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An Indian tropiduchid planthopper *Tambinia verticalis* Distant (Hemiptera: Fulgoroidea) breeding on coconut in Zanzibar

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Abstract

Tambinia verticalis Distant, an Indian tropiduchid planthopper, has been found breeding on coconut in Zanzibar, Tanzania, and also in low numbers in mainland Africa. No *Tambinia* species has hitherto been recorded in Africa. A lectotype is designated for *T. verticalis*, and the species is redescribed and figured.

Introduction

Leafhoppers and planthoppers (Homoptera: Auchenorrhyncha) are being increasingly surveyed as possible vectors of a range of plant diseases. As part of such a survey, to find the vector of lethal disease of coconut palm in Tanzania, samples from coconut in various localities in mainland Tanzania and Zanzibar have been submitted to the CAB International Institute of Entomology (CIE) for identification. Among these a long series of both nymphs and adults of a tropiduchid planthopper was found in Zanzibar with smaller numbers collected from Tanga, on the coast in north-eastern mainland Tanzania.

This species has been identified as *Tambinia verticalis* Distant, described in 1916 from southern India. A redescription of this species is given here. The find is of particular interest as the genus *Tambinia* has not been previously recorded from Africa.

Tambinia Stål

Tambinia Stål, 1859: 316. Type-species *Tambinia languida* Stål by subsequent designation.

The genus *Tambinia* is currently placed by Fennah (1982) in the tropiduchid tribe Tambiniini. Ten genera are recognized in the Tambiniini, distributed both in the Old and New World tropics, but none is recorded from Africa. Among the ten, the Oriental and Australasian genera *Nesotaxila* and *Kallitaxila* appear to be most closely related to *Tambinia*. Species of *Tambinia* have been described from throughout the Oriental and Australasian Regions, but some of these have been re-assigned to *Kallitaxila* and *Nesotaxila*. On this basis, and the reassignments to *Kallitaxila*, it appears that eight of the 11 species currently in *Tambinia* are confined to southern India and Sri Lanka.

In describing *Nesotaxila* from Micronesia, Fennah (1971) gave a key to separate that genus from *Tambinia* and *Kallitaxila*. Certain aspects of the separation of *Kallitaxila* and *Tambinia* are unsatisfactory. The thickened ('callussed') carinae of the face, characteristic of *Kallitaxila*, are also found to some degree in *Tambinia* species, particularly in *T. theivora* (Fennah, 1982). In addition, Fennah (1971) states that the corium (forewing) of *Kallitaxila* is granulate while this is not so in *Tambinia*. In several species of *Tambinia*, including *T. verticalis* and *T. languida*, the type-species of *Tambinia*, granulation is present but not to such a marked degree as in *Kallitaxila* species. However, in spite of these

remarks, I accept that *Kallitaxila* and *Tambinia* are distinct genera, but further work will be necessary better to place and define *Tambinia*, *Kallitaxila* and *Nesotaxila* among the genera of the tribe Tambiniini.

***Tambinia verticalis* Distant** (Figs. 1–10)

Tambinia verticalis Distant, 1916: 47.

Adult. Body flattened, head long with rounded apical margin (Fig. 3), in lateral view strongly flattened (Fig. 2). Median carina of face weak (Fig. 4). Rostrum short, just reaching past first coxae. Forewing with oblique nodal line, apical portion flexing ventrad at this line, basal portion granulate (Fig. 1).

Male genitalia: genital styles symmetrical (Fig. 7), aedeagus tubular, very long, recurved widening slightly at apex (Figs. 8 & 9), passing through basal portion of anal tube (Fig. 9). Anal tube long, sub-rectangular in dorsal view, with concave apical margin (Fig. 5).

Colour: probably pale green in life but faded to pale yellow in dried specimens. Pale orange-red markings on head and vertex (Fig. 3). Forewing suffused to nodal line which is marked by darker pigmentation in some specimens.

Total length: male and female, 6·7–7·3 mm.

Fifth-instar nymph. Flattened (Fig. 10), in life probably pale green in colour but faded to yellow in dried specimens. Chatterjee & Bose (1934) state the colour to be greenish-white. Orange-red markings on dorsal surface as shown (Fig. 10). Chatterjee & Bose (1934) describe long filaments of wax projecting from anal segment. These were not present in the specimens examined here, which were preserved in alcohol before drying.

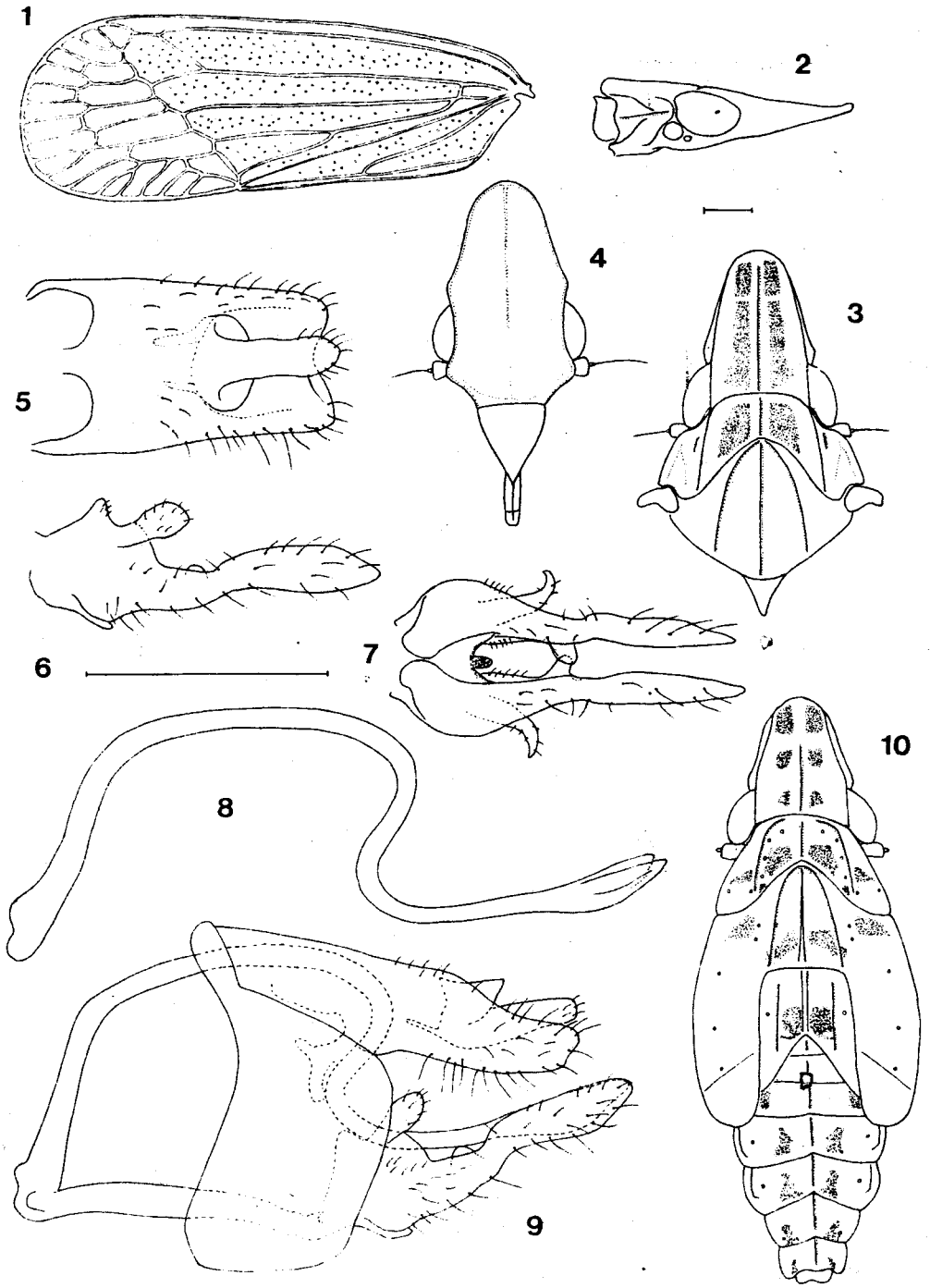
Total length 3·8–4·3 mm.

Material examined. Lectotype ♀ (here designated), INDIA: Coorg, Santikoppa, 22.xi.1912 (*T.B.F. [T. Bainbrigge Fletcher] Coll.*), *Tambinia verticalis* Dist. type [in Distant's handwriting], Distant coll. 1911–383. Other material. INDIA: 1 ♂, 1 ♀, 4 nymphs, Coorg, Mysore, 11.iii.1961 (*K. G. Ananth*) on leaves and young shoots *C[offea] arabica*; a long series from several localities. TANZANIA: 29 ♂, 21 ♀, 7 nymphs, Zanzibar, iii.1985 (*M Schuiling*) CIE Coll. A 17142, on coconut; 4 ♂, 2 ♀, Tanga, xi.1985 (*M. Schuiling*) on coconut. All specimens in BMNH, London.

Remarks. Distant's (1916) original description did not designate a holotype or state how many specimens were examined. From the two localities given, only one specimen is now present in the BMNH collection. This specimen, a female from Coorg, Mysore, is labelled by Distant as the type although it should be considered a syntype. Accordingly, this specimen is designated as lectotype. Other more recently collected specimens from the same locality contained both males and females and are clearly conspecific with the type. In addition to this, a long series from Chikballapura (Mysore) and other southern Indian localities is also present.

Southern Indian specimens show little variation compared with those collected from Zanzibar and there is little doubt the species is *T. verticalis*.

Host-plants. Few Indian *Tambinia* species have been noted since their original descriptions. *T. verticalis* however, is an exception. In the 1930s, *T. verticalis* was collected and tested as part of the survey to discover the vector of sandal spike-disease in southern India. Chatterjee & Bose (1934) record the failure of *T. verticalis* breeding experiments on sandal, stating that its true host-plant was *Canthium didymum* (Rubiaceae) and that it was only a casual visitor to sandal. Other experiments showed it was not a vector of sandal spike-disease (Dover & Appanna, 1934). Unfortunately, although specimens were submitted to the then Imperial Institute of Entomology (predecessor of CIE), apparently none was retained in the BMNH collections. It is therefore not possible to be certain that the identification was correct and that the host-plant of *T. verticalis* is *Canthium*. Specimens (both adults and nymphs) in the BMNH collection from the type locality were



Figs. 1–10.—*Tambinia verticalis* Distant. 1, Forewing; 2, head, lateral view; 3, head, dorsal view; 4, face; 5, male anal tube, dorsal view; 6, male genital style, lateral view; 7, male genital styles, ventral view; 8, aedeagus, lateral view; 9, male genitalia, lateral view; 10, fifth-instar nymph, dorsal view. (Scale lines = 0·5 mm.)

found on the shoots of arabica coffee (*Coffea arabica*). In Zanzibar, nymphs and adults were found commonly on coconut.

Since 1939, there has been little or no mention of *T. verticalis* in the literature. Metcalf (1954) records nothing after 1939. No mention of *T. verticalis* has been found since 1939 in the *Review of Applied Entomology*.

Distribution. Although commonly found in Zanzibar on coconut, the species is rare in mainland Tanzania having only recently been found in the coastal area of Tanga. Earlier surveys had failed to find the species (M. Schuiling, pers. comm.). No *Tambinia* species have hitherto been recorded in the Afrotropical Region, and no specimens have been found in the accessions of the BMNH. It seems likely that the species may have only recently arrived in Zanzibar and mainland Tanzania, either as a result of chance migration or through introduction by importation of plants containing eggs. There is no information of any pest status at present.

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