73. *Preliminary Notes on the Chromosomes of Pisces.*

I. Aplocheilus latipes and Lebistes reticulatus.

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Genetical experiments show that the male is heterogametic in *Aplocheilus* (Aida, '21 & '30) and *Lebistes* (Winge, '22 a & b, '23 & '27), while in *Platyopocilus* the female is heterogametic (Bellamy, '22 & '28; Fraser & Gordon, '28 & '29; Gordon, '27). The cytological evidence for these results is, however, extremely meagre. Thus the study of the chromosomes in Pisces is much needed. The results obtained by the study of the two species of the teleosts, *Aplocheilus latipes* and *Lebistes reticulatus* which are well known in breeding experiments, are briefly as follows.

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The material of *Aplocheilus latipes* was obtained through kindness of Dr. Aida, who supplied me with material from the stocks of his breeding experiments. The testes were cut out of mature males and fixed with Champy's solution. The equatorial plate of the spermatogonium shows 48 chromosomes, although it is a hard task to count them with absolute certainty, owing to their small size. In the metaphase of the first spermatocyte 24 chromosomes are clearly observed, and the same number is also found in that of the second spermatocyte. In both cases the chromosomes are well separated from one another, so that there is no danger of miscount. Aida ('21 & '30) has concluded from his genetical results that the male is heterogametic (XY) in the domestic form. But there is no evidence for this in the state of the chromosomes. In the first division every tetrad is made up of two diads of the same size and shape, and there is nothing which suggests the heterogamecy of the male.

Lebistes reticulatus:—The same fixative used for *Aplocheilus latipes* was applied to *L. reticulatus* with good results. The chromosome number of the spermatogonium seems to be 46, the accurate

1) Winge reported the occurrence of XX male (Jour. Gen. Vol. 23, No. 1, '30).

Lebistes reticulatus

1-4.....equatorial plates of the first spermatocytes which all contain 23 chromosomes (4.....microphotograph of 3).

5-8.....equatorial plates of the second spermatocytes which all contain 23 chromosomes.

number being impossible to determine owing to the lack of material. Clear division figures, however, have been observed in the first (Figs. 1-4) and the second spermatocytes (Figs. 5-8) and show that the haploid number is 23. Winge ('22 a & b, '23 & '27) has reported in his genetical work that the males are heterogametic in this species as in the case of *A. latipes* and according to Vaupel ('29) there is some cytological evidence for the presence of an X-Y pair. The present study could not reveal any chromosome to be identified as a sex chromosome.

Literature cited.

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- 5) Fraser, A. C. and Gordon, M. (1928): Science 67.
- 6) „ „ „ (1929): Genetics 14.
- 7) Gordon, M. (1927): Genetics 12.
- 8) Vaupel, J. (1929): Jour. Morph. & Physiol. 47.
- 9) Winge, Ö. (1922 a & b): Jour. Gen. 12.
- 10) „ (1923): Ibid. 13.
- 11) „ (1927): Ibid. 18.