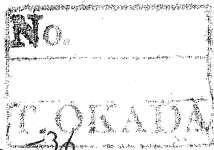


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ON THE GENUS *CRYPTOCHÆTUM*

(*Diptera, Muscida acalyptrata*)

By FREDERICK KNAB

The anomalous genus *Cryptochætum* was first brought to the attention of American entomologists through the discovery that in Australia certain species were parasitic on scale insects and through their introduction into California to control the injurious scale insect *Icerya purchasi*. One of these forms was described by Williston under the name *Lestophonus iceryæ*, from material sent to the United States Department of Agriculture from Australia by Mr. Frazer S. Crawford (*Insect Life*, vol. 1, p. 21, 1888). Shortly afterwards a second species was described in Australia by Skuse under the name *L. monophlebi* (*Proc. Linn. Soc. N. S. Wales*, 2 ser., vol. 4, p. 125, 1889). The validity of this last species has been denied by Williston (*Insect Life*, vol. 1, p. 330), but reaffirmed by Riley (*Proc. Ent. Soc. Wash.*, vol. 1, p. 263, 1890) and recently by Melander (*Journ. N. Y. Ent. Soc.*, vol. 21, p. 248, 1913).

Recently specimens of *Cryptochætum* bred in Ceylon from scale insects of the genus *Walkeriana* were submitted to the writer for determination and this has caused him to go over the literature and the material in the national collection. As it appears that there is still doubt in some minds that the two forms described from Australia are distinct, it seems worth while to record the result. I can point out additional characters for the two Australian species, and the Cingalese form proves to be distinct and is described herewith. Professor Melander, in his diagnosis of the genus (l. c., p. 246), states that a single pair of scutellar bristles is present, but careful examination of all three species shows that there is a series of short bristles medianly on the apical margin which are but weakly differentiated from

India + W. U. S. +

Australia Agromyzidae

the surface vestiture. In the table which follows I am unable to include the European species, *C. grandicorne* Rondani, as I have seen no specimens and the description is insufficient. As pointed out by Rondani, the antennæ are considerably broader in the male than in the female, and this appears to be particularly noticeable in *iceryæ*, although even here the difference is not as great as indicated for the European species by Rondani's figure.

TABLE OF SPECIES

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| 1. Wing elongate; bend of first vein rounded, second and third veins diverging very gradually, the submarginal cell narrow | <i>iceryæ</i> Will. |
| Wing broad; first vein more or less angulate, second and third veins strongly divergent, the submarginal cell broad | 2 |
| 2. Anterior cross-vein usually before end of first vein, posterior cross-vein distinctly arcuate, the convexity toward the second posterior cell; antennæ with the third joint rounded or with an obtuse point | <i>monophlebi</i> Skuse |
| Anterior cross-vein about in line with end of first vein, posterior cross-vein rectilinear; third antennal joint produced to a sharp point | <i>curtipenne</i> , n. sp. |

Cryptochætum iceryæ Williston.

I have not seen the type of this species and do not know if it is still in existence. I restrict the species in accordance with the figure given by Williston in connection with his original description, and with the restriction made by Skuse. It is at once recognizable by the more elongate wings, which finds tangible expression in the longer and narrower costal cell, in the approximation of the second and third veins, and in the more distal position of the anterior cross-vein. The posterior cross-vein is rectilinear. The *Cryptochætum* material sent from Australia is now represented in the national collection by a scant 13 specimens, mostly in very poor condition, from Professor Koebele. Of these I am able to refer six here with certainty. This species is said to be now common in southern California (Essig: Monthly Bull. Cal. State Comm. Hort., vol. 2, p. 250, 1913), but I have seen no Californian specimens that I can refer here and so am unable to say whether this species is established there. See remarks under the following species.

Cryptochætum monophlebi Skuse.

I have specimens before me from Australia and Tasmania which I believe are referable to this species. Three of them are from the Koebele material and three others from Perth, West Australia, collected by G. Compere; eight specimens in poor condition are from Tasmania, from

Arthur M. Lee. It is evident that the figure of the wing given by Williston in connection with his criticism of Skuse (Ins. Life, vol. 1, p. 329, fig. 72, 1890) belongs to this species, although the characteristic outward curvature of the posterior cross-vein is not very well shown. The angulation of the first vein and the wider submarginal cell should be particularly noted in comparison with the original figure of *iceryæ*. There is some variation in the wing venation of this and the foregoing species and the characters pointed out by Skuse are not always tangible, although the broader wing and the short and broad costal cell are obvious. The curvature of the posterior cross-vein, however, seems to be a good diagnostic for this species and coordinates satisfactorily with the other characters. The third antennal joint has a very weak angulation, hardly perceptible in some specimens.

This species is established in California and is an efficient parasite of *Icerya purchasi*. I have before me 20 specimens kindly furnished by Mr. P. H. Timberlake and bred by him from that host at Whittier, California, in 1911. All of these specimens are unmistakably *C. monophlebi*. Skuse was evidently mistaken in supposing that this species is parasitic only on *Drosicha crawfordi*.

Cryptochætum curtipenne, new species.

Color dorsally dark metallic blue; antennæ blackish; legs black, the tarsi lighter colored; wings very broad, grayish.

Frons broad, shining, dark blue, with numerous short but coarse hairs inserted in small punctures. Eyes minutely hairy, the hairs black. Antennæ with the third joint very large and broad, but falling considerably short of the lower eye margin, blackish brown, densely pubescent, the apex drawn out into an acute point in front. Thorax, scutellum, and abdomen shining, metallic blue, uniformly covered with black hairs inserted in small punctures, giving the surface a reticulate appearance. Scutellum large and much produced, roundedly triangular, with a series of small marginal bristles, but weakly differentiated from the surface hairs, on the median portion of the posterior margin. Legs black, the tarsi obscurely yellowish and with longitudinal series of short black bristles. Wings short and broad; first vein distinctly angulate; second and third veins nearly rectilinear and moderately divergent; anterior cross-vein about in line with apex of first vein; posterior cross-vein rectilinear; last section of the fourth vein weak and pale.

Length: Body about 1.8 mm., wing 1.5 mm.

Paradeniya, Ceylon, two specimens, April and May, 1913, bred from *Walkeriana kandyense* Green by A. Rutherford.

Type, Cat. No. 18249, U. S. Nat. Mus.

Nearest to *C. monophlebi*, but slightly larger. It differs from this particularly in the straight posterior cross-vein and in the sharp point of the third antennal joint.