

## NOTES ON ALEURODIDAE (RHYNCHOTA) FROM INDIA I.

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Genus **Aleurotuberculatus** Takahashi (1932).

### **Aleurotuberculatus parvus**, sp. nov.

(Plate I, figs. 1-4.)

*Locality*.—Royal Lakes, Rangoon.

*Host*.—*Bombax malabaricum*.

*Pupa case*.—(Pl. I, fig. 1) Colourless, without any waxy or gelatinous secretion, found singly mostly on the under side of leaves. Broadly elliptical, slightly constricted in the region of the thoracic tracheal pores. Margin almost entire with indistinct crenulations, with two pairs of minute setae, a pair anteriorly and a pair posteriorly. Dorsal disc differentiated from the submargin, which bears radial suture-like lines, a row of very fine setae about its middle and a series of crescentic markings on its inner side (Pl. I, fig. 2). Dorsal disc with reticulate markings on its peripheral region, distinctly segmented medially; both the longitudinal and transverse thoracico-abdominal sutures reaching its margin; three pairs of papillae on the cephalothorax and two pairs on the anterior two abdominal segments, the anteriormost as well as the posteriormost pair being larger than the others; in some specimens the posterior pair of papillae on the cephalothorax rather indistinct. Thoracic tracheal folds hardly indicated, terminating on the submargin in distinct circular pores, with a rim without any teeth or markings (Pl. I, fig. 3); caudal tracheal fold broad, sculptured with fine markings, narrowing posteriorly, terminating in a subcircular pore on the submargin (Pl. I, fig. 4).

Vasiform orifice small 0.018 mm.  $\times$  0.036 mm., subsemicircular, with the cephalic margin straight, a thick rim and an indistinct notch at the caudal end. Operculum similarly shaped, completely covering the orifice and obscuring the lingula. Male case smaller than a female case. Length of male case 0.64 mm.; breadth 0.55 mm.

Adults unknown.

This species resembles *Aleurotuberculatus cherasensis* Corbett (1935) but is easily distinguished by the absence of the posterior abdominal papillae, the presence of markings on the caudal tracheal fold and the form of the tracheal pores.

Collected by the author in October, 1929. Several specimens on slides and leaves in my collection. Type in the Indian Museum (No. 5765/H7).

### **Aleurotuberculatus burmanicus**, sp. nov.

(Plate I, figs. 5-12.)

*Locality*.—Rangoon. Insein.

*Host*.—*Cassia* sp.

*Pupa case*.—(Pl. I, fig. 5) Black, sticking beneath leaves, with a greyish white rim of dots on the margin. Subelliptical in shape slightly

constricted in the region of the tracheal folds. Margin almost entire with three pairs of setae, one pair in front and two behind. Dorsal disc differentiated from submargin by its deeper colour and the presence of granular tubercles. Submargin (Pl. I, fig. 6) with radial rows of small semicircular markings and a thick paired wavy suture-like line on its venter about the middle. Dorsal disc with the longitudinal and transverse sutures reaching the extremity of the case, abdominal segments indicated and covered peripherally with abundant granular tubercles of various sizes, as shown in the figure. Thoracic tracheal folds indicated, terminating on the margin in slight indentations without any markings or teeth (Pl. I, fig. 7). Some specimens with indications of a pair of light eye spots. Ventrums of the case with ordinary legs and antennae as well as a pair of elevated sucker-like structures placed on the inner side of the middle pair of legs.

Vasiform orifice (Pl. I, fig. 8) subcordate, with its anterior margin straight, having a thickly chitinised rim bearing one or two papillate projections laterally, a minute pair of papillae in front and a wide notch behind. Operculum similarly shaped, occupying the orifice. Lingula not exposed. Caudal tracheal fold very broad, terminating on the caudal margin in a shallow indentation and marked with a few granular tubercles. Length of female case 0.63 mm.; breadth 0.46 mm.

*Adult female*.—Body dark yellow, tip of the rostrum black, about 1.5 mm. long. Eyes (Pl. I, fig. 9) divided into two halves with different sized facets, by a spinose patch. Antenna (Pl. I, fig. 10) of the usual 7 segments, their lengths and sensoria as shown in the diagram. Wings hyaline with the usual veins, forewing with four grey patches as shown in figure 11. Claws, paronychium and ovipositor normal.

Vasiform orifice (Pl. I, fig. 12) small, subcircular. Operculum subsquarish with a small lingula included within the orifice.

Adult male unknown.

This species bears a close resemblance to *Aleurotuberculatus neolitseae* Takahashi (1934), but it is differentiated by the larger number of tubercles on the dorsal disc and markings on the caudal tracheal fold.

Fairly common. Was found breeding in October, 1929 when I collected it. Types in the Indian Museum (Pupa Case No. 5766/H7; Female No. 5767/H7).

Genus **Aleuroputeus** Corbett (1935).

**Aleuroputeus publicus**, sp. nov.

(Plate II, figs. 1-7.)

*Locality*.—Nagpur.

*Host*.—*Tephrosia purpurea*.

*Pupa case*.—(Pl. II, fig. 1) Black, found in abundance on the underside of leaves, occasionally on the petiole of a leaf; with a copious waxy fluff both on the margin as well as the dorsum arranged as follows. Three large masses of white fluff on dorsum, two on cephalothorax and one on mid abdomen respectively, about ten white spots on the submargin of the abdomen, and a broad fringe of close set filaments all round the margin (Pl. II, fig. 2). Elliptical in shape, with an indented

margin made of rounded teeth (Pl. II, fig. 3). Dorsum demarcated from the submargin by a chitinised fold. Submargin broad with paired dark markings arranged in a more or less radial fashion, also with a pair of light eye spots near the anterior end and about nine pairs of small spines disposed on the periphery. Dorsum with the longitudinal suture reaching the margin and the transverse thoracico-abdominal suture reaching the submargin. No trace of tracheal folds or pores; minute circular pores, about eight pairs on the cephalothorax, one pair each on the first two abdominal segments, three pairs on the third abdominal segment, and two pairs on the following four segments, arranged in longitudinal rows. A pair of swellings with sucker-like ends submedially on the ventrum of the cephalothorax. Antennae and legs normal; rostrum large and truncate at the tip. Abdominal segments distinctly indicated, with more or less rounded lateral extremities, terminating caudally in an elevation bearing the vasiform orifice.

Vasiform orifice subcordate with a pair of spines laterally. Operculum similarly shaped, filling the orifice and obscuring the lingula; two pairs of longer bristles on the submargin behind the orifice. Length of female case 0.88 mm.; breadth 0.55 mm.

*Adult female.*—Head and thorax sooty, abdomen sooty yellow with the tip greyish; eyes divided into two parts differing conspicuously regarding the size of the facets, the lower half sooty, the upper half crimson; rostrum yellow with the tip black. Length from vertex to tip of abdomen about 1.01 mm.

Antenna of 7 segments, segment II subpyriform, 0.055 mm. long, with a few spines at the distal end; segment III subcylindrical 0.111 mm. long, provided with two fringed sensoria near the distal end; segment IV 0.016 mm.; segment V 0.025 mm. with a fringed sensorium at the distal end; segment VI 0.033 mm. long, without any sensorium; segment VII 0.037 mm. long, tapering to the distal end which bears a single fringed sensorium (Pl. II, fig. 6).

Forewing (Pl. II, fig. 5) about 0.962 mm. long and 0.388 mm. broad, translucent white with grey patches as shown in the figure. Radial sector with a single flexure, cubitus seen as a distinct streak. Hindwing about 0.832 mm.  $\times$  0.333 mm. with the usual vein and a dark longitudinal streak along the middle, broken nearly half way.

Abdomen with the usual two pairs of wax glands. Hind tibia 0.31 mm. long, proximal tarsus 0.111 mm., distal tarsus 0.074 mm., claws short and slender, paronychium about the same size.

Vasiform orifice (Pl. II, fig. 7) subcircular, operculum squarish, smaller than the orifice and lying about the middle, lingula cylindrical about the length of the operculum, projecting behind the orifice, a large grey patch surrounding the orifice. Ovipositor strongly chitinised with the ordinary parts.

*Adult male.*—Length about 0.925 mm., coloured with regard to its body and wings like the female except that there are 3 or 4 grey bands on the abdomen and the usual 4 pairs of wax glands. Antennae and Vasiform orifice like that of the female, proportionately smaller.

Claspers (Pl. II, fig. 4) 0.111 mm. long, tapering and slightly incurved at the tip with one or two spines on the inner border; penis somewhat

swollen at the base, cylindrical distally, about three-fourth the size of the claspers.

Breeding in abundance in October. Adults very brisk at flight. Abundant material on leaves and slides. Types in the Indian Museum (Pupa Case No. 5768/H7 ; Female No. 5769/H7 ; Male No. 5770/H7).

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