

NOTES ON *ZELOTYPHA STACYI*, AND AN ACCOUNT OF A VARIETY.

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The magnificent Hepialid which the late Mr. A. W. Scott described under the name *Zelotypia Stacyi* from imperfect specimens found at the Manning River and in the neighbourhood of Newcastle, has been obtained in some numbers during the last few years by the Newcastle miners. As the insect is rarely found in the perfect or imago condition the larva has to be sought for and reared, a matter of no little difficulty as it lives, like those of the allied genus *Charagia*, in cylindrical burrows which it makes in the interior of the stems or branches of trees, sometimes near the surface of the ground and sometimes at a height of fifty or a hundred feet. By searching for these burrows and rearing the larvæ or pupæ when found, a considerable number of specimens have been obtained by the miners, but I am informed that the supply is by no means equal to the demand. (1) Sometime ago Mr. R. Thornton, who has reared a number of the lignivorous lepidoptera, transmitted to the Australian Museum the larva and pupa of this species preserved in alcohol, and subsequently he brought for my inspection a male *Zelotypia* which he thought might prove to

(1) Since this article was written I have paid a visit to the mining district in the neighbourhood of Newcastle and have made enquiries as to the time of year when the perfect insect makes its appearance. I am told that when a fully grown larva or pupa is found its precise position is carefully noted, and the locality revisited in December or early in January according to the season. The portion of the limb or sapling containing the animal is then cut and brought home, the end being placed in damp sand to prevent shrinking. The moth usually makes its appearance in February and March.

be a distinct species as it differed materially from any he had previously seen. These specimens form the subject of the following notes.

LARVA—Length 122 mm.; width of head 11 mm.

The larva of *Z. Stacyi* is long, cylindrical, and fleshy, pale yellow above; the divisions between the segments inclining to reddish brown; the first three segments rather bright red, the following segments, with the exception of the last two, provided with three pale testaceous spots in the middle and two on each side; of these the middle spots are transverse, one being placed in front of the two others which are much smaller and situated near the posterior margin; the head is black and finely rugose; legs small, the claws black; stigmata of the usual number.

The larva makes its burrow in the limbs, or occasionally in the trunk, of the Eucalypt (*E. tereticornis*); locally known as the grey gum. It is very active, and like the *Charagiæ*, forms a bag-like covering of triturated bark about the opening of its burrow, which it closes before pupating with a thick pad resembling a gun-wad.

PUPA—Length 96 mm.

The pupa is very long and cylindrical, slightly thickened towards the anterior extremity, with the segmentation, particularly of the thorax, unusually well-marked; the abdominal segments beyond the extremity of the wing-coverings provided with a transverse serrate horny ridge near the anterior margins; below the 7th to 10th segments are provided with similar but less prominent ridges; the anal extremity armed, both above and below, with small sharp spines.

The likeness between *Zelotypia* and *Charagia* is as apparent in this stage as in the larval condition, and the wonderful activity of the pupa in its burrow is equally noticeable in both genera. The power of rapidly ascending or descending the precipitous walls of the burrow, which, as Mr. Scott has pointed out (1), these pupæ possess to a remarkable degree, appears to be due to the serrate structure of the abdominal rings.

(1) Austr. Lepid. p. 4 (1864), and Trans. Ent. Soc. N. S. Wales, II. p. 27 (1867.)

ZELOTYPIA STACYI var. SINUOSA.

♂ Antennæ reddish brown. Head, front of thorax, and abdomen salmon red; the thorax with two broad streaks of white scales, one on each side, which meet behind; abdomen with the last two segments greenish black. Forewing dark fawn colour, the basal half and the apical extremity silvery white, the former dusted with fawn colour, a large ocellus very indistinctly encircled with brown at the end of the discoidal cell, beyond this a moderately broad and very clearly defined silvery white fascia obliquely crosses the entire width of the wing; within this fascia, between veins 1-5, and near the inner margin, the ground colour is more pronounced; the space between the fascia and the hind-margin, which is also deeper in colour, occupied with five or six series of irregular bar-shaped markings; these markings are at right angles to the veins within which they are contained; costa marked with three or four rather obscure patches of white. Hindwing salmon red, darker externally. All the wings crumpled at the extremities. Expanse of wings 166 mm. (1); length of body 64 mm.

Although I have examined a considerable number of *Zelotypiæ* this is the only one I have seen answering to the above description. The points in which it differs from the typical *Z. Stacyi* are at once perceptible and may be summarized as follows:—The ocellus without the white margin and only obscurely surrounded with brown, the oblique fascia much more pronounced with the edges clearly defined, the presence of peculiar bar-like markings near the hind-margin (very unlike the thin, wavy lines on the typical form), and the dull fawn coloured, obscurely marked costal margin, not to mention the deeper ground colour of the whole of the external half of the wing.

(1) The largest female *Z. Stacyi* I have seen is fully ten inches across the wings, measured according to the approved method, *i.e.* from the tip of the forewing to the middle of the thorax doubled.

The specimen was reared from a larva found in the trunk of a black apple tree (1) some three or four feet from the ground, and the only peculiarity observed during its transformation was that the pad with which the larva when fully grown closed the entrance to its burrow was much smaller and less dense in texture than is usually the case. Possibly this specimen may indicate a species distinct from that of the grey gum, but in the absence of more information I prefer to regard it as a variety.

In conclusion it may be of interest to add that the name 'bent-wing' has been conferred upon this moth by the miners.

(1) I am not aware if this is *Achras australis*, which usually passes under that name.



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