

times (volume about 125–350 times) that of a primordial ovum. After death or expulsion of the ovum, a few mitoses sometimes occur, but mitoplasia soon ceases; the granulosa cells become pyknotic, and wandering eosinophil cells invade the follicle, which degenerates and disappears, or in suitable conditions forms a corpus luteum.

(3) These observations were found to hold good also for the ovary of the mouse, guinea pig, rabbit and dog. Rat ovaries with and without gonadotrophic stimulation were compared in pregnant, normal adult, infantile and hypophysectomized animals. It was consistently clear that pregnancy does not interrupt the follicular mitoplastic activity of medium-sized egg-cells. A large egg-cell failing to produce follicular mitoplasia was occasionally found, but never a mitoplastic follicle without a larger egg-cell.

**Conclusion.** A follicle-ripening anterior pituitary or anterior pituitary-like factor does not exist.

The pituitary generates an ovotrophic hormone, for which a separate existence from the luteinizing and interstitia-stimulating factors of the gonadotrophic complex is yet undetermined.

The ovum itself produces the folliculoplastic hormone, to isolate which investigation of a suitable technique is in progress. J. FREUD.

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April 25.

#### Histamine and the Action of the Thyroid Gland

IN previous investigations<sup>1</sup> we have pointed out that irradiation of white mice with ultra-violet light is accompanied by a loss of body weight. Furthermore, we have noted<sup>2</sup> that there is a relation between the loss of body weight and the function of the thyroid gland. It was possible to demonstrate that the acetonitrile test of Reid Hunt<sup>3</sup> becomes positive during the time in which a lowering of body weight of the irradiated mice was found. Because there is a connexion between erythema-producing power of ultra-violet light and the weight loss, the conclusion was drawn that the formation of histamine-like substances seems to be responsible for the activation of the thyroid gland and the loss of body weight.

In order to test this belief, the following experiments were carried out: histamine hydrochloride (0.01–0.04 mgm.) was injected subcutaneously into white mice five times weekly for fourteen days. The diet of the mice was bread (32 gm. weekly) and water *ad libitum*. The body weight was controlled every week.

We found that it is possible by this means to effect a lowering of the body weight in the injected mice, but not in every case. Apparently, the initial level of the activity of the thyroid gland is important. In those cases, however, where it was possible to obtain a lowering of the body weight, there was also a positive acetonitrile test.

The accompanying table will serve as a preliminary report:

No.	Average body-weight difference between treated and untreated mice	Acetonitrile test for thyroid according to Reid Hunt. (Doses 1.5 mgm./gm. body-weight)		
		Surviving 24 hours		
		Histamine treated	Untreated	Result
55	– 6 per cent	7 from 10	2 from 9	positive
58	0	4 from 7	7 from 7	inverse
60	– 3 per cent	5 from 9	4* from 8	positive

\* One of these was moribund.

These findings seem to be supported by the findings of Dietrich and Schwiegk<sup>4</sup>. These authors pointed out that injection of histamine produces a higher blood flow in the thyroid gland, as well as in other parts of the circulation, and on the basis of this result a more intense functioning of the gland is understandable.

The observation of a higher degree of activity of the thyroid gland after repeated injections of histamine seems to support further the histamine theory of general ray reactions<sup>5</sup>.

Additional data will be published later.

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May 7.

<sup>1</sup> *Radiology*, in the press.

<sup>2</sup> *Skand. Arch. physiol.*, in the press.

<sup>3</sup> *Amer. J. Physiol.*, **63**, 257 (1923).

<sup>4</sup> *Arch. Exp. Pathol. u. Pharmacol.*, **165**, 53 (1932).

<sup>5</sup> comp. Ellinger, F., "Die biologischen Grundlagen der Strahlenbehandlung" (Berlin, 1935).

#### Development of the Giant Salivary Gland Nuclei of *Drosophila*

THE development of the giant spireme-like salivary gland nuclei of various species of *Drosophila* larvæ (*repleta*, *melanogaster*, *funebria*, *robusta* and *virilis*) has been studied in preparations of whole organs and sections stained after Feulgen.

The nuclei of the salivary glands and other organs of very small larvæ have the structure shown in Fig. 1. The chromocentre is formed at the telophase through the fusion of the heterochromatic proximal ends of the chromosomes. It is situated at the periphery of the nucleus and is always connected with the nucleolus lying in the centre of the nucleus. On the surface of the nucleus are located thread-like paired chromosomes twisted together. Each of these chromosomata consists of two closely connected genonemata. The proximal ends of the chromosomes are united with the chromocentre; owing to this it is possible to determine their haploid number. When the focus is changed a reticulum of the resting nucleus is seen.

The genonemata do not stain after Feulgen and they are well visible owing to the lengthwise arranged

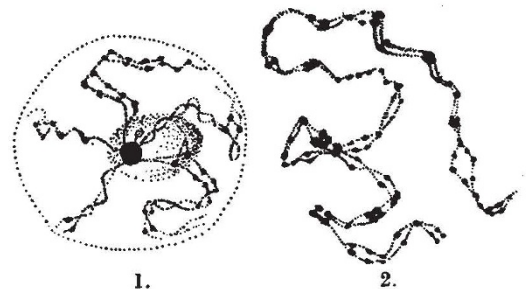


Fig. 1.

A SALIVARY GLAND NUCLEUS FROM A SMALL LARVA (1.5–2 MM. LONG) OF *D. repleta*.  $\times 3200$ .

Fig. 2.

TWO PAIRED CHROMOSOMES TWISTED TOGETHER. FROM THE CAECUM OF THE MIDGUT OF A LARVA OF *D. repleta*.  $\times 3200$ .