EXTRACT FROM THE PROCEEDINGS

OF THE

ENTOMOLOGICAL SOCIETY OF LONDON,

WEDNESDAY, MARCH 19TH, 1919.

p. xiv.

Note on a remarkable Pupal Structure.—Dr. H. Eltringham exhibited specimens of the pupa and imago of *Cryptophaga rubescens*, and read the following notes :—

Some time ago my friend Prof. Poulton called my attention to a remarkable pupa, which had been shown to him by Mr. J. H. Durrant, F.E.S., specimens of which are now in the British Museum (Walsingham Collection), having been collected by Mr. F. P. Dodd, F.E.S. The species is *Cryptophaga rubescens*, McLeay, of the Tineid family *Xyloryctidae*.

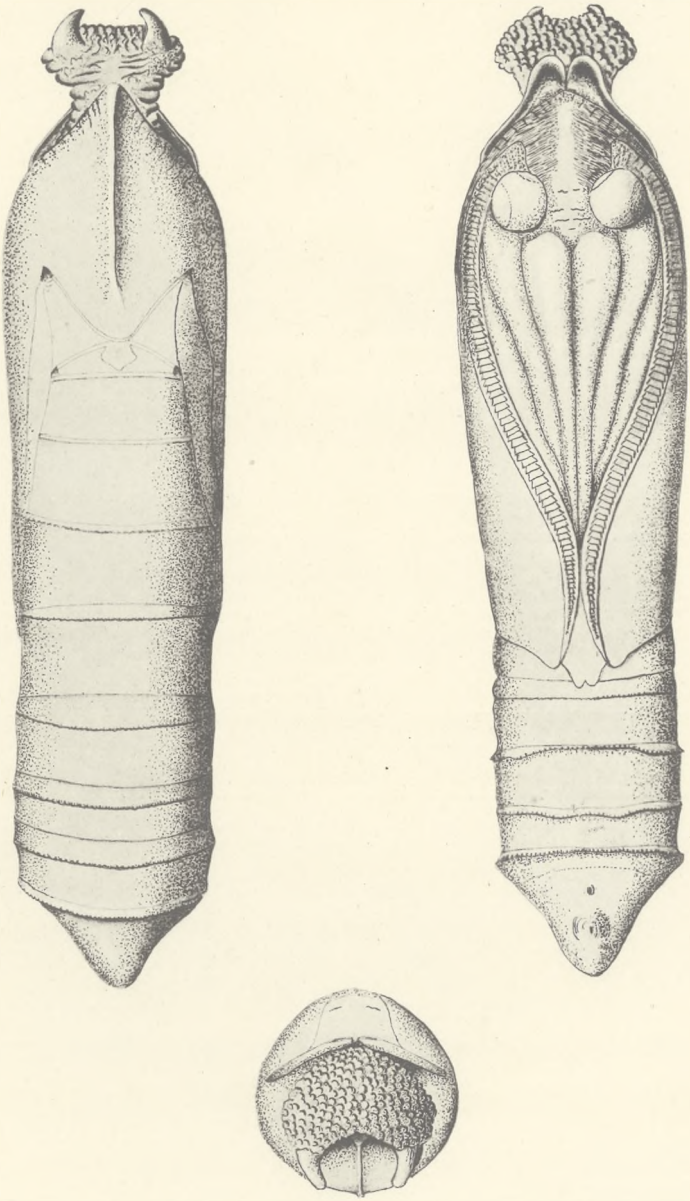
The larva burrows in the stems of species of Acacia, and is found at Toowong in Queensland. The female moth resembles in size and colour one of the paler varieties of our common *Tryphaena pronuba*, but without the black hind-marginal band. The male is much smaller and usually has some dark purple-brown markings on the fore-wing.

When the larva is about to pupate it takes up a position close to the entrance of its burrow, and closes the opening with a plug of silky material. These habits appear to be common to other related species, but the pupa differs from them in having a special chitinous growth on its anterior end, of such a shape as to resemble very closely the head of a wasp. p. xv. I have made drawings of the pupa which are reproduced on Plate A. It will be seen that there is at the anterior end a large more or less rounded mass of somewhat nodular structure, from which project two curved and bluntly pointed processes suggestive of mandibles. But perhaps the most curious development is that of a double ridge of chitin, the significance of which is only realised from a frontal view, when

it is seen to give the appearance of two backwardly directed antennae. The extreme "waspishness" of the general effect is doubtless much enhanced when the structure is viewed in its natural position at the entrance to the burrow. It will be observed that the formation is so arranged that when the pupa is lying on its dorsal surface the wasp head is in the natural position, *i. e.* with the mandibles pointing downwards. It would be interesting to know if the pupa always lies in this position in the hole. Moreover, the roughened surface of the head gives a remarkable resemblance to compound eyes.

It may be remarked that since the burrow is plugged with silk the wasp-like mask cannot be seen in any case. This is true, but it would be of service to the pupa at the critical moment between forcing off the silk plug and the emergence of the moth. Also many pupae of this habit protrude slightly from the burrow for an appreciable period before the imago emerges, and this probably happens in the present case. It should be noted, however, that a certain wasp makes use of the deserted burrows of these and allied wood-boring larvae, whilst there is a tree cricket which preys upon the pupae, and thus the species is probably protected from the cricket by its resemblance to the wasp. The other allied species all have a roughened cap to the pupa, probably used in pushing out the silk plug, but none exhibits even an approximation to this wasp-like formation. It is one of those structures for which it seems impossible to account on any theory of mutation. It is hoped that further observations will be made, especially on the habits of the wasps which use these burrows, and the predaceous crickets. It should not be difficult to discover whether the pupae are in reality protected by their disguise.

I am grateful to my friend Mr. J. H. Durrant for assistance in making these notes.



H. Eltringham, del. (Oxford University Press.)

PUPA OF CRYPTOPHAGA RUBESCENS, McL.