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Remarks on the Corpus allatum of *Drosophila*

In this journal Thomsen[1] reported recently on the corpus allatum of *Calliphora* and *Musca*. It develops in them from an "imaginal disk" in the pupal ring gland and therefore begins its function late. Because that author already kindly provided to me this in writing before publication of the results, I examined in the meantime the relationship between the corpora allata and the ring gland of *Drosophila*. Here circumstances are different. As will be shown in another place,[2] the corpora allata do not develop from imaginal cells, but the corpora allata are persistent from what is first the central part of the larval ring gland described by Scharrer and Hadorn.[3]

The following is added as a supplement to these findings: The cells of the "central" ring gland part and/or corpora allata already possess at the larval stage a typical glandular character (see also Scharrer and Hadorn). Furthermore at least already in the last larval instar, and during the whole pupal stage, clear vacuoles are in their cytoplasm. Figs. 1-4 serve as evidence. In Fig. 1 and 2 (ring gland of the last larval instar) and Fig. 3 and 4 (ring gland of a 24 and/or 72 hour pupa) the presence of vacuoles in the cytoplasm of the cells of the "central" ring gland part is recognized and demarked as *V*.

This probably means that that corpora allata of *Drosophila* already *exercises an innersecretory function during both the entire pupal stage and at least during the last larval stage.*

Due to previous experimental results by me,[4] the production of a gonadotropen hormone by the larval ring gland is established. Also the fact of the promotion of the yolk formation in interspecifically transplanted ovaries by implantation of larval ring

glands in adults supported it.[5] Since the statement by Thomsen of the identity of the "central" ring gland part with the corpus allatum there is to be considered the possibility that "central" ring gland part is responsible for the production of the yolk formation hormones. Anyhow, in addition its histological structure during the last larval instar does not argue against it.

Apart from that, the Muscids obviously already allude to the the possiblity existing of a temporal difference in the beginning of corpora allata function, clarifying the many contradictions existing in the literature regarding the role of the corpora allata in ovulation. The large differences in the beginning of ovulation

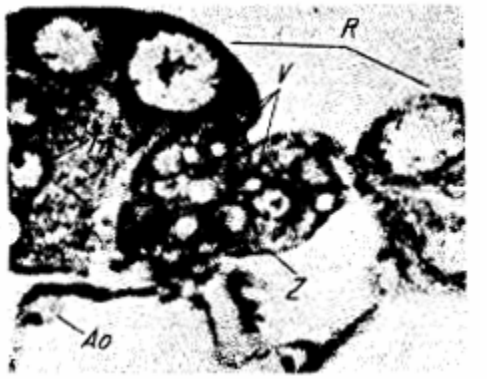

Fig. 1. Cross section through a ring gland of a last larval instar of *Drosophila melanogaster*. *Ao* Aorta, *R* large ring gland cells, *Tr* tracheal nuclei, *V* vacuole, z "central" ring gland part. ca. 730 x.

Fig. 2. Median saggital section through the ring gland of last larval instar of *Drosophila* funebris. Right of arrows "central" ring gland part. Attention is directed at the same time to the chromatin-rich nuclei of the "central" part, which is typical with *Drosophila* for gland nuclei. ca. 730 x.

Fig. 3. Cross section by a ring gland of 24 hour old pupa of *Drosphila melanogaster*. Between the arrows "central" ring gland part (Corpus allatum of Thomsen) *V* vaculole. ca. 730 x.

Fig. 4. Ring gland sectionof a 72 hour old pupa of Drosophila melanogaster. *H.G.* subesophageal ganglion, *R* large ring gland cells, *V* vacuole, *z* "central" ring gland part. ca. 730 x.

in different groups of insects could have along been caused by unequal use of the internal secretory activity of the corpora allata and hence, in certain experimental results the surgical procedure was too late.

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[1] Ellen Thomsen, Naturwiss 29 (1941)
[2] Marguerite Vogt, Roux' Arch (in press).
[3] B. Scharrer and E. Hadorn, Proc. nat. Acad. Sci. U.S.A. 24 (1938)
[4] Marguerite Vogt, Roux' Arch. 140 (1940)
[5] Marguerite Vogt, Naturwiss. 29 (1941)

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