

at sides of scutellum and postscutellum, and in coarser and more irregular punctures of abdomen. One ♂ spcm., Denver, Colo., July 20, 1898, on *Cleome serrulata* (D. 1105b).

Philanthus arizonæ, n. sp.

♂.—Length, 7 mm. Jet black with pale yellow markings. A fairly thick growth of fine white pubescence on face and cheeks, more downlike on thorax, hardly apparent on abdomen; eyes close, about the distance apart on vertex of the length of joints 3-4 of antennæ; collar declivitous; wings clear, not clouded, nervures outwardly fuscous, stigma and towards base pale rust-coloured; no cavity at sides of scutellum and postscutellum; joints 3-5 of antennæ on one side, face to ocelli (except base of antennæ), two spots on vertex and two behind eyes, collar, two spots on fore mesothorax centrally, most of scutellum, postscutellum, tegulae, tubercles, spot behind, knees, tibia, yellow; lower face, tegulae and tubercles very pale, almost white; tarsi rust-coloured mostly; punctures on vertex fine, sparse, on mesothorax fine, closer (scutellum and postscutellum not punctured), metathorax (including poorly defined enclosure) fine, close, on abdomen fine and close, about evenly distributed, on venter scattered, fine.

One ♂ spcm. taken by Dr. Griffith, at Phoenix, Arizona, Nov., '97, and numbered D. 1331 in my collection.

"Collar declivitous," as used above, describes *P. punctatus*; not declivitous would describe *P. ventilabris*.

THE EPIPLEMIDÆ THE LOWEST BOMBYCIDES.

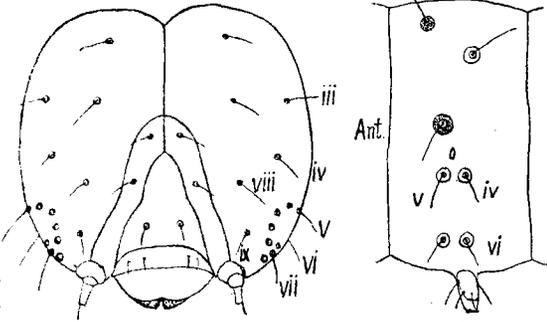
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The Epiplemidæ are a family of moths fairly well represented in India. (See Hahpson's Moths of India, III., 121.) Only one larva is known, that of *Epiplema latifasciata*, Moore, and unfortunately the figure is insufficient to show more than that the feet are normal (five abdominal pairs, and the setæ probably single. The family occurs also sparingly in Amer.ca. Hulst lists three genera as a subfamily of Geometridæ, the Strophidiinæ (Trans. Am. Ent. Soc. XXIII., 309); but I would certainly prefer Hampson's treatment, both as to the name and rank of the group.

By good fortune some larvæ of one of our species were bred at the Department of Agriculture at Washington in 1882, and inflated larvæ prepared by Koebele. They have remained undescribed to the present time. The species is *Callidapteryx dryopterata*, Grt., which falls near

the Indian genus *Orudiza*, Walk. The larvae are remarkable. They possess the five normal pairs of abdominal feet, with rather few crotchets on the inner three-fourths of the planta, double hooked, of two not very regular lengths. The setæ are distinct but short, with large tubercles, single except that vi. consists of two setæ, arising from separate tubercles on abdominal segment 3 and posteriorly, but from the same tubercle on segments 1 and 2. Tubercles iv. and v. are separate on the posterior segments, strictly in line, iv. not at all higher. On abdominal segments 1 to 3 they are united together. There is a distinct leg plate with scattered setæ. On the thorax i. a + i. b, ii. a + ii. b, iii. separate, iv. + v., vi. double. The prothoracic shield is broken up, the lateral piece the most distinct and bearing three setæ. The head has single setæ, fairly distinct. Those on the epicraneum are normal above; i., i. and iii. forming a right angle; iv. below; v., vi. and vii. behind the eyes; vii. situated between the two lower ocelli; viii. above the level of the eyes, midway between them and the clypeus; ix. half way

between viii. and the base of the antenna. (See Journ. N. Y. Ent. Soc., IV., 93, for numbering of head setæ.) I adjoin a figure showing the head and abdominal setæ of *Callidapteryx* in diagrammatic form. (Fig. 16.)



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The interpretation of these structures is at first puzzling. There is a strange mixture of Bombycid and Tineid characters. Tubercle iv. is in its generalized position, yet on the forward segments it unites with v. as in the Tineids. But the fact that this union is not present throughout shows that it is a recent acquirement, for when such a character is congenital it is present on all the segments without equivocation. Another Tineid character is the union of the upper thoracic tubercles in pairs, especially of ii. b with ii. a. Again, on the head seta viii. is high up as in Tineids.

The Bombycid characters are the leg plates, the half row of crotchets on the feet, the doubling of tubercle vi. and breaking up of the cervical

shield. The usually decisive character of the position of tubercle iv. is here as indifferent as it could possibly be made. I explain the larva as follows: It is at the bottom of the Bombycids, and tubercle iv. has not yet taken up its definite position. The other Tineid anomalies are explained by a comparison with the Drepanidæ, with which this larva bears affinity in the setæ, although there is no hypertrophy of the anal plate. In *Drepana aruata* the thoracic tubercles ii. a and ii. b are united, the epicranial seta viii. is high up, above the level of the eyes, and abdominal tubercle vi. is doubled, all as in Callidapteryx. *Drepana* is then also a low form, but here abdominal tubercle iv. is in the characteristic Bombycid position.

The Epiplemidæ, then, stand at the bottom of the Bombyces, throwing off on one side the Drepanidæ, on the other (judging from the moths) the Geometridæ. Near them the Notodontian stem has arisen, giving rise to the other Bombycid families. (See Proc. Boston Soc. Nat. Hist. XXVII., 146, for a geneological tree. The Epiplemidæ may be added at the point where the stem of the Drepanidæ joins that of the Geometridæ.)

Callidapteryx dryopterata, Grote.

The larvæ were found abundantly at the end of July on *Viburnum nudum*. Moths emerged August 16th, and eggs and young larvæ were found immediately after. Pupæ by September 6th between leaves. Evidently two-brooded. No description accompanies these notes in the books of the Department of Agriculture, and I do not think an adequate one can be made from the blown larvæ. They may have been green or whitish with broken brown lines, tubercles i. and iii. large and dark, the rest pale. Head spotted, 1.4 mm. wide. There is no record of whether the larvæ were exposed or concealed feeders. Stage I. is preserved mounted on a slide labelled 3/4/92, No. 2826, but so badly shrunken that I cannot see the arrangement of setæ. Feet slender, the crotchets nearly bordering the planta, anal plate prominent but not produced; setæ large.

THE TORONTO BRANCH of the Entomological Society of Ontario held its second annual meeting on the 1st of April last. The following officers were elected for the ensuing year: President, Mr. R. J. Crew; Vice-President, Mr. C. T. Hills; Secretary-Treasurer, Mr. Arthur Gibson; Librarian-Curator, Mr. H. D. Chipman; Members of Council, Messrs. H. C. Tyers and E. M. Fenwick. The Department of Education for Ontario has granted to the Society the free use of a room in which to hold its meetings and place its library and collections.