratitude to Prof. Teruya Uyeno, Nippon Luther Shingaku Daigaku, for donation of the material and reviewing the manuscript, and to Dr. Masao Watanabe for the arrangement in obtaining young of *Chanos chanos* from Taiwan.

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サバヒーの染色体について

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サバヒーの系統分類上の位置に関して、Rosen and Greenwood (1970) はネズミギス目とコイ目とは同一系統群(骨鰈上目 Ostariophisi)に属すると推論している。ネズミギス目魚類の染色体についての報告がないので、サバヒーの染色体を観察した。結果は、 $2n=32$, $NF=50$ であった。サバヒーの染色体数($2n$)はサケ目やコイ目と比べるとかなり少ないが、18本のtwo-arm chromosomesは大きさから考えて2個の染色体の(着糸部での)合着により生じた可能性が強い。この推察をおし進めるとサバヒーの染色体は $2n=50$ から特化したものと考えられることになる。

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