

Contribution to the knowledge of *Bolanusoides* Dist. (*Auchenorrhyncha*, *Cicadellidae*, *Typhlocybinae*, *Typhlocybini*)

by I. DWORAKOWSKA

Abstract

Review of all known species with complete references to taxonomy and distribution. The following new species are described: *Bolanusoides bator*, *B. bir*, *B. gieroy*, *B. held*, *B. meekoa*, *B. pahlawan*, *B. sankari*, *B. tuahangata* and *B. yinxiong*.

Key-words: *Bolanusoides* review, new species, *Typhlocybinae*, *Auchenorrhyncha*.

This paper is based on the material available at the moment and, together with my previous article (DWORAKOWSKA, 1988), will make possible identification of all known species.

The type-series of newly described species are deposited in the collections listed below, curator of holotype is mentioned first at certain description.

BMNH The Natural History Museum (Brit. Mus. Nat. Hist.), London

IRSN Institut Royal des Sciences Naturelles de Belgique, Bruxelles

ITZ Instituut voor Taxonomische Zoologie, Zoologisch Museum, Amsterdam, The Netherlands

SMTD Staatliches Museum für Tierkunde, Dresden, Germany

MCSN Museo Civico di Storia Naturale, Genova, Italy

The names of the new species mean "hero" in various languages, viz: "bator" in Mongolian, "bir" in Bengali, "gieroy" in Russian, "held" in Dutch, "meekoa" in Hawaiian, "pahlawan" in Indonesian, "sankari" in Finnish, "tuahangata" in Maori, and "yinxiong" in Chinese (Mandarin) like the names of the already known species "bohater" in Polish and "heros" in Greek.

Bolanusoides DISTANT, 1918 p. 90; type species: *B. heros* Distant

Camulus DISTANT, 1918 p.97; type species: *C. ornatus* Distant: McATEE, 1934 p. 104

Now the genus is known to comprise 11 identifiable species. They can be grouped into two clusters.

B. heros group: *heros*, *held*, *pahlawan*, *bator*, *yinxiong*, *meekoa*, and (most probably) *bir*.

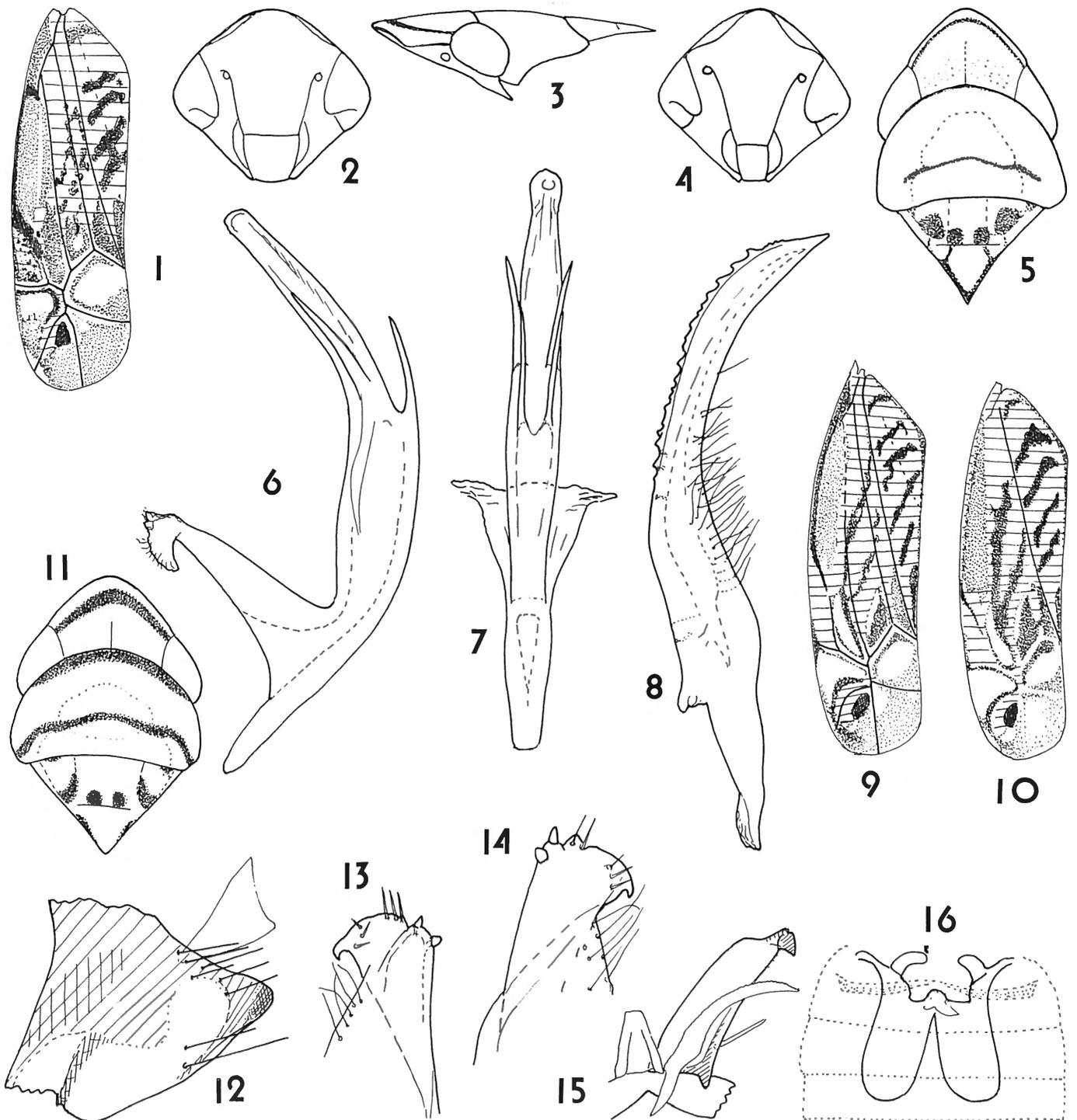
B. bohater group: *bohater*, *gieroy*, *sankari*, and (most probably) *tuahangata*.

Insects of the first group are more robust, dorsoventrally flattened and darkly coloured (from reddish-orange, through orange-ochre to brownish-ochre), usually with rich dark pattern on fore wing and fasciae on vertex and pronotum. Lower part of face of male in this group is more or less dilated (Fig. 2). Their male genitalia are characteristic by penis stem more or less tubular with apical gonopore, longitudinal sclerotizations and well sclerotized paired processes and by setae on paramere restricted to the cephalic 2/3 of its apical part.

The four representatives of *B. bohater* group are only slightly flattened dorsoventrally, light coloured with blackish-brown roundish patches on vertex and pronotum and not numerous pigmented marks on fore wing. Penis stem (except at the very base) antero-posteriorly compressed, feebly sclerotized, containing small folds and (in all three known sets of genitalia) only one pair of slightly sclerotized processes, gonopore subterminal, ventral and setae on paramere occupy more than cephalic 3/4 of its apical part.

Of the genus *Bolanusoides* the most characteristic is subgenital plate structure. The plate is bent up apically; its elevated part bears small rigid microsetae (differentiated in size in *B. heros* group, except *B. gieroy*) and the subapical part of lateral margin is folded up and on the extension protruding mesad it is provided with pigmented conically shaped pegs (up to 4 in *B. heros* group, only 2 in *B. bohater* group). There are slender microsetae at margin of plate, a few and only in upper part in *B. heros* group and a row almost continuous throughout the length of the subgenital plate in *B. bohater* group. In both groups there are microsetae of the submarginal row at apex and a less sclerotized zone just basad of the peg-like setae (it is hardly visible in less sclerotized plate of species of *B. bohater* group). Dorsal bridge between both sides of pygofer is broader in *B. bohater* group than in *B. heros* group.

For the time being no close relatives of the genus *Bolanusoides* Dist. are known.



Figs. 1 - 16 - *Bolanusoides heros* Dist.: 1- 5. - 1: fore wing of fully coloured male (stripped areas mark ochre-brownish), length 3.3 mm - 2: face of male - 3: profile of head and thoracic tergites - 4: face of female - 5: female, head and thorax, dorsal view. - *B. held* sp.n.: 6 - 16. - 6: penis, side view - 7: same, posterior view - 8: paramere - 9: male, length 2.9 mm - 10: female, length 3.2 mm - 11: male - 12: semidiagrammatic representation of proportions and pigmentation of pygofer side and anal tube - 13 and 14: apices of subgenital plates (flattened in slide) - 15: semidiagrammatic representation of proportions and pigmentation of subgenital plate, paramere, connective and 9th abdominal sternite - 16: male basal abdominal apodemes.

***Bolanusoides heros* DISTANT**

Bolanusoides heros DISTANT, 1918 [p. 91, Fig. 54] (Figs 1 - 5)

Camulus ornatus DISTANT, 1918 [p.97, Fig. 58]: MCATEE, 1934 p. 104.

Camulus modestus DISTANT, 1918 [p. 98]: MCATEE, 1934 p. 104

Remarks

The holotype of *Bolanusoides heros*, female from Kumaon Hills (Almora) has relatively small patches at tips and laterad of basal triangles on scutum and two small dots between them (its fore wing has been illustrated: DWORAKOWSKA, 1982 p. 106, Fig. 76). The holotype of *Camulus ornatus*, female from W Bengal (Kurseong) has quite large dark patches laterally and almost fused central patch on scutum (it has been illustrated: DWORAKOWSKA, 1982 p. 106, Fig. 73). In Distant's collection under the name *C. ornatus* is also one female from Almora having all four dark patches on scutum small and of same size and another specimen (perhaps female) from Sikkim. The patches on scutum and scutellum very variable. That contributed to the confusion at the initial identification of this species. The holotype of *Camulus modestus*, female from Almora is accompanied with another female (teneral one) from Almora. In colouration of this species characteristic is very narrow transverse fascia at close distance from anterior margin of vertex, incomplete narrow transverse fascia on pronotum subterminally and only four dark brown fasciae on brownish-ochre clavus. Recorded from S. India, one female from Tamil Nadu (Yercaud) (DWORAKOWSKA, 1982 p. 106) and from central Nepal (Kathmandu Valley) (THAPA & SOHI, 1984, p. 47) and central Nepal (Gara) (DWORAKOWSKA, 1988, p. 5).

Description

Anterior part of vertex (in front of the narrow blackish fascia) ivory. Remaining part of vertex as well as most of pronotum, scutum and scutellum, ochre. The fasciae on vertex, the line at the very anterior margin of pronotum and an incomplete one in its hind part subterminally as well as patches on scutum and scutellum (Fig. 5), blackish. Very apex of scutellum blackish.

Dark olivaceous-grey patch in central part of pronotum continued centrally behind the transverse fascia. Face of male ochre-yellow except whitish anteclypeus and genae and a blackish patch above lorae extending laterad under eye. Face of female largely sordid brown below bases of antennae laterad and above bases of antennae in midline. Sinuate narrow blackish line at the border of vertex and face (Figs. 2 - 4). Face below the line is yellowish, vertex above the line is ivory. Vertex of female is slightly more produced than in male. Fore wing mostly ochre or yellow-ochre with brownish fasciae at base of clavus and at costal

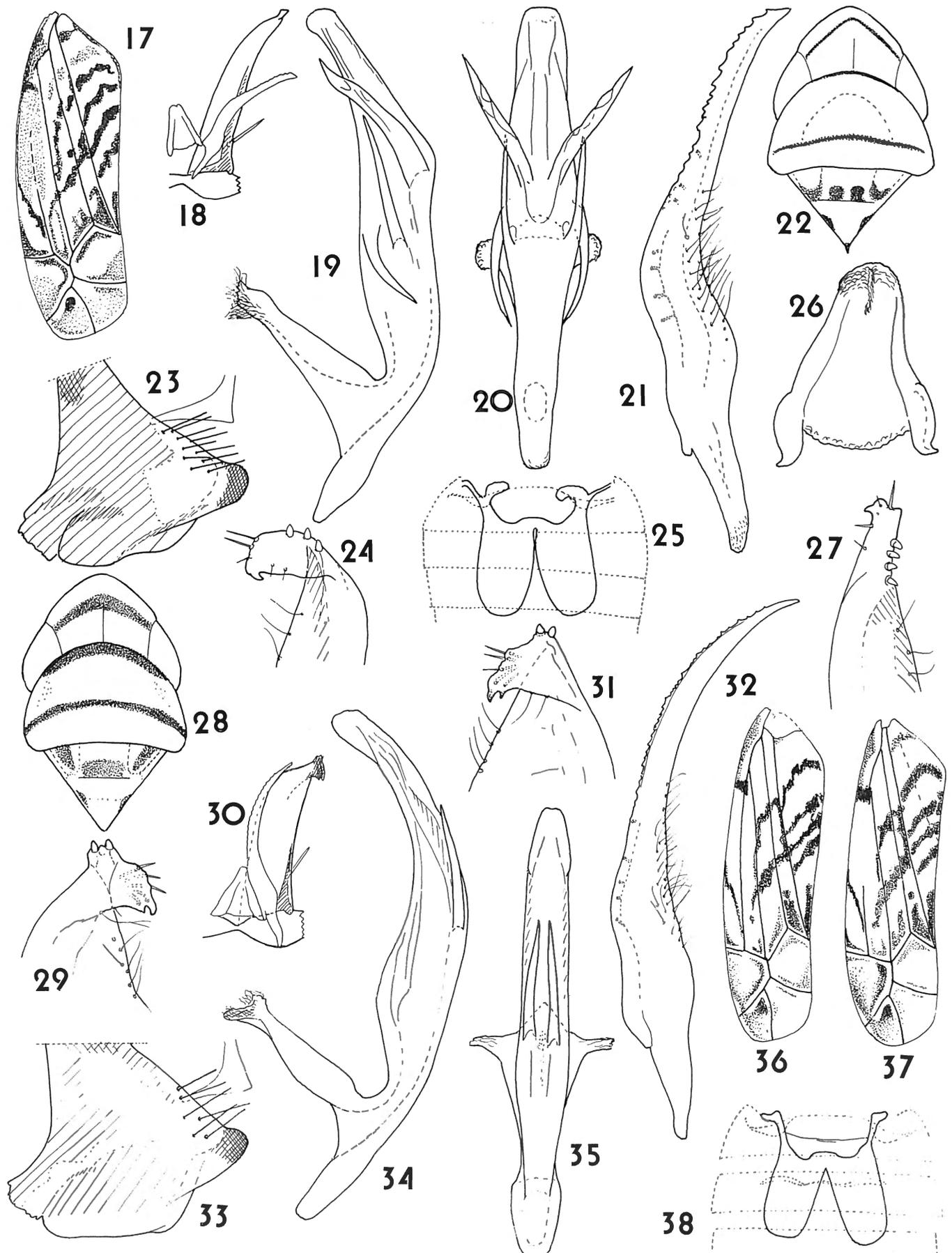
margin basally, brownish wax-field and posterior half of 4th apical cell. Infuscations in apical 1/3 of m and r cells and those in apical cells 1 - 3, brown; those at apex of clavus and at the end of cua cell, in anterior part of 4th apical cell and at the end of c cell, dark brown; those in cua cell and at CuA as well as remaining ones on clavus still darker and the two patches at both ends of wax-field and the one in centre of 3rd apical cell, blackish-brown. Veins in post-nodal part of wing (light in Fig. 1), ochre-yellow. Large areas inside 1st and 4th apical cells and small ones at base of 2nd apical cell and at apices of m and r cells, semitransparent, whitish. Ends of valvae of female broadly infuscated on dorsal side and in hind part. Tergites blackish. Sternites, except 7th that is lighter in female, blackish with hind margins yellowish. Length M 4.0 and 4.1, F 4.4 -4.6 mm. Penis bearing two pairs of lamellate processes, both situated at about upper 2/5 of the stem, the latero-ventral processes directed dorsad and the lateral ones directed ventrad. Subgenital plate with 3 or 4 peg-like setae subapically. There are about 5 macrosetae in upper part of pygofer subterminally. Paramere solid. Male basal abdominal apodemes reaching beyond half of 5th abdominal sternite. Material examined. 1 M, 2 F, Sikkim, Gangtok, N Hwy, 1800 m, 3. III; 1 M, 1 F, Rumtek, 1700 m, lamp domes, 1991, I. DWORAKOWSKA.

***Bolanusoides held* sp.n.**
(Figs. 6 - 16)**Remarks**

In colouration the most characteristic is bright ochre background of upper side of body adorned with broad dark fasciae on vertex and at anterior margin of pronotum and an oval blackish patch and an arcuate dark brown mark costad of it. Vertex of female more produced than in male, colouration seems to be darker, sinuate blackish line at the border of vertex and face complete, central part of face largely infuscated.

Description

Anterior part of vertex (in front of the dark fascia in Fig. 11), ivory. Background of the remaining parts of vertex and upper part of thorax, ochre with blackish-brown pattern. Centre and centre of hind part of pronotum brownish-olive. Distinct, but incomplete in male, undulating transverse blackish line at the border of face and vertex, visible from above at the very margin in midline and by the eyes. Face yellow centrally apicad, sordid yellowish basad (including lorae). Genae whitish, an inverted horse shoe shape brownish mark on frontoclypeus, base of the mark at the level of lorae, a brownish broad transverse patch above lorae expanded laterad under eye in form of a tapering blackish streak.



Figs. 17 - 38 — *Bolanusoides pahlawan* sp.n.: 17 - 27. — 17: male, length 2.70 mm — 26: connective. — *B. bator* sp.n.: 28-38. — 36: male, length 2.75 mm — 37: male, length 2.80 mm.

Fore wing ochre or yellow-ochre. Inner and hind margins of clavus and, broadly, also the claval angle as well as wax-field and adjacent part of costal margin basad, brownish. An oblique narrow fascia starting at distal end of wax-field and an oval patch inside 3rd apical cell, blackish-brown. Other darkenings seen in Figs. 9 and 10 dark brown on clavus and at Sc+RA vein at costal margin and brown on the remaining surface (quite light inside 3rd and, partly, 4th apical cell). Semitransparent white areas at the end of r cell and (a minute one, like a slit) in m cell subterminally as well as at bases of 1st, 2nd and 4th apical cells and, very small, apicad of blackish-brown patch inside 3rd apical cell. Apical margin at 2nd and 3rd apical cells whitish, part of it (at the end of RP) ochreous, costal margin at 4th apical cell ochre. Wax-field sometimes covered with bluish wax. Tips of valvae and dorsal part of pygofer infuscated. Length M 3.40 - 3.80; F 3.40 - 4.15 mm. (Wing M 2.90, F 2.55, 2.80, 3.20 and 3.30 mm).

Penis bearing two pairs of thin, almost straight processes, the lateral situated at about 1/3 from apex and the ventral one at about half of length of the stem, both directed dorsad (Figs. 6, 7). Subgenital plate with two peg-like setae subapically and a small pigmented hooked apex (Figs. 13, 14). The macrosetae on pygofer situated in its upper part (a few) subterminally and (less) in its lower part subbasally (Fig. 12). Paramere solid (Figs. 8, 15). Holotype male and paratypes 2 M, Papua New Guinea, Wau, 1250 m, 10 - 20. XI. 1972, J. v.d. VECHT. Other Paratypes: 1 M, Papua New Guinea, Wau St., 26. V; 1 M same locality, 23. V, both collected by P. GROOTAERT in 1982; 2 F, New Guinea SE, Moroka, 1300m, VII - XI. 1983, S.E. Loria; 1 F, New Guinea, Madang Distr., Finisterre Mts., Damanti [1065 m], 2 - 11. X. 1964, M.E. Bacchus; 1 F, Irian Jaya, Cyclops Mts., Mt. Lina, [1050 m], III, 1936, L.E. CHEESMAN. (ITZ, IRSN, MCSN, BMNH).

***Bolanusoides pahlawan* sp.n.**
(Figs. 17 - 27)

Remarks

In colouration characteristic is rich brown pattern on ochreous background of fore wing supplemented with an additional fascia on clavus (other species have 5 fasciae at most).

Description

Vertex and upper side of thorax light testaceous. Face sordid whitish at sides, infuscated centrally, blackish patches below bases of antennae. A narrow brown undulate line at the border of face and vertex visible centrally in dorsal view. A narrow fascia parallel to anterior margin of vertex and other dark marks visible in Fig. 22, blackish-brown. Very tip of scutellum blackish. Fore wing

broad, whitish at base, at apex of clavus, apices of longitudinal cells and bases of apical cells, and irregularly light ochre on remaining surface. Inner margin of clavus and claval angle as well as some stretch of margin near apex bordered with dark brown. Posterior margin of clavus, posterior parts of CuP, CuA and M, transverse veins, apical CuA', M and RP, ochre. The dark pattern seen in Fig. 17 dark brown in apical 3/4 of clavus, in cua and m centrally, at apex of c cell and inside 4th apical cell mesad. Patches at both ends of wax-field and the one inside 3rd apical cell, blackish-brown. Other darkened areas brown to brownish. Apical margin of wing inside 2nd and 3rd apical cells broadly whitish. Wax-field and an additional subbasal oblique fascia on clavus, continued on corium, brownish, as most of the areas in 2-4 apical cells. Length M 3.4 and 3.5 mm, fore wing 2.70 mm.

Penis bearing three pairs of very different processes (Figs. 19, 20). The latero-ventral processes, large and deeply furrowed, situated at 1/3 from apex are directed dorso-cephalad and the lateral and latero-dorsal ones situated at about midlength of the stem are much smaller and smooth, former directed apicad and the latter curved ventro-basad. Subgenital plate with 2 - 4 peg-like setae subapically (Figs. 24, 27). Big group of macrosetae in upper part of pygofer subterminally (Fig. 23). Paramere quite solid (Fig. 21). Male basal abdominal apodemes reaching caudal margin of 5th abdominal sternite (Fig. 25).

Holotype male and paratype M, W Malaysia, W Pahang, Genting Tea Estate, [600 m], XI, 1981, TUCK and BARLOW. (BMNH).

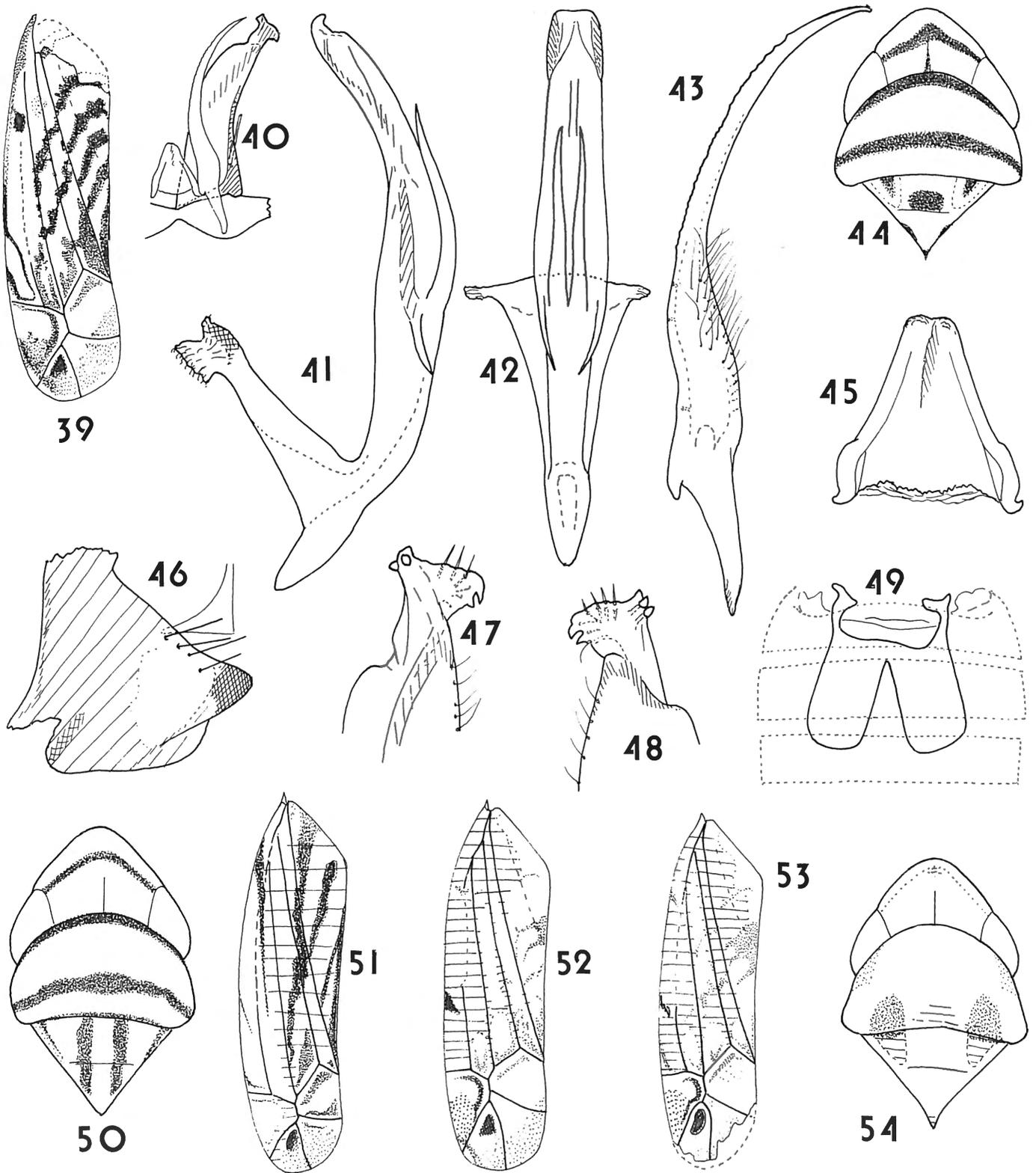
***Bolanusoides bator* sp.n.**
(Figs. 28 - 38)

Remarks

In colouration characteristic of this species is grouping of the three oblique fasciae on clavus that became distinctly apart of the 4th one.

Description

Background of colouration of head and thorax testaceous (the specimens were processed from fluid into dry condition). Face pale. The dark pattern seen in Fig 28, brown of various shades. The fascia at hind margin of pronotum blackish-brown, the one on vertex the broadest in the midline and the lightest of all. Colouration of scutum and scutellum variable. In some specimens the central patch consists of two smaller roundish patches partially fused and the infuscation of basal triangles might be expanded mesad. Anterior half of scutellum and adjoining part of scutum chalk white in most of specimens. Part of pronotum caudad of the subterminal fascia often milky grey. Fore wing whitish with brown pattern as in Figs. 36, 37.



Figs. 39 - 54 — *Bolanusoides yinxiong* sp.n.: 39 - 49. — 39: male, length 2.50 mm (Fig. 44 shows misshaped structure). — *B. meekoa* sp.n., female: 50, 51 (length of fore wing 2.85 mm). — *B. bir* sp.n., females: 52 - 54 — 52 and 53: length 3.1 and 3.2 mm.

The patch at proximal end of wax-field, a streak originating at its distal end and a patch in centre of 3rd apical cell, dark brown to blackish-brown. Length M 3.30 - 3.60 mm, fore wing 2.75 and 2.80 mm.

Penis bearing one pair of thin, straight, ventral appendages situated at about midlength of the stem, directed apicad (Figs. 34, 35). Subgenital plate with two peg-like setae subapically (Figs. 29, 31). About 5 macrosetae in upper part of pygofer subterminally (Fig. 33). Paramere (Figs. 30, 32) medium, tapering in apical 1/3. Male basal abdominal apodemes comparatively short and narrow (Fig. 38).

Holotype male and paratypes 9 M, W Malaysia, W Pahang, Genting Tea Estate, [600 m], XI. 1981, TUCK and BARLOW. (BMNH, IRSN).

***Bolanusoides yinxiong* sp.n.**
(Figs. 39 - 49)

Remarks

Only one specimen of *B. yinxiong* sp.n. was found in the sample containing the series of *B. bator* sp.n. There is no particular character in colouration allowing to recognize this species at the first sight but it can be distinguished from quite similar *B. bator* sp.n. by posterior fascia on pronotum broader, presence of an undulating line on the border of face and vertex, blackish very tip of scutellum, light yellowish-ochre background of fore wing and the four (more apical) fasciae on clavus more or less equally distant from each other. Despite of deformation caused by drying, the single specimen seems to be more robust than the previous species and it is distinctly darker with some details of the pattern different.

Description

Vertex whitish, slightly infuscated (? ochre-yellowish) at apex. Part of pronotum between transverse fasciae light ochre-yellow, behind the posterior fascia, milky grey. Scutum and scutellum sordid whitish. The dark pattern seen in Fig. 44 blackish-brown. Face testaceous. Faint undulate line at the border of vertex and face (in dorsal view visible only in the centre) light brown centrally, dark brown at sides. Fore wing whitish on clavus, in apical cells and in cua cell, slightly yellowish-ochre in c, r and m except bases and apices of these cells and in apical part of 4th apical cell. Pattern seen in Fig. 39 dark brown on clavus, at base and apex of c cell and mesad inside 4th apical cell. Patches at both ends of wax-field and the one at base of 3rd apical cell blackish-brown, remaining patches brown and these in apical cells brown to light greyish-brown. Veins seem to be slightly ochre. Length M 3.30 mm, fore wing 2.50 mm.

Penis bearing two pairs of only slightly curved, thin pro-

cesses, both situated slightly basad of the midlength of the stem. The ventral processes directed apicad, the lateral ones (several times shorter than the previous) pointed ventrad (Figs. 41, 42). Subgenital plate with 2 very short peg-like setae (often concealed amid protruding setting) (Figs. 47, 48). There are a few macrosetae in upper part of pygofer subterminally (Fig. 46). Paramere slim (Figs. 40, 43). Male basal abdominal apodemes (Fig. 49) as in the previous species.

Holotype male, W Malaysia, W Pahang, Genting Tea Estate, [600 m], XI. 1981, TUCK and BARLOW. (BMNH).

***Bolanusoides meekoa* sp.n.**
(Figs. 50, 51)

Remarks

In colouration of this species characteristic are dark longitudinal streaks on scutum and scutellum.

Description

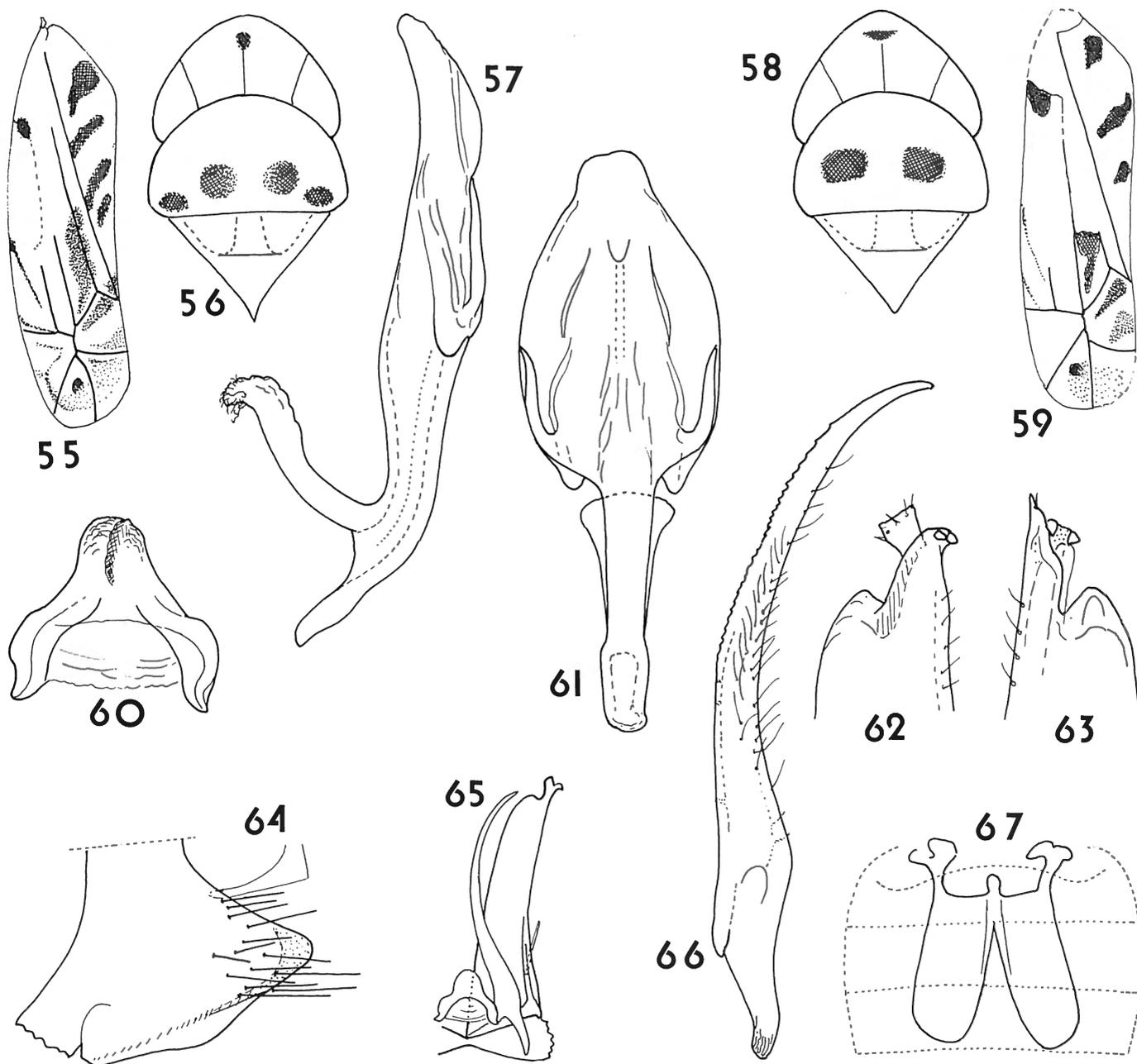
Upper side of head and thorax yellowish-white. Centre of vertex behind the transverse fascia, centre and hind margin of pronotum centrally as well as scutum and scutellum light ochre-yellow. The dark pattern seen in Fig. 50, blackish-brown on pronotum and dark brown on the remaining surface. The lateral patch at basal triangle confluent with the central dark brown stripe on fore wing. Fore wing light yellow on clavus (except its base at claval furrow) and cua, m, and mesally, r cells, at very costal margin and on the broad patch lining 4th apical cell mesad (transversely stripped in Fig. 51). Remaining surface semitransparent, whitish. The dark pattern seen in Fig. 51 dark brown, the oval patch inside 3rd apical cell blackish-brown and the patches at apex smoky. Hind wing slightly smoky, veins brownish. Body light yellowish, centres of abdominal tergites infuscated, apex of valva blackish. Length F 4.00 mm, fore wing 2.85 mm.

Holotype female, Philippines, Luzon, Albay Prov., Guinobatan, IX. 1976, light trap, no collector. (BMNH).

***Bolanusoides bir* sp.n.**
(Figs. 52 - 54)

Remarks

In colouration of this species the most characteristic is bright red background and very light (as if fading) infuscated transversae fasciae on fore wing, slightly more distinct on clavus.



Figs 55 - 67 — *Bolanusoides bohater* Dwor., male: 55, 56 (length of fore wing 2.55 mm). — *B. gieroy* sp.n., male: 57-67. — 58: reconstruction (length of fore wing 2.50 mm, the wing damaged).

Description

Anterior part of vertex ivory, remaining part ochre-yellow to light vermilion-red. Pronotum from ochre-yellowish (in not fully coloured specimens) to vermilion-red with a delicate brownish suffusing at anterior margin behind eyes. Scutum and scutellum of the same colour as pronotum. The only darkenings are blackish the very bases of basal triangles and adjacent part of centre of scutum,

in one specimen the whole scutum seems to be tan and in another the blackish colouration extends from bases of the basal triangles cephalad (Fig. 54). Face pale yellowish, upper part of frontoclypeus darker. In the only fully coloured specimen there is a large brownish infuscation centrally above anteclypeus. Fore wing reddish or ochreous-red on most of its surface (transversely striped in Figs. 52, 53). Longitudinal veins in their distal 1/3, transverse veins, costal and commissural margins of apical

part of wing and more than half of each of apical veins basally, reddish. Patch at the distal end of the wax-field and the one in proximal half of 3rd apical cell, blackish-brown. Mesal lining of the 4th apical cell brown, other dark patches seen in Figs. 52 and 53, faintly brown. Areas at apices of cua, m and r cells and, basally, in 1st, 2nd and 4th apical cells semitransparent, whitish. In all three specimens areas at inner margin of clavus, at claval angle and in the midlength of m cell also whitish. Valva yellow, its tip brownish. Length F 4.0 - 4.1 mm, fore wing 3.1 and 3.2 mm.

Holotype female and paratype F, Sikkim, Gangtok, N H-wy, 1800 m, 3. III. 1991, I. Dworakowska. Other paratype: 1 F, Sikkim, Rumtek, 1700 m, lamp domes, 1990 (collected by me in March, 1991). (SMTD, IRSN).

***Bolanusoides bohater* DWORAKOWSKA, 1988**
(Figs. 55, 56)

Remarks

In colouration the most characteristic is presence of at least three fasciae in distal part of clavus. The type-series from New Guinea, SE of Moroka, 1300 m (DWORAKOWSKA, 1988 p. 5) is deposited in MCSN.

Description

Face and anterior margin of vertex yellowish-white. Upper side of thorax yellowish to ochre. Fore wing yellow. The pattern of blackish patches seen in Figs. 55 and 56 variable concerning with size (DWORAKOWSKA, 1988, p. 5). Length M 3.40 and 3.50 mm, F 4.10 mm, fore wing M 2.55, F 3.00 mm.

The tubular (basal) part of penis stem 4 times shorter than the flattened (apical) part. The apical part elongated cordiform in posterior view. Paired processes situated near midline distinctly apical of lower border of the flattening, gonopore near narrow apex. Extension of subgenital plate apex beyond two peg-like setae very small. There are about 10 macrosetae across terminal part of pygofer subterminally. Paramere slim. Male basal abdominal apodemes almost reaching end of 5th abdominal sternite.

***Bolanusoides gieroy* sp.n.**
(Figs. 57 - 67)

Remarks

The single exemplar available for examination has been air dried from the preserving fluid and became misshaped. The illustration (Fig. 58) shows reconstruc-

tion based on what is observable rather than the real specimen. In fore wing basal part of corium and most of cua and m cells missing. External characters of the single specimen do not allow to indicate distinguishing features of the species.

Description

Background of head and thorax probably whitish (at present it is mostly grey). One small semilunar patch near anterior margin of vertex centrally and two rather large angulate patches in hind half of pronotum at sides, blackish-brown.

The wing seems to be similar to that of *B. bohater*, only lighter in apical cells and with fewer dark patches on clavus (Fig. 59). The background of fore wing seems to be yellowish-white. Costal margin slightly infuscated. Two delicate oblique brownish streaks in apical part of c cell. Patches inside 1st apical cell and m cell brown, these more basad in Fig. 59, blackish-brown. A small brown patch inside 3rd apical cell adjacent to brownish infuscation. Length M 3.3 mm, fore wing 2.5 mm.

The tubular (basal) part of penis only slightly shorter than the flattened (apical) part. The apical part short cordiform in posterior view. Paired processes situated at angles of the „cor” and in their further run follow edges of the broadened part of penis, gonopore shifted basad of the truncate apex (Figs. 57, 61). There is a considerable extension of the subgenital plate apex beyond a „step” bearing two peg-like setae (Figs. 62, 63). There are about 15 macrosetae across terminal part of pygofer subterminally (Fig. 64). Paramere slim (Fig. 66). Male basal abdominal apodemes reaching end of 5th abdominal sternite (Fig. 67).

Holotype male, W Malaysia, W Pahang, Genting Tea Estate, [600 m], XI. 1981, TUCK and BARLOW. (BMNH).

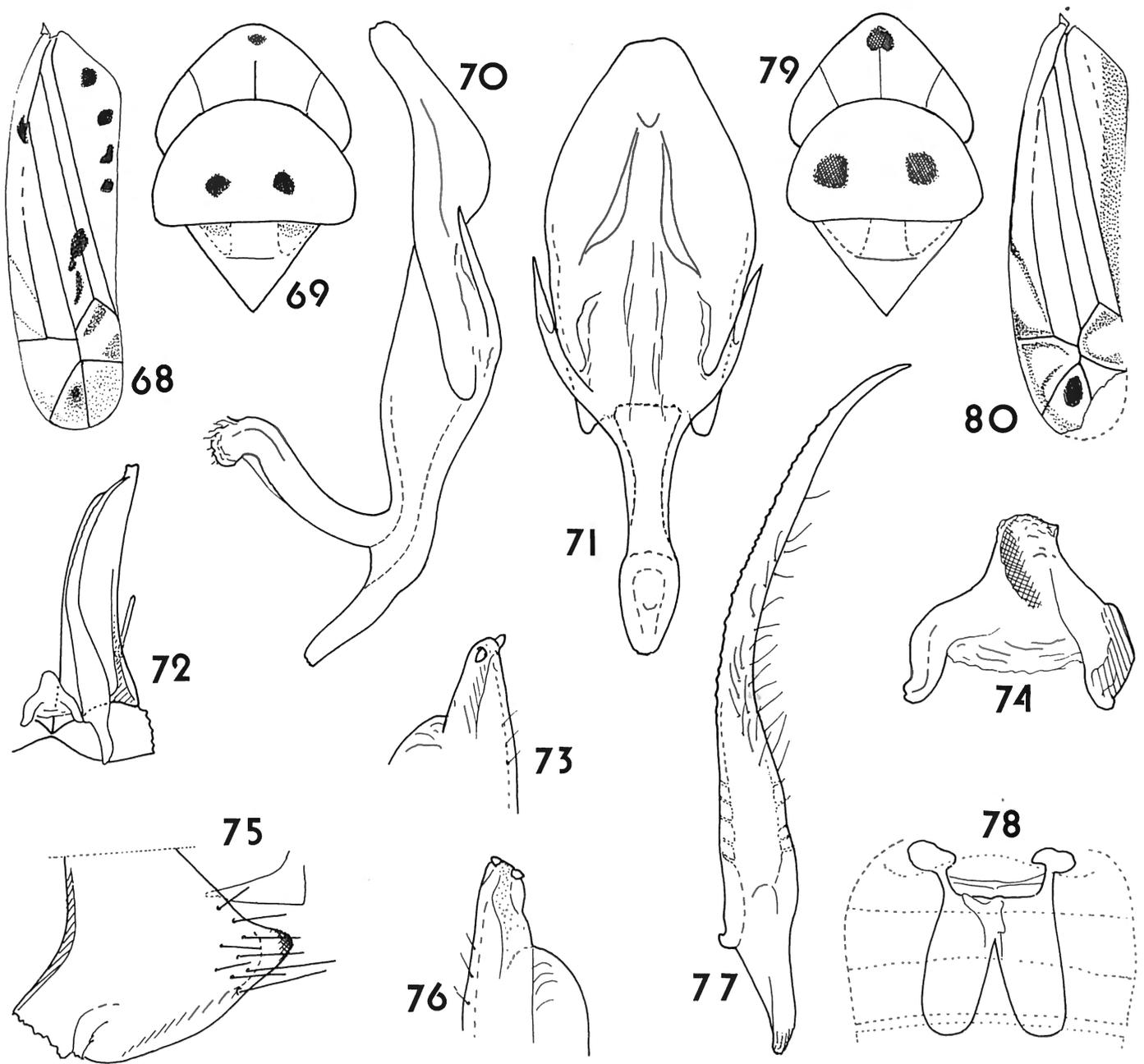
***Bolanusoides sankari* sp.n.**
(Figs. 68 - 78)

Remarks

External characters of the single specimen do not allow to indicate distinguishing features of the species.

Description

Head, scutum and scutellum whitish, pronotum slightly yellowish in anterior part, distinctly yellow at hind margin. The patches on vertex and pronotum seen in Fig. 69, dark brown. Basal triangles slightly infuscated anteriorly. Fore wing light yellowish with blackish-brown patches on clavus, in apical parts of cua and m cells and at the proximal end of wax-field. The patch inside 3rd



Figs. 68 - 80 - *Bolanusoides sankari* sp.n., male: 68 - 78 (length of fore wing 2.0 mm). - *B. tuahangata* sp.n., female. - 79: reconstruction - 80: length 3.15 mm.

apical cell brown, as is the one at the base of 1st apical cell. A patch in distal end of 1st apical cell, broad infuscation in 2nd and 3rd apical cells terminally and along margin at antero-lateral angle of fore wing (Fig. 68), brownish. Length M 2.8 mm, fore wing 2.0 mm. The tubular (basal) part of penis stem half that long as the flattened (apical) part. The apical part almost oval in posterior view. Paired processes situated in basal part of broadening and in their further run follow edges, exten-

ding laterad terminally, gonopore shifted basad of the truncate apex (Figs. 70, 71). The two peg-like setae situated almost on apex of the terminal extension of the subgenital plate (Figs. 73, 76). Nearly 10 macrosetae across terminal part of pygofer subterminally (Fig. 75). Paramere slim (Figs. 72, 77). Male basal abdominal apodemes exceeding end of 5th abdominal sternite (Fig. 78). Holotype male, Philippines, Luzon, Albay Prov., Guinobatan, VIII - X, 1980, B. ZELAZNY. (BMNH).

***Bolanusoides tuahangata* sp.n.**
(Figs. 79, 80)

Remarks

The single female specimen is in poor condition because it has been air dried from preserving fluid, the Fig. 79 shows rather reconstructed shape than the real proportions in the specimen. In the external appearance the most characteristic is a broad, light brown streak along commissural margin of clavus.

Description

Upper side of thorax and head whitish. One large patch in midline near top of vertex and two patches at sides of pronotum, dark brown. Fore wing whitish, hardly semitransparent with light brown pattern as in Fig. 80, except the large regularly oval, dark brown patch inside 3rd apical cell. Ovipositor light brown, apex of valva (especially at its ventral margin) contrastly blackish. Body beneath and dorsum of abdomen, tan. Length F 3.90 mm, fore wing 3.15 mm.

Holotype, female, Papua New Guinea, Madang, Laing I., UV, VI. 1979, J. VAN GOETHEM. (IRSN).

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