A new species of *Zygina* from Papua New Guinea, and records of some leafhopper and planthopper species (Homoptera: Cicadelloidea and Delphacidae)

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Zygina medioborealis n.sp. is described from silver beet and carrots from Papua New Guinea. Indications are that this species, along with its close allies from Australia, New Zealand, and Norfolk Island, forms an incipient genus radically different from Palearctic and Nearctic *Zygina* Fieber. A few species of leafhopper and planthopper are listed, with their hosts; *Cofana nigrilinea* (Stål) is a new record for this locality.

Keywords: Homoptera; Cicadelloidea; Delphacidae; Papua New Guinea; *Zygina medioborealis* new species.

INTRODUCTION

A small collection of leafhoppers and planthoppers was submitted for identification by Mr J. E. van S. Greve, Department of Primary Industry, Papua New Guinea. Of the 36 specimens, 24 were of a new species of *Zygina* Fieber, described below as *Z. medioborealis* n.sp., which was found attacking silver beet and carrots. It belongs to a close-knit group of species among which *Z. dumbletoni* Ghauri, a pest of raspberry, blackberry, and strawberry, occurs in New Zealand (Knight 1976a), in addition to one species endemic to New Zealand, two more found in Australia (Queensland and New South Wales), and one from Norfolk Island. Other species found in this collection are as follows.

1. *Cofana spectra* (Distant), until recently known as *Cicadella spectra* (Distant). A very widely distributed species complex; ex. young carrots.
2. *Cofana nigrilinea* (Stål). Recorded here for the first time from Papua New Guinea; ex. carrot.
3. *Cofana* sp. Two females, ex. carrot and beans.
4. *Deltocephalus hospes* Kirkaldy. A common species in the South Pacific area; ex. carrot.
5. *Sogatella kolophon* (Kirkaldy) (Delphacidae). A very widely distributed species-complex of planthoppers; ex. carrot.
6. *Toya dryope* (Kirkaldy) (Delphacidae). A planthopper distributed in the South Pacific; ex. young carrots.

Genus *Zygina* Fieber

Fieber, 1866: 509 (type-species *Typhlocyba nivea* Mulsant & Rey, 1855, p. 246, by monotypy).

Zygina medioborealis n.sp. (Fig. 1–14)

COLOUR. White, dull, without any markings; eyes brown.

STRUCTURE. Head narrower than pronotum; vertex rounded, produced, much longer in middle than next to eye; distance between eyes at base of vertex 1½× median length. Pronotum – median length twice length of vertex, maximum width twice length. Wing venation as in Fig. 2 and 3.

MALE GENITALIA AND ANAL TUBE. Pygofers almost as high as long; posterior margin rounded; base separated from discal part, almost at 90° to ventral margin, leaving a gap filled by basal two-thirds of subgenital plate; posteroventral half of pygofers with fine setae; in dorsal view, pygofers with a large, deep emargination (Fig. 6) filled by a membrane. Anal tube short; extended part with internal U-shaped frame well sclerotised, lateral processes triangular (Fig. 4, 5, & 9). Subgenital plates with disc bearing 5 macrosetae; outer basal margin with a row of tubercular setae (Fig. 7), remaining outer marginal area and posterior half of inner margin with small microsetae; a short row of similar setae on posterior half of disc. Basal plate (connective) triangular, with an anterior median process (Fig. 10). Paramere (style) robust. Aedeagus short, robust, with a pair of long processes at apex directed ventrally, each as long as half length of shaft; gonopore apical, near base of processes on posterior margin; dorsal apodeme well developed, as long as two-thirds of aedeagal shaft and narrowly diverging from it, thus making a somewhat U-shaped outline.

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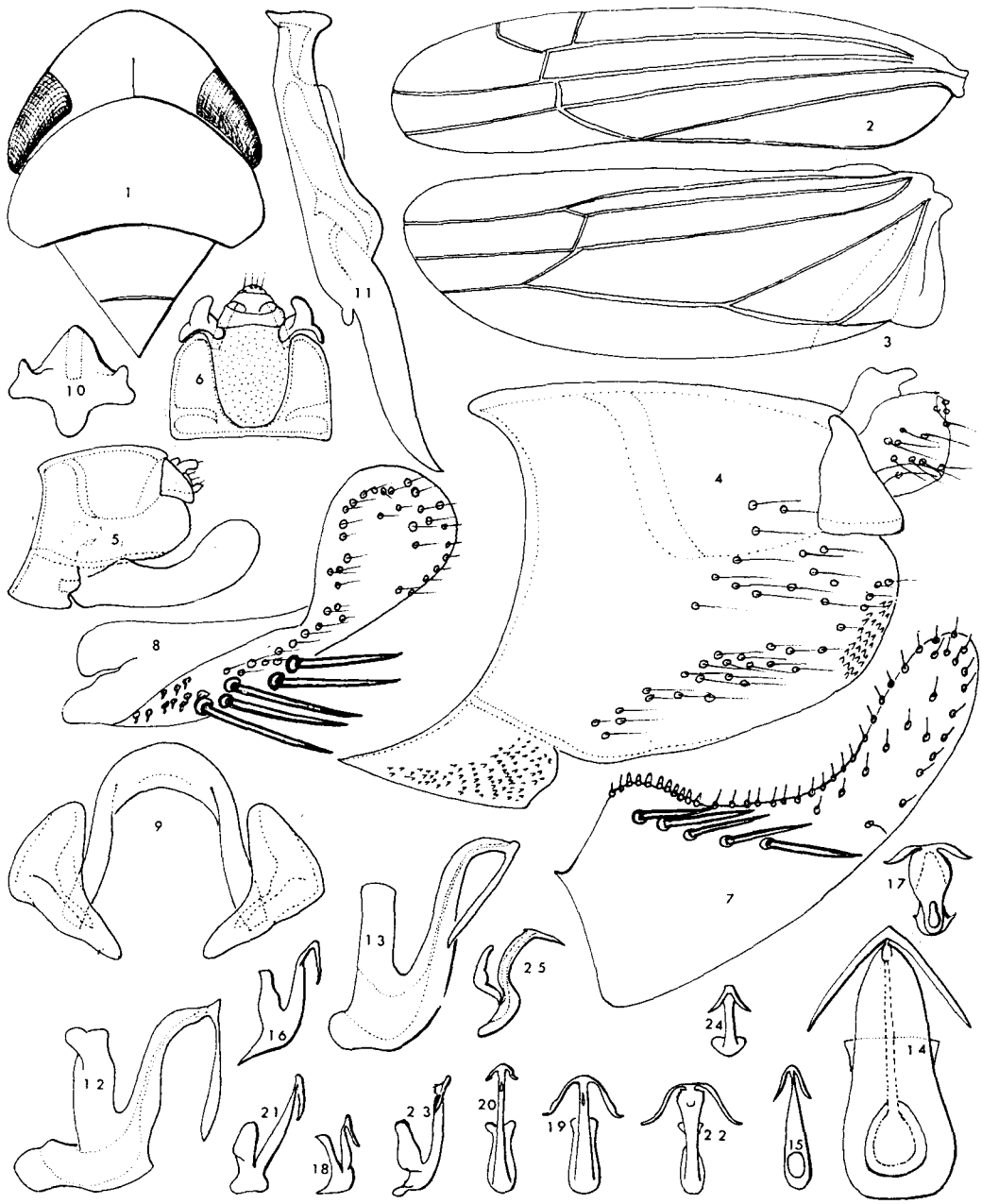

Fig. 1–25. *Zygina* spp., ♂. (1–14) *Z. medioborealis*: **1**, head and thorax, holotype; **2**, tegmen, holotype; **3**, hind wing, holotype; **4**, pygofers and anal tube, lateral view, paratype; **5**, pygofers, anal tube, and subgenital plate, holotype (setae omitted); **6**, pygofers, dorsal view, holotype; **7**, subgenital plate, showing complete outline, ventral view, paratype; **8**, subgenital plate, lateral view, paratype; **9**, anal tube frame and processes, dorsoventral view, paratype; **10**, basal plate (connective), paratype; **11**, paramere (style), lateral view, paratype; **12, 13**, aedeagus, lateral view, paratypes; **14**, aedeagus, dorsal view. (15–25) Aedeagi, in posterior and lateral views, of: **15, 16**, *Z. sidnica* (after Muir, in Myers 1921); **17, 18**, *Z. honiloa* (after Muir, in Myers 1921); **19–21**, *Z. dumbletoni* (after Knight 1976a; fig. 20 from an abnormal ♂); **22, 23**, *Z. agni* (after Knight 1976a); **24, 25**, *Z. jowettae* (after Knight 1976b).

SIZE (mm). Owing to lack of proper preservation, most of the specimens are shrunken. In the holotype male only some parts could be measured: width of head across eyes 0.53; distance between eyes 0.24; median length of vertex 0.17; total body length 2.70.

TYPE DATA. **Holotype** ♂: Papua New Guinea, Enga Province, Wanepakosa, near Wapenamanda, ex. silver beet, 7 Oct 1977, B.M. Thistleton (S. No. 3, C.I.E. A.11514). **Paratypes**: 3♂, 3♀, 2 immatures, same data as holotype (S. No. 2); 6♂, 5♀, 1 immature, same data as holotype except Yaramanda, ex. carrot (S. No. 1); 1♂, 1♀, 1 immature, same data as holotype except Waso Point, Pausa, ex. carrot. On permanent loan to BMNH, London, except 1♂ and 1♀ paratype in New Zealand Arthropod Collection (Entomology Division, DSIR, Auckland).

REMARKS. *Zygina medioborealis* belongs to a group of closely related species—comprising *Z. honiloa* from Queensland (n.comb.; as *Erythroneura* in Kirkaldy (1906)), *Z. sidnica* (Kirkaldy), *Z. dumbletoni* Ghauri, *Z. agni* Knight, and *Z. jowettae* Knight —in which the aedeagal shaft forms a somewhat U-shaped structure with its dorsal apodeme (Fig. 12, 13, 16, 18, 21, & 25). In its combination of atypical apical processes of the aedeagus with the characteristically shaped paramere (style) typical of *Zygina*, this group of species represents a radically different line from European (Palearctic) and Nearctic *Zygina*. It may form an incipient genus peculiar to New Guinea, Australia, New Zealand, and Norfolk Island, with *Z. medioborealis* representing its northernmost extension. Specifically, the new species most closely resembles *Z. sidnica* (Kirkaldy), from which it differs mainly in the wider shaft of its aedeagus and longer apical processes (cf. Fig. 12–16).

REFERENCES

FIEBER, F.X. 1866: Neue Gattungen und Arten in Homoptern (*Cicadina* Bur.). *Verhandlungen der zoologisch-botanischen Gesellschaft in Wien 16*: 509.

KIRKALDY, G.W. 1906: Leafhoppers and their natural enemies. (Pt. IX Leafhoppers, Hemiptera). *Bulletin of the Hawaiian Sugar Planters' Association Experimental Station (9) 1*: 271–479.

KNIGHT, W.J. 1976a: Typhlocybinae of New Zealand (Homoptera: Cicadellidae). *N.Z. Journal of Zoology 3*: 71–87.

———— 1976b: The leafhoppers of Lord Howe, Norfolk, Kermadec, and Chatham Islands and their relationship to the fauna of New Zealand (Homoptera: Cicadellidae). *N.Z. Journal of Zoology 3*: 89–98.

MULSANT, M.E.; REY, C. 1855: Description de quelques Hémiptères-Homoptères nouveaux ou peu connus. *Annales de la Société Linnéenne de Lyon 2*: 246.

MYERS, J.G. 1921: The Australian apple leafhopper (*Typhlocyba australis* Frogg.). *Proceedings of the Linnean Society of New South Wales (4) 46*: 473–4.