to cardia in one. The most pronounced ulcers, reaching down to the serosa, were obtained at the fundus of the tenth rabbit after extirpation of 2/3 of the right adrenal and five days later of the left.

In fourteen normal rabbits no lesions in the stomach or in the duodenum were seen.

Extirpation of left adrenal and right lobe of thyroid in one rabbit and right adrenal and left lobe of thyroid in another (in one sitting). Stomach and duodenum normal.

It is said that gastric lesions may be present in rabbits from infection. The latter two were the only ones who became infected and yet no lesions in the stomach were seen.

A full report of our work will be published in the near future.

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105 (922)

Mosaics and gynandromorphs in Drosophila.

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Quite a number of gynandromorphs and mosaics have appeared in our experiments with the mutant stocks of *Drosophila*. In some of these the male side or part is maternal, and in others paternal, and in one case both paternal and maternal. For the first type Boveri's hypothesis of partial fertilization will cover the result, for the second my own hypothesis of polysperm will explain the facts. In the third case the result must be due to mitotic dislocation at some early cleavage stage.

In order to test these three hypotheses, I crossed a female homozygous for the sex-linked characters, yellow body color and

white eyes, to a male with the normal sex-linked allelomorphs, viz., gray body color and red eyes, but in addition the male carried a recessive non-sex-linked character, viz., ebony body color.

One gynandromorph appeared among many thousand offspring. It was male on one side (partially) and female on the other. Both sides had red eyes and gray (or dark gray) body color. An analysis of this case shows that the male side must have contained the sex chromosome of its father and a non-ebony autosome from the mother. In other words, the gynandromorph on the male side is like the father except that it carries in addition one of the autosomal characters of its mother. The result means that at some early division a sex chromosome failed to pass to one pole and became lost.

Since this explanation will cover also the first two types, and since neither the hypothesis for the first nor that for the second type will explain all three types the third hypothesis is to be preferred. It leads to the conclusion that *gynandromorphs and mosaics may arise through a mitotic dislocation of the sex chromosomes.*

106 (923)

The applicability of Hermann's theory of alteration.

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1. Herrmann's theory of alteration, which is accepted to-day by many physiologists, assumes that the junction of dead and of living tissue is the seat of an electromotive force which acts in such a direction that the dead tissue is negative while the living tissue is positive. This theory was advanced by Herrmann against DuBois Reymond who tried to explain the currents produced by muscles and nerves by means of complicated structural assumptions. Herrmann's theory has the advantage of expressing in an extremely simple form a large number of physiological observations. It has met general recognition partly also because all the opposing theories were of a very unsatisfactory character. The arguments however which Herrmann advances to support his views are not so conclusive as to fully justify his views. Especially his observation that a