

Acknowledgement

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THE PUPA AND LARVA OF EUBLEMMA SCITULA

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The lac insects of the continent of India and Pakistan are subject to attack by the caterpillars of *Eulemma amabilis*. There are two other species related to this moth, viz. *E. coccidiphaga* and *E. scitula* which are also important. On *E. coccidiphaga* an article has already been published.¹ *E. scitula*, is quite a common parasite of most scale insects but usually not of lac. However, with Sind lac it appears to be the most common of the three species. It has emerged from *Lakshadia sindica* found naturally on *Zizyphus jujuba* in the city of Karachi.

It might be imagined that *E. scitula*, already found on other scale insects, could conveniently infect lac on trees growing nearby. However, during the author's considerable experience of similar lac on trees within the municipal limits of cities like Bangalore, Hyderabad Deccan, Bombay, Madras, and New Delhi, no specimen of *E. scitula* was ever found. Karachi, with its species, *Lakshadia sindica*, stands as an exception to this rule. Near Hyderabad Sind, lac is cultivated on *Acacia arabica*, and in such material again, *E. scitula* was found in greater numbers than *E. amabilis*.

The egg of *E. scitula* has been previously illustrated.¹ The larva builds over itself a case with

which it moves about well protected. This covering or shield is held by the serrated rows on the dorsal surface of the hind segment seen at the end of the body in Fig. 1. It shows the dorsal view with the posterior end towards the reader. The scale indicates the actual size of the adult caterpillar freed from its covering. Fig. 2 shows the same caterpillar in profile with the posterior end to the left of the reader and the last segment with the serrated portion in profile. Fig. 3 gives the ventral aspect of the same caterpillar; two pairs of serrated rows enable the caterpillar to clamp fast to the twig or to the encrustation of lac, so much so that it is not easy even for a man to dislodge the caterpillar easily from its place. It is thus impossible for the severest winds to disturb it. In all, there are three pairs of serrated rows serving like pseudo-legs, two pairs on the ventral surface, seen in Fig. 3, and one on the last segment as in Figs. 1 and 2, serving to hold the shield or cover under which it moves like a tortoise. This dorsal pair of serrated rows is shown further enlarged in Fig. 4.

The larva before it pupates builds a tough parchment-like cocoon which is by no means easy to tear. From such an envelope, a pupa was removed which gave Fig. 5 as its dorsal view, Fig. 6 as its ventral, and Fig. 7 as its side-view.

Fig. 1.—*Eublemma scitula*, full grown larva, dorsal view, with the posterior end towards the reader. Note the serrated row on either side of the last segment which holds a shield-like cover to protect itself.

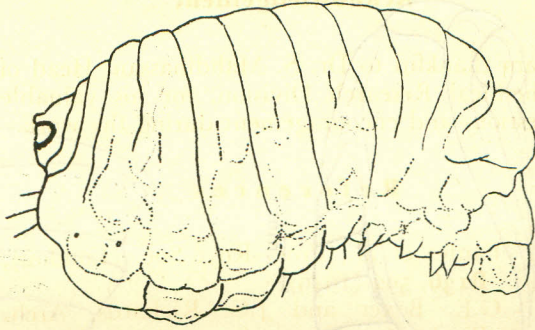
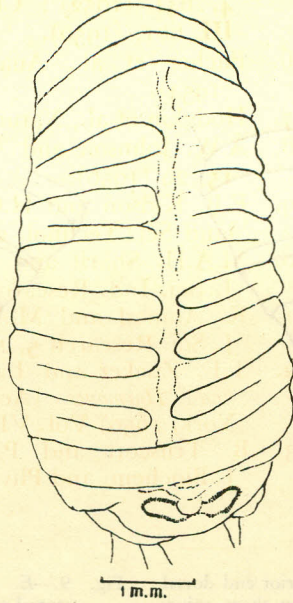


Fig. 2.—*E. scitula*, larva, as in Fig. 1, side-view.

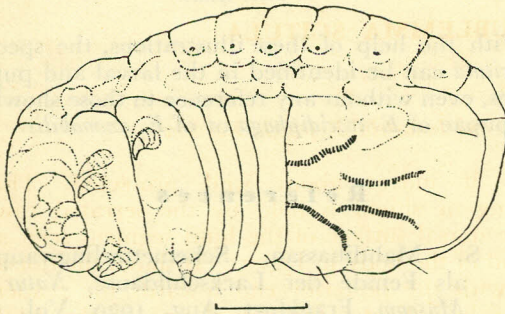


Fig. 3.—*E. scitula*, larva, ventral view. There are two serrated rows used as pseudo-legs.

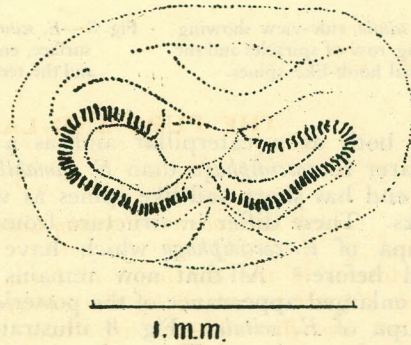


Fig. 4.—*E. scitula*, the symmetrical serrated rows seen on the last segment of caterpillar, Fig. 1, shown enlarged.

Fig. 5.—*E. scitula*, pupa, dorsal view, with short spines near the posterior end and long hook-like spines at the very end.

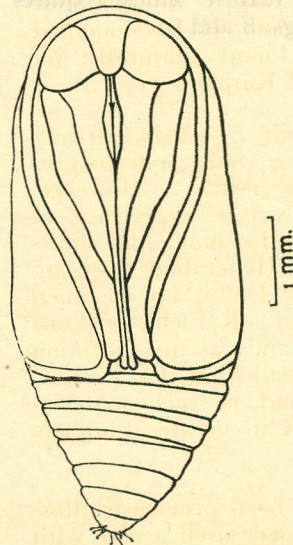
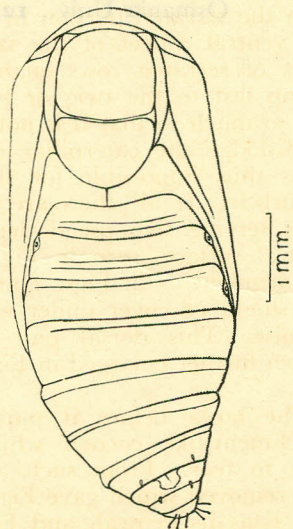


Fig. 6.—*E. scitula*, pupa, ventral view, showing the long hook-like spines.

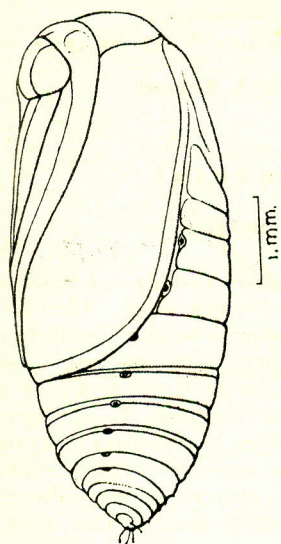


Fig. 7.—*E. scitula*, side-view showing the long row of spiracles and the terminal hook-like spines.

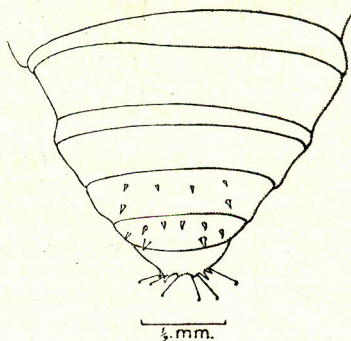


Fig. 8.—*E. scitula*, pupa, posterior end dorsal surface, enlarged to show short spines and the terminal long hook-like spines.

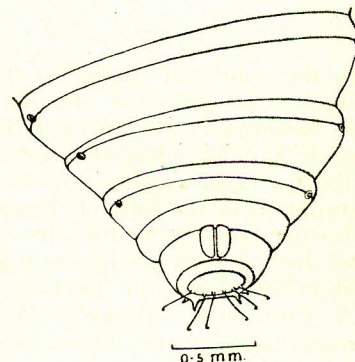


Fig. 9.—*E. scitula*, pupa, posterior end ventral surface, enlarged to show the terminal long hooks and the absence of short spines.

E. scitula both as a caterpillar and as a pupa comes nearer *E. coccidiphaga* than *E. amabilis*. The posterior end has short nail-like spines as well as long hooks. These differ in structure from those of the pupa of *E. coccidiphaga* which have been illustrated before.² All that now remains is to show the enlarged appearance of the posterior end of the pupa of *E. scitula*. Fig. 8 illustrates the dorsal posterior end and Fig. 9 the ventral end of the pupa further enlarged. The shorter spines are present only on the dorsal surface of the pupa as in Fig. 8 and absent on the ventral surface. The hooks of the longer spines are covered towards the ventral side, a feature which requires a careful comparison of Figs. 8 and 9.

With the help of these illustrations, the species *E. scitula* can be identified in the larval and pupal stages, even without any reference to those showing the pupae of *E. coccidiphaga* or of *E. amabilis*.

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