

the fact that secretion had begun in some of the unoperated animals examined at from 10 to 23 days, while in others it had not.

The results obtained in the above preliminary experiments, therefore, suggest that in *Melanoplus differentialis*, as in *Rhodnius prolixus*, the corpora allata are necessary to normal development of the eggs, and that, further, secretion in the glandular portion of the oviducts is also influenced by the corpora allata.

8828 P

Experimental Study of Moulting in the Grasshopper, *Melanoplus Differentialis*.*

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Wigglesworth,^{1,2} working on a blood sucking hemipteron, *Rhodnius prolixus*, found that if the head were taken off before a certain "critical period" in a nymphal stadium, the animal did not moult, but if the head were removed after this time, the animal moulted as usual. On the basis of these and other experiments he concluded that a hormone is secreted in the head, probably by the corpus allatum (a single structure in *Rhodnius*), which induces moulting.

In view of this work it seemed of interest to determine whether moulting is controlled by the corpora allata in the grasshopper, *Melanoplus differentialis*. Therefore, the corpora allata (paired structures in this animal) were removed from a number of nymphs from 1 to 9 days after they entered the 6th and final stadium.

Since most of the unoperated nymphs observed spent from 15 to 20 days in the 6th stadium, it might be expected that animals operated up to the 5th day of this period would fail to moult, yet as shown in Table I, all of the nymphs from which both glands had been removed, including 3 specimens which were operated at one day, moulted from 17 to 23 days from the beginning of the stadium. In addition to the above animals, 8 others were operated at from one to 5 days and 6 at 6 to 7 days, but in these cases there was some doubt whether both glands had been removed, although in most

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¹ Wigglesworth, V. B., *Quart. J. Micr. Sci.*, 1934, **77**, 191.

² Wigglesworth, V. B., *Nature*, 1935, **136**, 338.

TABLE I.

No. of Glands Removed	Days after Entering the 6th Stadium	
	Operated	Moulted
2	1	21
2	1	23
2	1	18
2	2	18
2	3	20
2	3	23
2	5	21
2	9	17

instances it was fairly certain that they had been. These nymphs also moulted, requiring from 18 to 29 days in the 6th stadium. Moulting was slightly retarded in all of the operated animals as compared with the unoperated, but this may be accounted for by the severity of the operation since 5 animals operated at 0 to 5 days without removing the glands spent from 24 to 28 days in the 6th stadium.

Preliminary experiments, therefore, indicate that in *Melanoplus differentialis* the corpora allata do not influence moulting.

8829 C

Effect of High Concentrations of Glucose on Fibroblasts, Leucocytes, and Epithelial Cells.

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Hyperglycemia, according to available evidence, does not damage the tissues. Kirby, Estey, and Wiener¹ noted no real difference in the growth of lens epithelium with a dextrose concentration as high as 478 mg. %, and it was only when the concentration was 578 mg. % that they observed a slight inhibition of growth. Carrel² failed to find any interference with tissue growth in media containing 300 mg. %. Willmer³ states that, other things being equal, the amount

¹ Kirby, D. B., Estey, K., and Wiener, R. von E., *Tr. Am. Acad. Ophth.*, 1932, **37**, 196.

² Unpublished experiments referred to by H. O. Mosenthal in Hyperglycemia, Evaluation in the Treatment of Diabetes Melitus, *J. Am. Med. Assn.*, 1935, **105**, 484.

³ Willmer, E. N., *Brit. J. Exp. Biol.*, 1927, **4**, 280.