A Fourth Supplementary Note upon the Life Histories of the Polysphinctas.

(Hym. Ichneum.).

By
E. Nielsen.

On July 9th, 1936 at Ljugarn in the isle of Gotland in Sweden I found on a fir a female of the spider *Tetragnatha obtusa* C. L. K. bearing a parasitic larva, which clung to the dorsal side of her abdomen anteriorly. The size of the larva showed that its last moult would evidently take place within a few days; indeed, it occurred on July 11th. After the moult, consequently in the last instar of the larva, it was furnished with 7 pairs of warts on the dorsal side, namely two warts placed at the side of each other on each of the third to ninth segments, provided as usually in the genus *Polysphincta* with hooklets for grasping the threads of the host's web and holding the larva fast to the web. As normally in this instar the larva now killed the host and entirely sucked out its abdomen, so that only the empty cuticle was left, whereas it did not attack the cephalothorax nor the legs.

The larva spun a quadrangular cocoon with sharp longitudinal edges, thickest in the middle and tapering towards the ends, which implied that it might be a species of *Acrodactyla* (jfr. E. Nielsen 1928 p. 154).

The ichneumon fly emerged on July 23rd, and to my surprise Dr. A. Roman at Stockholm determined it to be a female of *Colpomeria quadrisculpta* Gr.; however, he made the comment

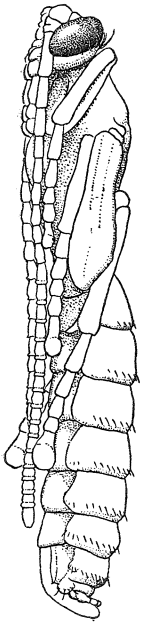

Fig. 1. *Colpomeria quadrisculpta.* The pupa. E. Bülow-Hansen del.

on the determination that, knowing now the host of *Colpomeria*, one might as well abolish this genus and join it with *Acrodactyla*. My surprise was thus well-founded, so in the following I want to show, how closely *Colpomeria quadrisculpta* is allied to *Acrodactyla degener*.

In both species the larvae are in their last instar furnished with the above mentioned 7 pairs of dorsal warts, whereas the specific characters on the last abdominal segment of the pupae are somewhat different; in *A. degener* the said segment is furnished with 2 spines (cfr. E. Nielsen 1923 p. 169 fig. 18) and in *C. quadrisculpta* with 4 spines; these spines are in the latter species bent laterally at the tip, whereas in the former they are rugate throughout the whole of their length. Moreover the pupa of *Colpomeria* lacks the hairs with which the pupa of *A. degener* is furnished towards the tip of its antennae, whereas like the latter is has a row of hairs at the margin of the eye; however, these hairs are not split at the tip as in *A. degener*.

The above mentioned common and discriminating characters in the two species may be sufficient to show that although, indeed, they present themselves as well-defined species, there is not sufficient reason for placing them in two different genera. When for all that this was done, it is, as Dr. Roman writes to me, owing to lacking knowledge of the life history of the animals; only through rearing it is possible on a more solid basis to define the genera and bring about a simplification, as was the case in *Goniocrypus* (cfr. E. Nielsen 1935 p. 252). On July 18th, 1936 in the same locality as above mentioned and

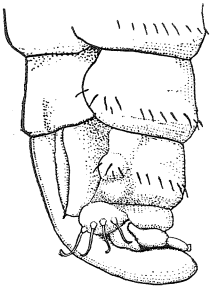

Fig. 2. *Colpomeria quadrisculpta.* The specific character of the pupa. E. Bülow-Hansen del.

on the same fir I found a rather small specimen of *Epeira cucurbitina* Cl., which was a host of a likewise delicate Polysphinctid larva. On account of the smallness of the host there was not much reason to believe that I should succeed in breeding the larva, the more so as it was not possible to induce the spider to eat. As the summer in Gotland was warm and rainless, I took care by means of moist wadding to prevent the host and the larva from shrinking. The larva growed quickly, and its last moult took place on July 26th. However, it was so underfed that, by spinning its cocoon, it was only capable of producing some few threads and then died.

Although on account of the failure of the breeding the species could not be ascertained, it is most likely that this larva, too, belonged to *Colpomeria*, because it had 7 pairs of dorsal warts and did not devour the chitinous parts of the host; moreover *T. obtusa* as well as *E. cucurbitina* are orb-spiders, and the two larvae lived at the same spot and almost at the same time. Consequently there may be some reason to suppose that *Epeira cucurbitina* may be a host for *Colpomeria quadrisculpta*.

Polysphincta pallipes Hgn.

On July 18th, 1936 at Ljugarn I found an oak-leaf, on the upper side of which there was a brown, fusiform cocoon illusively resembling that of *Polysphincta eximia*. I failed to open the cocoon in due time in order to ascertain the specific characters of the pupa, and two days later the imago, a male, emerged. Dr. Roman determined the species as *Polyspincta pallipes* Hgn.

Formerly I bred this species from *Theridium lunatum*, but in this instance I am rather sure that the few threads attaching the cocoon to the leaf did not originate from this spider. There is thus a possibility that *P. pallipes* is parasitic on other spiders, too.

Tromatobia ovivora Boh.

In July at Ljugarn I bred this species from the egg-web of *Cyrtophora conica* as formerly described (E. Nielsen 1923 p. 194). Moreover, however, I bred it from two egg-webs of *Linyphia phrygiana*.

Gelius sp.

From the egg-web of *Linyphia phrygiana* I bred at Ljugarn an ichneumon fly, a male, of the genus *Gelius*, which it has been impossible to determine to species. Contrary to custom another species was bred, too, from the same egg-web, namely two females of *Tromatobia ovivora*. When otherwise breeding more than one parasitic species from an egg-web, one of the species is generally a hyperparasite; it seems to be a rule that an ichneumon fly is capable of sensing whether an egg-web has already been visited by a parasite and infested with its eggs.

The long, thin petiole of *Gelius* may, however, indicate that its larva is not exactly an egg-parasite but an external parasite on the larvae of *Tromatobia*. The flexibility with which the long, thin petiole invests the animal should not seem to be necessary in order to merely deposite eggs in the egg-mass of a spider. This, however, is a mere guessing.

Finally I want to render my best thanks to Dr. A. Roman for the determination of the animals and to Mr. H. Bülow-Hansen for the drawing of the figures, illustrating this paper.

Literature.

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