SHORTER ARTICLES AND DISCUSSION

A NOTE ON THE GONADS OF GYNANDROMORPHS OF *DROSOPHILA AMPELOPHILA*

FIVE gynandromorphs of *Drosophila amelophila* were sectioned and their gonads studied in order to determine whether the gonads corresponded to the secondary sex characters expressed by the somatoplasm. The specimens were either lateral or fore and aft gynandromorphs.

I. This gynandromorph arose from a cross between a white eyed fly and a fly of the wild type. On one side of the body the eye was red, the wing long, the sex comb lacking, and the abdomen characteristically female. The other side had a white eye, short wing, sex comb and male abdomen. The external genitalia were abnormal.

The fly would not mate, not only because of the abnormality of the genitalia, but because its mating instincts were indifferent. It was courted by males but, in turn, it itself did not court females.

Since the fly was externally a bilateral gynandromorph one would expect to find that the gonads on one side were male and on the other side female. This, however, was not the case. The gonads on both sides were male and the testes were filled with ripe spermatozoa.

II. This fly arose from a cross of cherry club vermilion with the wild type. The left side had a cherry eye, sex comb, long wing and an abdomen of the female type. The sex comb is characteristic of the male and the long wing of the female. The right side had a red eye, no sex comb, short wing, and abdomen of the male type. The absence of the sex comb is characteristic of the female while the short wing and dark abdomen on this side were male. This is lateral and, at the same time, a fore and aft gynandromorph. The left side was male anteriorly and female posteriorly while the right side was female anteriorly and male posteriorly. The gonads were male but immature. No ripe spermatozoa were seen.

III. The origin of this fly was the same as the last. Both

eyes were red, sex combs lacking, left wing long, and the abdomen characteristically male. The external genitalia were apparently half male and half female. This is not a fore and aft gynandromorph but a lateral one in which the parts involved are restricted to the abdomen and the posterior part of the thorax.

The fly was courted assiduously by males but it would not mate. The gonads on both sides were female and ripe eggs were present. It is probably true that the eggs could not be deposited on account of some defect in the oviducts.

IV. The origin of this fly was the same as the last two, *i. e.*, it came from a cross of cherry club vermilion with the wild type. The eyes were red, sex combs lacking; the wings were of the same length; the abdomen was divided into a female and a male side and the external genitalia were apparently half female and half male. Anteriorly the fly was female, and posteriorly it was half male and half female.

A male courted this gynandromorph as long as the male remained in front of it. When the male with one wing vibrating made a half circle to the tip of the abdomen, it immediately dropped its wing and turned and ran. Sections showed mature spermatozoa in both testes.

V. This gynandromorph arose from the cross of an abnormal form, a possible mutant, with the wild type. The eyes were red, but on one side there was a sex comb and a short wing, while on the other side the sex comb was lacking and the wing was long. The abdomen was characteristically female. The gonads were of the female type on both sides.

The conclusion, if one is justified in drawing a conclusion from so few data, is that the gonads of lateral gynandromorphs do not follow the separation of the somatic cells into a male and a female side, but are always the same on both sides, either male or female. Since the cells of an early embryo must be either male or female producing, we can understand why the gonads of a gynandromorph should be alike on both sides, regardless of the somatic condition, if we suppose that the gonads are derived from a single cell of the embryo.

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