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Inheritance of Resistance and Susceptibility to Salmonella aertrycke in Mice

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Hetzer: Inheritance of Resistance and Susceptibility to Salmonella aertry

tion, not morphological appearance, in the embryogeny was wings, ocelli and wing muscles. This means that in the development of this animal the several organs considered are determined physiologically in linear order, the wings being first, ocelli second and wing muscles last. This is interpreted to mean in general that the organs are determined in a definite order in the embryogeny, but this is not the set thing which some have considered it to be as the general order is frequently disturbed by irregularities.

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A RAPID CELLOIDIN METHOD FOR THE ROTARY MICROTOME

G. L. Walls

A method is described which combines the author's hot celloidin technique (see Stain Technol., VII, pp. 135-145) with a form of the clearing-before-cutting procedure. The method requires only 16-17 days and yields a block which may be cut in any microtome, the sections being as thin as those afforded by paraffin with comparable material. The advantages of celloidin over paraffin, listed in the author's earlier paper (*v. s.*), are retained in the present method which, though consuming more time than the hot process, requires less skill and gives superior results.

Demonstration:

Steps in a Rapid Celloidin Method, with Some Results

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INHERITANCE OF RESISTANCE AND SUSCEPTIBILITY TO SALMONELLA AERTRYCKE IN MICE

H. O. Hetzer

In previous reports by the writer and others it has been shown that the resistance of a strain of mice to controlled infections of *Salmonella aertrycke* could be greatly increased by selective breeding. After fourteen generations of selection for resistance to a standard dose of 2×10^5 organisms the mortality in the selected

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stock (S) was only 8 per cent as compared with a mortality of approximately 98 per cent in the highly susceptible Silver (Sil) and Bagg albino (Ba) strains.

To determine something about the genetic nature of resistance and susceptibility to mouse typhoid, crosses were made between the three strains, and F_1 survivors from the S x Sil cross were backcrossed to the Sil and Ba strains. All progenies were injected with the 2×10^5 dose.

The F_1 generations from S x Sil and S x Ba crosses gave mortalities of about 17 per cent, indicating that resistance is partially dominant over susceptibility. The mortality in the F_1 progenies from the Sil x Ba cross was nearly 20 per cent less than that in their parent strains, these results suggesting that the two strains carried complementary factors for resistance. Segregation of genes for resistance and susceptibility could be definitely established by the striking increase in the mortality exhibited by the progenies from the backcrosses of F_1 animals to the Sil and Ba strains, their death rates being 53 and 48 per cent respectively. The data suggest that resistance is governed by multiple genetic factors. There was no indication that resistance and susceptibility are sex-linked. Neither did the data suggest the presence of linkage between any major factors for resistance and the color genes for albinism (c), non-silver (S) or agouti (A).

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THE RESPONSES OF NORMAL AND CASTRATE FEMALE SPARROWS TO INJECTIONS OF PREGNANT MARE SERUM

Richard Avery Miller

During the winter months ovaries and oviducts of the sparrows are greatly reduced. Injection of pregnant mare serum during this resting period stimulates the ovary to an activity which simulates that of the breeding season. Oviducts respond to the increased amounts of female hormone released by the ovary.

If the left ovary is removed the vestigal right gonad, under the stimulus of the bird's pituitary, may hypertrophy. This natural enlargement can be augmented by the injection of pregnant mare serum. In the cases thus far studied, the hypertrophied right gonad