

Description of the male of the endemic New Caledonian species *Aenetus cohici* (Lepidoptera: Hepialidae)

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Abstract Some external features and the genitalia of the male of *Aenetus cohici* (Viette) are described and figured. The male genitalia of *A. cohici* are compared with those of some other *Aenetus* species.

Keywords Lepidoptera; Hepialidae; *Aenetus cohici*; male; genitalia; New Caledonia.

INTRODUCTION

The only species of Hepialidae known from New Caledonia is *Aenetus cohici* (Viette), described from 2 female specimens (Viette 1961). The male has not previously been described, although a specimen was recorded from New Caledonia by Holloway (1979). This paper describes external coloration, leg and palp structure, and genitalia for the male of *A. cohici*.

I have reared 4 male specimens from pupae collected in New Caledonia during November 1980, from Forêt du Thy (22°10'S, 166°35'E) and Montagne Koeanonoa (22°14'S, 166°40'E). There are 2 colour morphs, but the genitalia appear to be identical in all specimens. No copulating pairs were found; the males are presumed to be *A. cohici* on the basis of a single female reared with them. Although the female's wings failed to expand, its appearance conforms to the description of Viette (1961) for *A. cohici*.

Nomenclature for genitalia follows that of Birket-Smith (1974). Colour codes (Kornerup & Wanscher 1978) were allocated by subjective assessment of hue. Voucher specimens have been deposited with the Museum National d'Histoire Naturelle, Paris and the New Zealand Arthropod Collection, Auckland; the remainder are held in my own collection.

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DESCRIPTION

External features. Wingspan 107-121 mm ($n = 2$); body length 51-61 mm. Labial palp 3-segmented. Eyes large, covering most of head. Antennae filiform, the segments rectangular. Hind legs normally held against side of body and not used for locomotion. Hind tibia flattened laterally (length/width ratio 1:0.34), with a cylindrical protuberance, possibly a scent gland, at the distal end (Fig. 1), and with a tuft of long scales reaching to distal end of leg.

Colour pattern. Dorsal surface of forewing showing 2 colour morphs. Morph A: background colour yellowish-green (29 B-7) with pastel violet spots (16 A-4); costal margin with 4 spots; a median, transverse row of spots from anal margin to costal margin, parallel to apical margin; a scattering of less prominent spots. Morph B: background colour greyish-green (25 B-4); yellowish-green patches faintly visible as transverse rows; pastel violet spots on costal margin; a transverse row of spots from anal margin to costal margin, parallel to apical margin, the spots pastel violet or white with a pastel violet outer edge. Both morphs with the apical and anal margin pastel violet.

Dorsal surface of hindwing pale orange (6 A-5) in basal area, blending into orange-white over remainder; costal margin yellowish-green or greyish-green.

Ventral surface of wings pale orange to orange-white except for extensions of dorsal coloration at anteroventral margin.

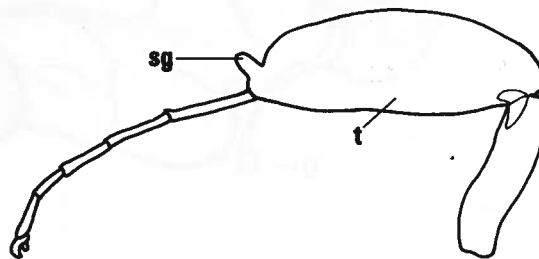


Fig. 1 Right hind leg of *Aenetus cohici*, lateral view, with scales removed (sg, scent gland(?); t, tibia).

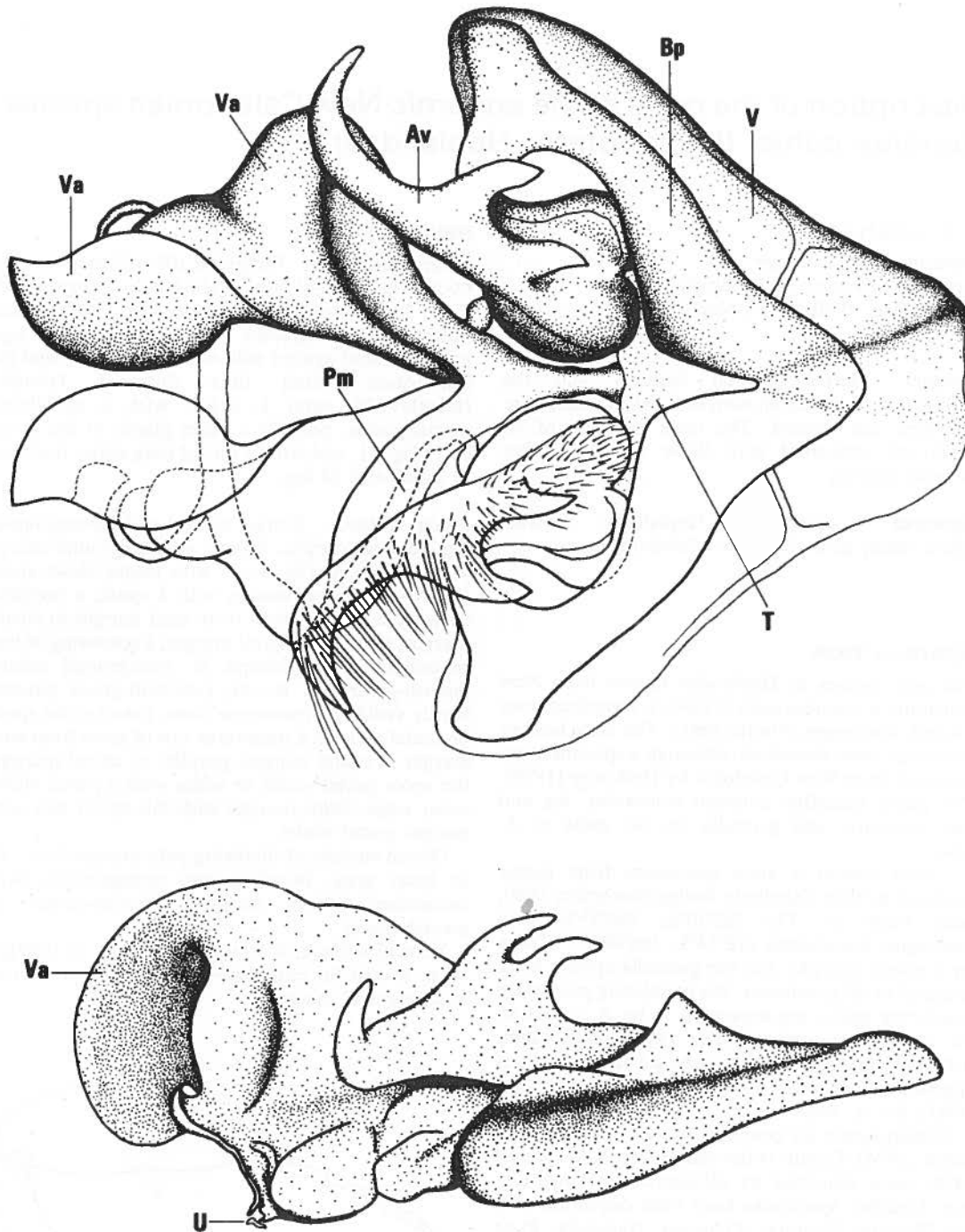


Fig. 2 Male genitalia of *Aenetus cohici*, ventral and right lateral views (Av, ala valvae; Bp, base plate; Pm, processus momenti; T, tabulatum; U, uncus; V, vinculum; Va, valvella).

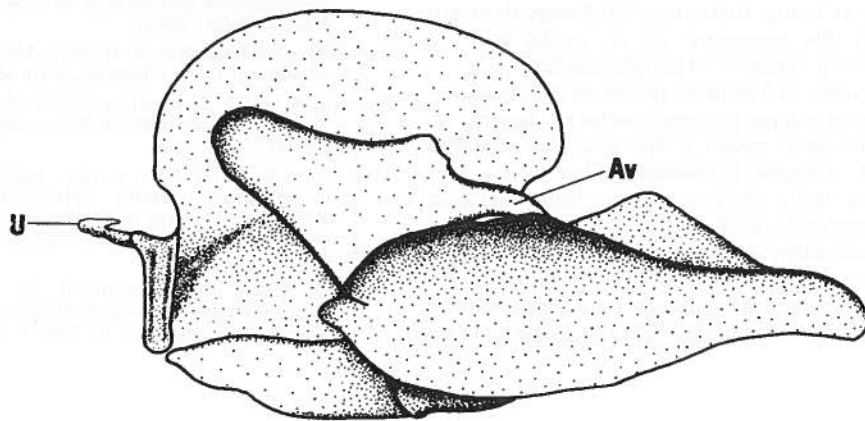
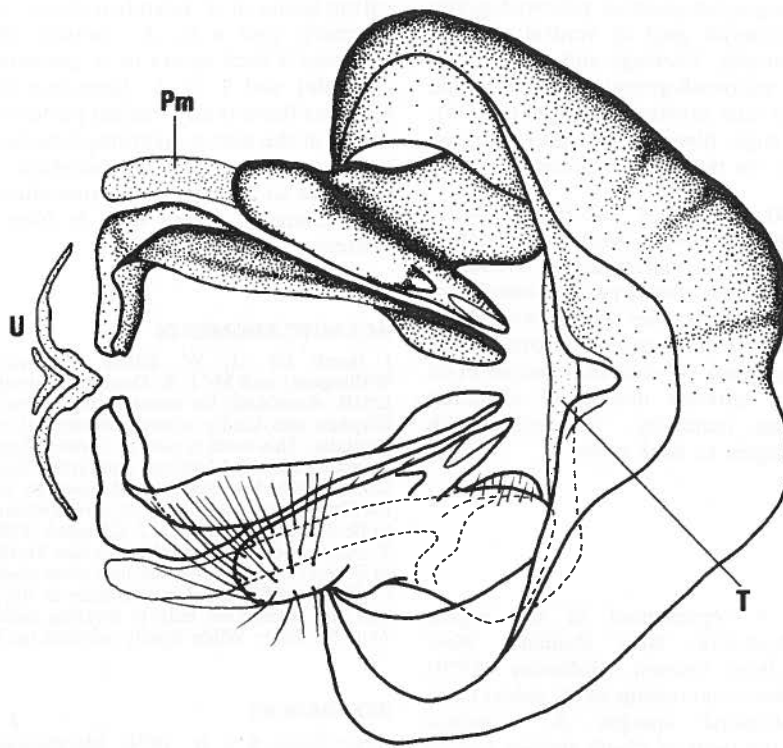


Fig. 3 Male genitalia of *Aenetus virescens*, ventral and right lateral views (conventions as for Fig. 2).

Head and thorax greyish-green or yellowish-green on dorsum and anterior part of ventral surface, orange posteroventrally. Forelegs and middle legs greyish-green or yellowish-green; hind legs pale orange, with tibial tufts brownish-orange (6 C-4). Abdomen pale orange, blending into greyish-green or yellowish-green on posterior segments.

Genitalia (Fig. 2). Posterior valvella a lateral concavity. Anterior valvella with base lightly sclerotised. Uncus small, membranous. Processus momenti extending from widest part of valvella to base of ala valvae. Ala valvae setose, with distal region tridentate. Base plate more sclerotised than vinculum, with a median 'V'-shaped indentation on posterior margin. Anterior margin of vinculum forming a median concavity. Tabulatum with surface at right angles to base plate.

DISCUSSION

Genus *Aenetus* is represented in the region encompassing Australia, New Zealand, New Caledonia, and New Guinea. Holloway (1979) suggested the closest relationship of *A. cohici* to be with the Queensland species *A. mirabilis* (Rothschild), on the basis of "both species having males with pale green forewings and a diagnostic pair of coremata, one large, on each side of the base of the abdomen". 'Pale green forewings' are insufficiently diagnostic, however, being equally applicable to several species of *Aenetus*. Moreover, the position of the coremata (hind tibial tufts) as described by Holloway may be erroneously construed as being abdominal. Holloway does not distinguish the coremata of *A. cohici* and *A. mirabilis* from those of other Hepialidae.

The presence of 3 or more spines on the ala valvae appears to be unique to some species of *Aenetus* (J. S. Dugdale, pers. comm.). The sole New Zealand species, *A. virescens* (Doubleday), has only a sub-basal spine and a shallow median spine (Philpott 1927, Dumbleton 1966) (Fig. 3). Unfortunately, other descriptions of genitalia are restricted to 4 Australian species (Philpott 1927, Birket-Smith 1974), and a revision of this group is long overdue (Tindale 1953). Philpott (1927) indicates 3 ala

valvae spines in *A. splendens* (Scott) and *A. astathes* (Turner), and 4 in *A. ramsayi* (Scott). I have observed 3 such spines in *A. paradiseus paradiseus* (Tindale) and 2 in *A. lignivorus* (Lewin). In *A. virescens* there is no terminal posterior spine such as occurs in the above-mentioned species, including *A. lignivorus*. *A. cohici* is therefore closer in this character to at least some Australian (and possibly New Guinea) species than to New Zealand's *A. virescens*.

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