THE BRACONID GENUS TRACHYPETUS GUÉRIN.

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In 1839 Guérin[1] published an account of a very strange Australian Braconid for which he erected the genus Trachypetus. He placed Trachypetus in proximity to Helcon, Sigalphus and Chelonus and recent authors (*e. g.* Ashmead and Szépligeti) have tabulated it as a member of the Cheloninæ, next to Sphæropyx. Apparently this insect remained unknown in nature to hymenopterists since Guérin's time, until 1911 when Schulz[2] examined two specimens in the Saussure collection, obtained in New South Wales. Schulz (*loc. cit.*) makes Trachypetus the type of a new subfamily Trachypetinæ which he places provisionally in the "Cryptogastrini." Among these, he would distinguish the Trachypetinæ by the petiolate abdomen in which the first segment is articulated to and not fused with the post-abdomen as is the case in the other Cryptogastrini except Sphæropyx.[3]

Last summer, I received from Dr. R. J. Tillyard, two specimens of a magnificent Braconid collected at Woy Woy, Queensland, which Dr. Tillyard was unable to place satisfactorily in any family. These prove to be Guérin's *Trachypetus clavatus* which is very carefully described at considerable length in the first publication cited above, and in still greater detail by Schulz.

Trachypetus is undoubtedly a Braconid, but it is much more difficult to locate it in any of the recognized subfamilies. Superficially it is somewhat similar to Sphæropyx in the form of the abdomen which, however, lacks the deeply concave venter characteristic of the Cheloninæ. The wings, aside from the radial cell, and the neuration of the hind pair, are somewhat like those of Sphæropyx as are also the form of the propodeum, multiarticulate antennæ and the legs; here, however, the similarities cease. There

[1] Voyage de la Coquille, Zoöl., vol. 2, pt. 2, p. 201; atlas, pl. 8, fig. 7.

[2] Zoöl. Ann., vol. 4, p. 85.

[3] Sphæropyx includes one well known and widespread European species, *S. irrorator* Fabr. and several North American species described by Provancher and Cresson. Whether all these may be considered as congeneric, I do not know, but Cresson's species, *S. bicolor* is quite similar to *S. irrorator* and could scarcely be separated although much smaller and of somewhat different habitus. I do not know Tetrasphæropyx Ashmead which is based on *Rhogas pilosus* Cresson, but Mr. Rohwer has kindly examined Ashmead's type and writes me that it is a Rhogadine.

is no circular mouth-opening, which at once removes Trachypetus from the several subfamilies of the group Cyclostomi, with none of which it has otherwise any characters in common, except perhaps the fact that the abdomen resembles slightly that of some

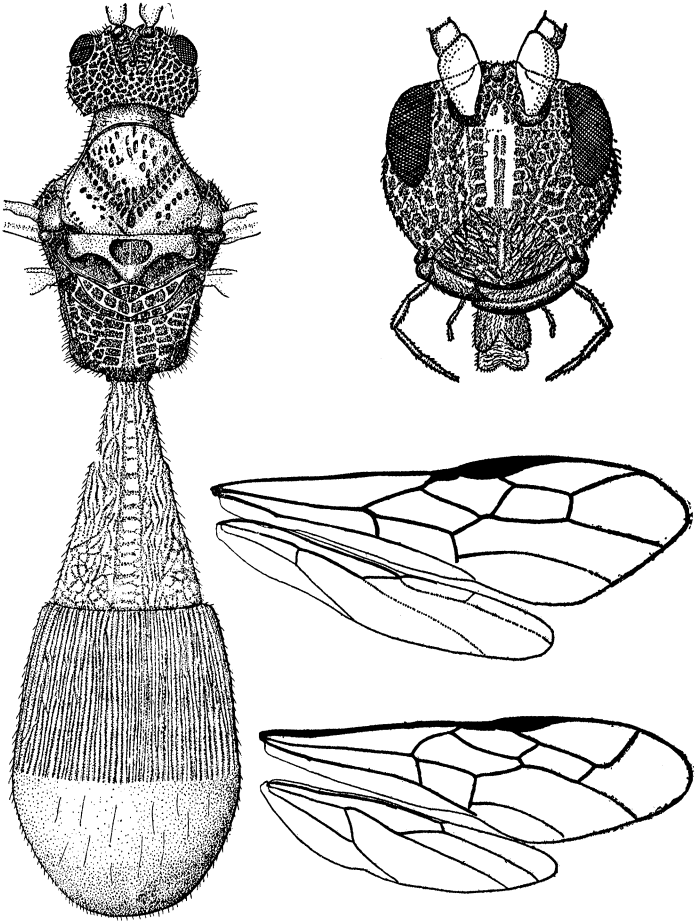

Fig. 1. *Trachypetus clavatus* Guérin; body from above and head from the front; wing of Sphæropyx above, of Trachypetus below.

Stephaniscinæ. It could not possibly be placed in this group and must fall in the Polymorphi, with several groups of which it appears to be allied, although not easily referable to any one of them.

As it has been placed in the Cheloninæ, I shall first compare it with the members of this subfamily. Of these only Sphæropyx has the abdomen petiolate with an actually flexible articulation between the petiole and the post-abdomen. In that genus the carapace is divided by a deep, crenulate suturiform articulation, so that so far as the abdomen is concerned Sphæropyx is more like a Braconine than Chelonine if we take Chelonus, Ascogaster, or even Phanerotoma as typical of this subfamily. In neuration, except for the truncate radial cell, Trachypetus is rather similar to Sphæropyx, neither of which closely resembles any Chelonine. Indeed the neuration of certain Sigalphinæ is more like that of these two genera except for the presence of only two cubital cells and a less complete venation in the hind wing. Beyond the petiole the abdomen of Trachypetus is practically unsegmented although there is a trace of the suturiform articulation, a condition met with occasionally in groups other than the Cheloninæ and Sigalphinæ.

As to its relation to other groups of the Polymorphi, Trachypetus appears to be very generalized. The abdomen is clearly petiolate as in the Meteorinæ and Euphorinæ and Helorimorphinæ with which it clearly has no close affiinity. There are three cubital cells and a large, complete radial cell as in the Macrocentrini and Helconinæ, to which latter group it shows, I think, the closest affinities. Several genera of Helconinæ with the abdomen clavate have been described, such as Brulléia Szép. from New Guinea, and Euscelinus Westw. from Borneo, while Hymenochaonia D. T. (*Chaonia* Cress.) from Cuba may possibly belong here. None of these, however, have the segments of the post-abdomen so completely fused and all may be quite different from Trachypetus, as I unfortunately do not know them in nature. Sphæropyx lacks the thick Helconine head, which is present in Trachypetus.

Aside from the closed marginal cell, the neuration is quite like that of Cardiochiles Nees. as is also the structure of the head, thorax and legs.

Even outside the family Braconidæ, the fusion of the abdominal tergites into a carapace or shield-like piece occurs and this character alone is in no way distinctive of the Cheloninæ. Thus in the Alysiidæ, Symphya has a typical carapace and even in Vanhornia, the type of quite a different family with exodont mandibles the upper surface of the abdomen forms a carapace.

From the foregoing it would appear that Trachypetus is a very generalized Braconid, perhaps best placed in the subfamily Helconinæ as at present understood unless it be separated as Schulz has done as a monotypical subfamily known only by one species in one sex, a position of very doubtful stability. As I believe that the present unsatisfactory classification of the Braconidæ as a whole can be improved only by a careful examination of the quite considerable number of apparently aberrant forms, I have taken this occasion to discuss and figure Trachypetus.

AN INFESTATION OF THE WHITE-PINE APHID.

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While working at the Harvard Forest, Petersham, Mass., my attention was called to a somewhat isolated clump of white-pine trees, forty to fifty years old, which were dying The trees averaged about fourteen inches D. B. H. and were approximately twelve in number. On two sides of the clump of mature trees were young white-pine plantations. A careful examination showed that the trees were being killed due to an extremely heavy infestation of black aphids which upon identification proved to be *Lachnus strobi* Fitch., the White-pine Aphid. Many of the larger limbs were barren of foliage, whereas on others the foliage was brown, the individual needles each showing many puncture marks where the aphids had been feeding.

The trees were first examined October 10, 1919, at which time the aphids were laying their eggs on the needles. These are laid end to end generally in lines of five or six, although as many as twenty-seven were found on a single needle, and it was not at all uncommon to find as many as ten or fifteen attached end to end. The eggs were invariably laid on the green needles, and the aphids apparently anticipating the death of the older trees were laying the majority of the eggs on the younger trees in one of the adjacent plantations. Practically all of the needles on the more heavily infested trees had batches of eggs on them.

Large numbers of the aphids were still feeding. These had congregated on the needles and small twigs. The survival of the