

Litteratur.

1824. Meckel, System der vergleichenden Anatomie. 2. Theil. 1. Abth.
 1851. Gaudry, Mémoire sur les pièces solides chez les Stellérides.
 1852. M. Schultze, Über die Entwicklung von *Ophiolepis squamata*, einer lebendig gebärenden Ophiure. Arch. Anat. Physiol.
 1854. Joh. Müller, Über den Bau der Echinodermen.
 1874. Lyman, *Ophiuridae* and *Astrophytidae*, New and Old. Bull. Mus. Comp. Zoölogy, Cambridge.
 1876. Simroth, Anatomie und Schizogonie der *Ophiactis virens*. Z. wiss. Zool. XXVII.
 1878. H. Ludwig, Beiträge zur Anatomie der Ophiuren.
 1879. Vignier, Anatomie comparée du squelette des Stellérides. Archives Zool. Expér. T. VII.
 1882. Ludwig, Zur Entwicklungsgeschichte des Ophiurenskelettes. Z. wiss. Zool. XXXVI.
 1882. Lyman, Ophiuroidea (Challenger Exped.)

4. A Case of Supernumerary Wings in *Pieris rapae* L. (Lepidoptera)¹.

By Geo. W. Tannreuther.

(With 3 figures.)

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Supernumerary wings in insects are of rare occurrence, and relatively few cases have been described. Such rarities are of course greatly prized by insect collectors so that it has not been possible to examine any of the recorded cases carefully. The twenty or more cases described by Bateson (Materials for the study of Variation. 1894) were all of dried imagines, and in none of these was he able to examine closely the structure or attachment of the abnormal members. Of considerable interest is the discovery of an abnormality of this kind in a prepupa of *P. rapae* L.

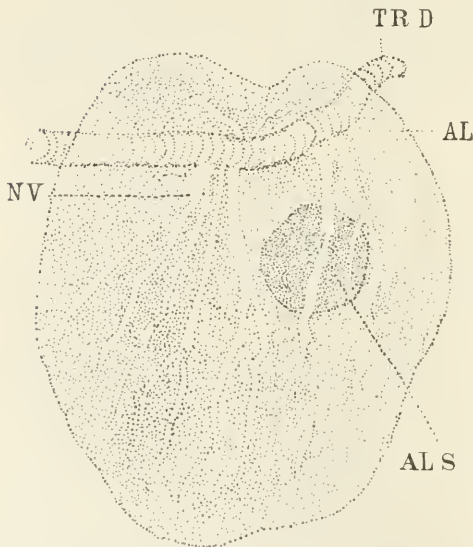


Fig. 1. *P. rapae*. Surface view of right anterior wing with abnormal wing beneath. (From graphic reconstruction.) *AL*, normal wing. *ALS*, supernumerary wing. *TRD*, dorsal tracheal trunk. *NV*, nerves of wing. B. & L. 2 in obj. 2 in oc. 160 mm.

In a series of sections of a prepupa, about thirty hours before pupation, a pair of outgrowths of the hypodermis were discovered upon the mesothoracic segment, lying beneath the wings, and closely resembling a wing in an early

¹ Contributions from the Biological Laboratory of Antioch College No. 4.

stage. The wings proper, are at this time large, well expanded structures being between the larval integument and the hypodermis of the prepupa (Fig. 2).

A graphic reconstruction of the right side of the mesothorax (Fig. 1) showed that the abnormal structure was nearly circular in outline, attached to the body along the dorsal anterior edge, and closely resembling the wing in its mode of attachment. No trace of veins and only a few minute tracheoles were discovered in the cavity

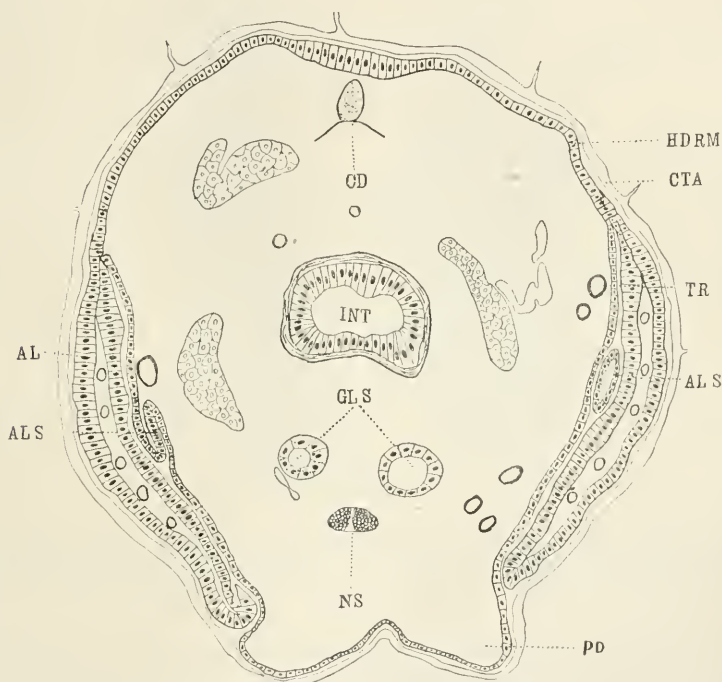


Fig. 2. *P. rapae*. Transverse section through mesothorax. *AL*, normal wing. *ALS*, supernumerary wing. *TR*, trachea. *CTA*, cuticula. *HDRM*, hypodermis. *INT*, intestine. *CD*, heart. *GLS*, spinning glands. *NS*, ventral nerv chain. *PD*, legs. B. & L. 2 in obj. 2 in oc. 160 mm.

of this abnormal wing. Its position upon the body is well shown in Figure 2. It is situated rather low down on the pleural area being somewhat below the joint where the wing discs originate.

The structure consists of a single layer of hypodermal cells of nearly uniform thickness (Fig. 3) and without any indications of further modifications. It was, however, too early in the life of the individual to find any trace of scales or other imaginal structures.

Although in an early stage there is no doubt but that these structures are supernumerary wings such as have been found in the imagines, this case differs from almost all of the recorded cases in being bilaterally symmetrical and in being closely similar to the normal wing in its general outline.

It would be very desirable to know how these abnormal wings originated but the present case gave no clue as to their rise. One

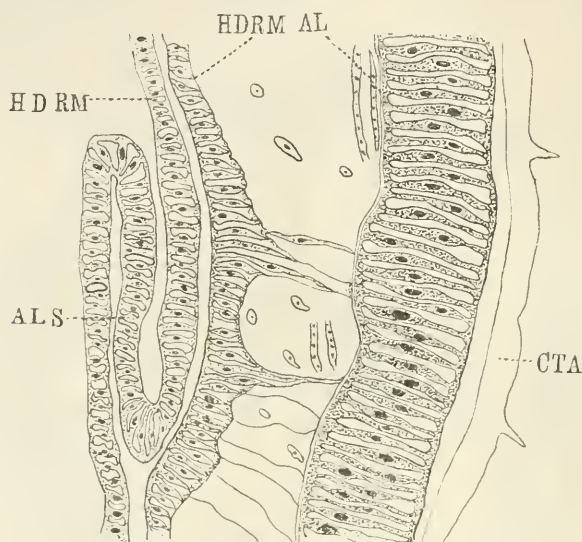


Fig. 3. *P. rapae*. Transverse section through supernumerary wing of right side. *H D R M, AL*, hypodermis of normal wing. *H D R M*, hypodermis of body wall. *ALS*, supernumerary wing. *CTA*, cuticula. B. & L. $\frac{1}{5}$ in obj. 2 in oc. 160 mm.

point of interest was the apparent reflection of the two layers of the hypodermis of the normal wing on the layers of the abnormal one. This was not so clearly demonstrated as could be wished on account of poor preservation (the specimen was killed in Picrosulfuric acid mixture) but indications of this reflection were so frequent, although never covering wide areas, that it is probable that the abnormal wing was nearly if not a complete reflection of the normal structure.

Yellow springs, Ohio, U. S. A., June 25, 1901.

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