

The Pentastirini of New Guinea, a review and descriptions of five new species (Homoptera, Cixiidae)

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Summary

The three species known from New Guinea and Mysol are redescribed: *Oliarus inficitus* (WALKER, 1868), *O. reductus* (WALKER, 1868) and *O. intertectus* (WALKER, 1868). For each of these species a lectotype is selected. *Oliarus inficitus* (WALKER, 1868) is a new combination for *Cixius inficitus*. Five new species are described and illustrated: *Oliarus busoensis* sp. n., *O. undabundus* sp. n., *O. morobensis* sp. n., *O. niuginiensis* sp. n., and *O. ramiferens* sp. n.; a key to all species is given.

Keywords: Cixiidae, Taxonomy, New Guinea.

Résumé

Ce travail donne une nouvelle description des trois espèces déjà connues de Nouvelle Guinée et Mysol: *Oliarus inficitus* (WALKER, 1868), *O. reductus* (WALKER, 1868) et *O. intertectus* (WALKER, 1868). Pour chaque espèce, un lectotype est sélectionné. *Oliarus inficitus* (WALKER, 1868) est une nouvelle combinaison pour *Cixius inficitus*. Cinq nouvelles espèces sont décrites et illustrées: *Oliarus busoensis* sp. n., *O. undabundus* sp. n., *O. morobensis* sp. n., *O. niuginiensis* sp. n., et *O. ramiferens* sp. n. Une clé de détermination est élaborée pour toutes les espèces.

Mots-clés: Cixiidae, Taxonomie, Nouvelle Guinée.

Introduction

This paper deals with all Pentastirini which are so far known from New Guinea and from the adjacent island Mysol. It is based on specimens which I have collected myself in Papua in April and May 1988 completed with additional material of various museums listed below. Although it might be convenient to treat all species here from the Melanesian Arc system, I have not done so for more practical reasons. The aim of this paper is to present a more "faunistic" survey of the New Guinea continent with the species which occur in this region. Except of *Oliarus reductus* all treated taxa are endemic in New Guinea. The island Mysol is treated here because it is the type locality of *O. inficitus* which might also occur on the continent, or even be synonymous with *O. intertectus*.

The first collections of Pentastirini in New Guinea were made by Dr A.R. Wallace during his journey in the Indo-

Malayan Archipelago between 1854 and 1862; these were subsequently described by F. Walker (1868) as *Cixius inficitus* (Mysol), *Cixius reductus* (Mysol), and *Brixia intertecta* (New Guinea). No other species have been described since. Walker's publication "Catalogue of the Homopterous insects collected in the Indian archipelago by Mr. A.R. Wallace, with descriptions of new species" was in fact published in 1868 and not in 1870 as commonly referred to and marked on the publication itself.

Among the species occurring in New Guinea three pairs of related taxa can be recognized: first *Oliarus busoensis* and *Oliarus undabundus*: species from 8 to 10 mm, with a narrow vertex bearing a subapical keel which is forking on about halfway the distance of the base and with tegmina where Sc+R is forking at the same level as Cu. The male genitalia are characterized by the absence of an apical process on the apex of the anal segment and by the presence on the aedeagus of a ventral process which is directed caudad.

The second pair is *O. reductus* and *O. ramiferens*. The vertex is relatively flat and bears a median longitudinal keel. On the tegmina Sc+R is forking distad of Cu; the apical cells are shorter than those of the next group. This group is clearly related to the oriental fauna.

O. reductus and *O. ramiferens* make probably part of a large group which is widespread over the archipelago, with relatives in Malaya, Borneo and the Philippines to northern Australia and New Calidonia. *O. reductus* has also been collected in Borneo and the Philippine Islands and is probably a widespread species. The relation of *O. busoensis* and *O. undabundus* to this group remains uncertain. They all represent a characteristic ventral spinose process on the aedeagus, but it is not clear if this process can be considered as homologous in all species.

The third pair is *O. inficitus* and *O. intertectus*; they have a face with very sharp, almost foliaceous keels and uniformly coloured with yellowish brown. The vertex is narrow and deeply excavated, and the mesonotum has only three distinct keels while the two submedian ones are very obsolete. On the tegmina Sc+R is forking at the same level as Cu and the apical cells are long.

O. morobensis has no direct relatives on New Guinea but it is clearly related to *O. laratensis* MUIR, 1924. With the

two preceding species each pair might represent a melanesian group although much work needs to be done to assess the relationships between the Pentastirine species of the Indo-Malayan Archipelago.

The number of specimens studied here is rather small but it is striking that the various collections made by different institutions at different times and places have several species in common. This might indicate that the Pentastirine fauna of this region is less rich as compared to parts of the oriental region and as compared to several other homopterous groups in New Guinea where an active speciation has taken place. This can not be demonstrated for the Pentastirini.

Depositories

KBIN	Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel, Belgium.
ML	Museum voor Natuurlijke Historie, Leiden, Nederland.
BMNH	British Museum (Natural History), London, U.K.
CAS	California Academy of Sciences, San Francisco, U.S.A.
ITZ	Instituut voor Taxonomische Zoölogie, Amsterdam, Nederland.

A key to the species of New Guinea

Oliarus inficitus is only known from a single male with the hind tarsi lacking; this character has to be treated with caution where it concerns this species; it comes close to *Oliarus intertectus* and might have the same chaetotaxy of 6/6. The point of forking of Sc+R in comparison to Cu might be variable, but this variation has only been observed in *O. busoensis*.

1. - Vertex with subapical transverse keel straight or nearly so, but not U-shaped (fig. 7) 2
 - Vertex with subapical transverse keel U-shaped (fig. 26) 3
2. - Chaetotaxy of hind tarsi 7/7, on tegmina Sc+R forking basad of Cu (fig. 17)
 - *O. niuginiensis* sp. n.
 - Chaetotaxy of hind tarsi 8/8 or 8/7, on tegmina Sc+R forking distad of Cu (fig. 1) *O. morobensis* sp. n.
3. - Sc+R forking at about the same level as Cu-fork (fig. 32) 4
 - Sc+R forking distinctly anterior (fig. 17) or posterior (fig. 1) of Cu-fork 7
4. - Apical medial cell (between main stem and most apical branch) twice to four times as long as broad (fig. 1); chaetotaxy hind tarsi 7/5; mesonotum with five distinct longitudinal keel 5

- Apical medial cell five or more times as long as broad (fig. 60); chaetotaxy 6/6 (unknown in *inficitus*); mesonotum with the two submedian keels very weakly developed 6
- 5. - Right lateral margin of pygofer with two lobes separated by an excavation (fig. 21)
 - *O. busoensis* sp. n.
 - Right lateral margin of pygofer with one single lobe, not excavated (fig. 27)
 - *O. undabundus* sp. n.
- 6. - Size 10 mm; tegmina brown fumated on transverse veins (fig. 60); chaetotaxy hind tarsi 6/6; female genitalia as illustrated in fig. 62 & 63 (only known from female lectotype)
 - *O. intertectus* (WALKER, 1868)
 - Size 7.5 mm; tegmina not brown fumated on transverse veins; chaetotaxy hind tarsi unknown; male genitalia as illustrated in fig. 53 to 58 (only known from male lectotype)
 - *O. inficitus* (WALKER, 1868)
- 7. - Sc+R forking based of Cu (fig. 17)
 - *O. busoensis* sp. n.
 - Sc+R forking distad of Cu (fig. 1) 8
- 8. - Male 9
 - Female 10
- 9. - Pygofer with a spine on left margin (fig. 45); total length 7.5 to 7.9 mm *O. ramiferens* sp. n.
 - Pygofer without a spine on left margin (fig. 37); total length 5.5 mm
 - *O. reductus* (WALKER, 1868)
- 10. - Pregenital sternite with a median incision forming a semi-circle which is bordered by two submedian processes (fig. 42); total length 7 mm *O. reductus* (WALKER, 1868)
 - Pregenital sternite without such an incision and processes but only slightly undulate in middle (fig. 51); total length 9-9.7 mm
 - *O. ramiferens* sp. n.

Oliarus morobensis sp. n.

(figs. 1-9)

Material :

Holotype ♂, Papua New Guinea, Morobe prov., Bulolo, 20.V.1988, KBIN.

Paratypes : 2 ♂♂, 1 ♀, same data; 1 ♂, same loc., 18.V.1988, KBIN; 1 ♂, 1 ♀, Port Moresby, 1 & 2.IV.1987, N.D. Penny, CAS; 3 ♂♂, 1 ♀, Papua New Guinea, Central Province, Laloki Quarantine Station, 23.VI.1983, "collected from pawpaw trunk and fruits", BMNH; 2 ♂♂, 1 ♀, Papua New Guinea, Central Prov., Laloki D.P.I., 24.X.1980, "ex *L. pomoea*", "batatas", BMNH.

Description :

Frons, postclypeus and anteclypeus black, keels broadly coloured with yellow. Two large white maculae present on each side of face at level of frontoclypeal suture; labium yellowish with a black terminal segment. Vertex (fig. 7)

1.8 as long as broad, transverse keel situated close to anterior border (1:0.9), and connected with apex by two short keels which are united to one broad keel-shaped structure; lateral margins of vertex elevated. Pronotum yellow, fumated with black on lateral margin. Mesonotum black with concolorous keels, or with two yellow longitudinal fasciae on each side between the two outer keels. Tegmina (fig. 1) hyaline, 3.2 times as long as broad, costal margin straight, pale stramineous and without granules, Sc+R forking distad of Cu; proximal veins (between base and level of stigma) yellow or partly brown, apical veins black; transverse veins black fumated. Coxae and femora black fumated, tibiae and tarsi yellow, last segment of hind tarsi black, chaetotaxy 8/8, 8/7 on one leg in one specimen, on second tarsomere placed in a regular row, on third one placed in a semicircle. Length ♂ : 7.3-8 mm, ♀ : 8-8.3 mm.

Male genitalia (figs. 2-7) : anal segment and pygofer symmetrical. Anal segment without an apical lobe. Pygofer on each side with a large triangular lobe. Genital styles asymmetrical, with a spinose process on inner side of apex, right one longer and more curved than left one. Aedeagus with three spines : two on ventral margin, one directed caudad and one directed ventrad, and a third curved spine on left lateral margin pointing caudad.

Female genitalia (figs. 8 & 9) : pregenital sternite with a large median lobe. First pair of valvulae gently narrowing from base to apex, ovipositor in lateral view not extending behind level of apex of anal segment. The latter diamond-shaped, as broad as pygofer, with caudal margin slightly excavate.

Diagnosis :

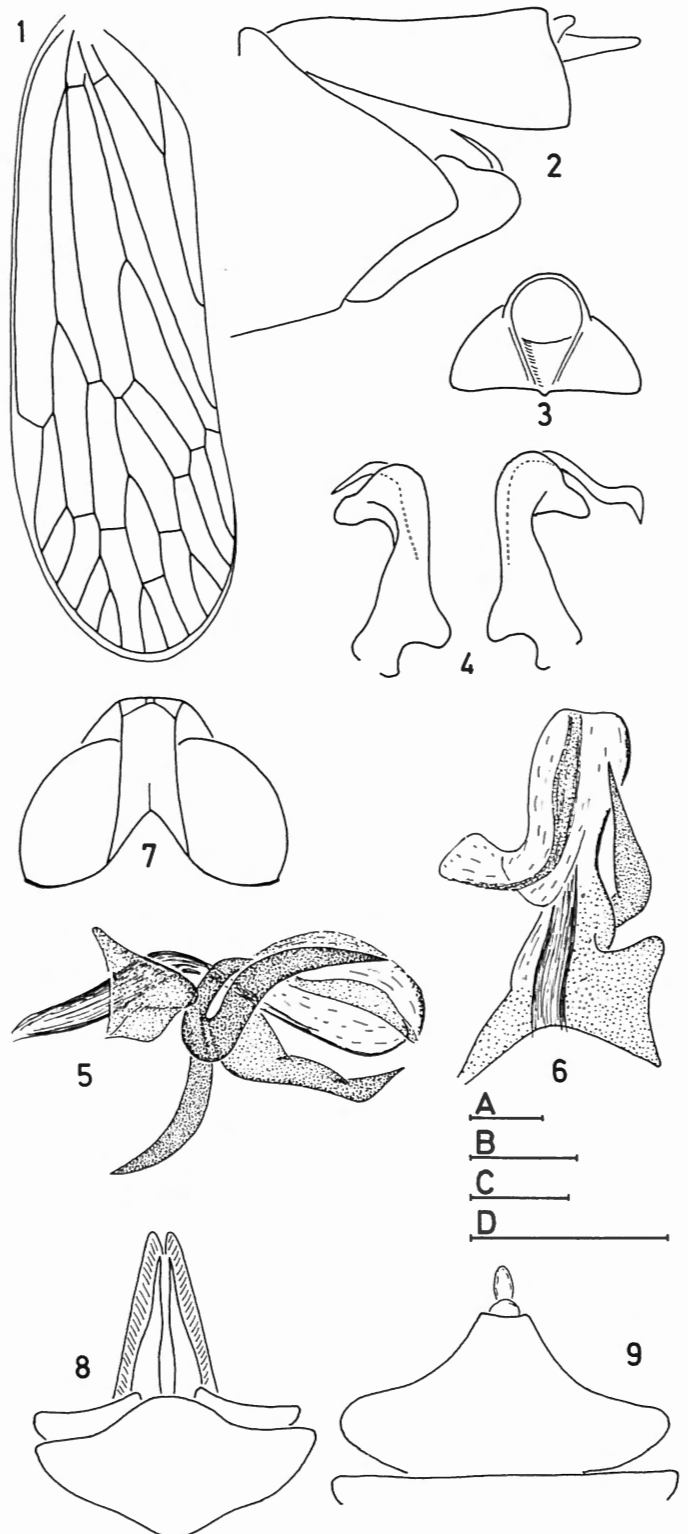
This new species is related to *Oliarus laratensis* MUIR, 1924. The most striking differences in the external morphology are the colour of the face which is yellow in *laratensis* and black in *morobensis*, and the chaetotaxy of the hind tarsi which is 9/10 or 9/9 in *O. laratensis* and 8/8 or 8/7 in *O. morobensis*. The shape of the male genitalia differs in the structure of the spines on the aedeagus which are thinner in *O. laratensis* and in the structure of the spines on the aedeagus; the ventral spine is much broader in *O. laratensis* and the lateral spine is typically curved in *O. morobensis*. From all New Guinean species it can be distinguished by the presence of long spines on the apices of the genital styles; these spines are much smaller in *O. niuginiensis* and absent in all remaining species.

Oliarus niuginiensis sp. n. (figs. 10-19)

Material :

Holotype : ♂, PNG, Madang Prov., Sepen Village n° 2, 10.VI.1988, KBIN.

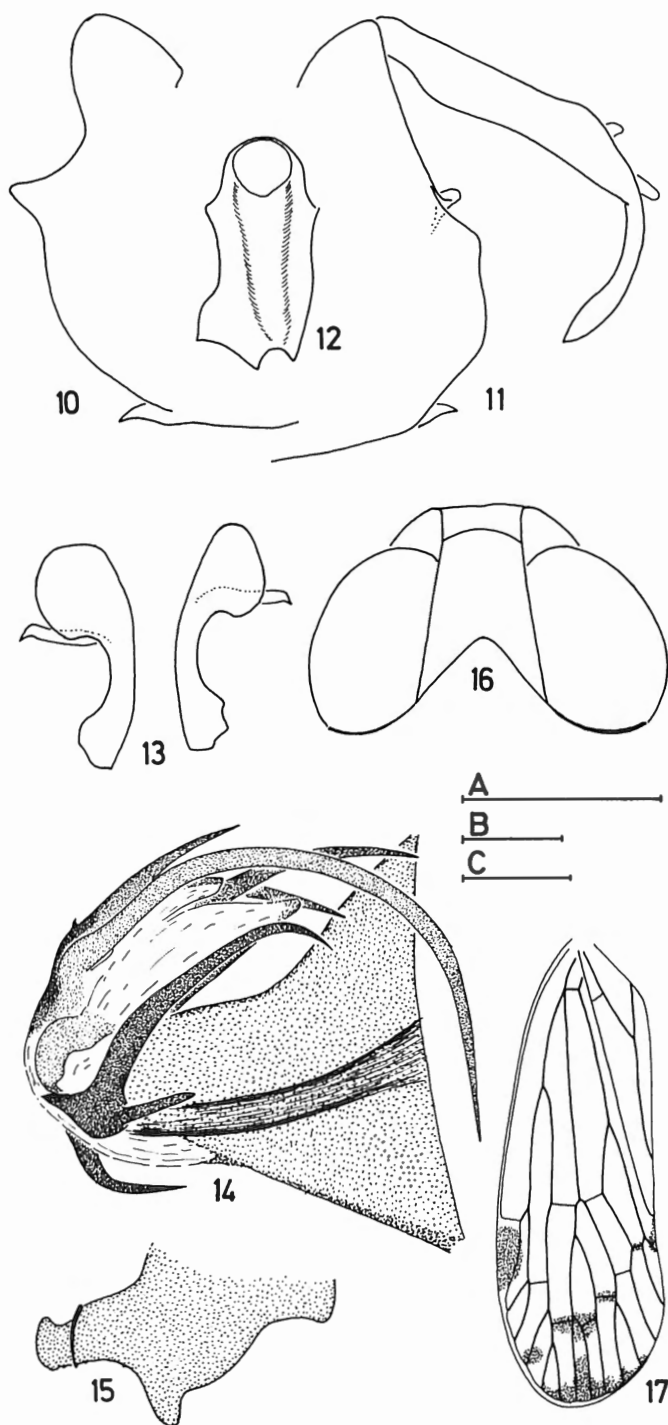
Paratypes : 1 ♀, PNG, Madang Pr., Mt Hanseman (nr. Madang), 14.VI.1988, KBIN; 1 ♂, 5 ♀♀, PNG, Madang P., Baiteta (12 km NW Alexishafen), 5°00'S 145°45'E, 17.XI.1987, leg. M. Wasbauer, CAS; 3 ♀♀, PNG, Madang



Figs. 1-7. - *Oliarus morobensis* sp. n., holotype - 1 : left tegmen; 2 : anal segment, pygofer and genital style, left lateral view; 3 : anal segment, caudal view; 4 : genital styles; 5 : aedeagus, dorsal view; 6 : aedeagus, left lateral view; 7 : head.

Figs. 8-9. - *Oliarus morobensis* sp. n., ♀ - 8 : pregenital sternite, valvifers and ovipositor, ventral view, the second pair of valvulae is not figured; 9 : pygofer and anal segment.

Scale : A (0.2 mm) : 2, 3, 4; B (0.2 mm) : 5, 6; C (1 mm) : 1; D (1 mm) : 7, 8, 9.



Figs. 10-17. – *Oliarus niuginiensis* sp. n., holotype – 10 : pygofer, right lateral view; 11 : anal segment and pygofer, left lateral view; 12 : anal segment, caudal view; 13 : genital styles; 14 : aedeagus, dorsal view; 15 : ventral process of aedeagus, lateral view; 16 : head; 17 : left tegmen.
Scale : A (1 mm) : 10-13, 16; B (2 mm) : 17; C (0.2 mm) : 14, 15.

P., Tapo Creek (26 km SE Madang), 5°24'S 145°08'E, 21.II.1987, N. D. Penny, CAS; 1 ♂, 1 ♀, PNG, Madang P., Sapi Forest Res., 30 km W Madang, 5°12'S 145°30'E, light trap, 20.III.1987, N. D. Penny, CAS; 4 ♀♀, PNG, Nobonob Hill (7 km NW Madang), 5°10'S 145°45'E, 19.III.1987, N. D. Penny, CAS; 1 ♀, PNG, Madang Prov., km S Hatzfeldhaven, 4°25'S 145°13'E, 19.III.1987, Malaise trap, N. D. Penny, CAS; 2 ♀♀, Dutch N, Maffin Bay, 27.VIII.1944 & 30.VI.1944, E. S. Ross, BMNH.

Description :

Face brown, with two large white maculae on frontoclypeal suture; keels sharp, yellowish, labium yellow, embrowned apically. Vertex (fig. 16) 1.2 times as long as broad, brown, with prominent yellow keels; transverse keel branching from lateral margin close to apex, at 0.8 distance from base and straight, not connected with the anterior border. Pronotum yellow with a black spot on sides. Mesonotum black with concolorous keels, with two paler fasciae between outer keels. Tegmina (fig. 17) hyaline, three times as long as broad, all veins and stigma black, except anterior border of stigma which is yellow. Apical border of tegmina and transverse veins brown fumated, Sc+R forking basad of Cu, costal margin bent, without granules; veins covered with small and concolorous granules. Legs yellowish brown, femora and tarsi brown, chaetotaxy hind tarsi 7/7. Length ♂ : 9-9.3 mm; ♀ : 9.9-10.4 mm.

Male genitalia (figs. 10-15) : asymmetrical; anal segment with a large apical process excavated at apex. Pygofer with a small process on left side which continues internally into the attachment of the aedeagus, on right side with a small triangular process in dorsal half of lateral margin. Genital styles with a spinose process on inner side of apex. Aedeagus with five long spines and two short spines at apex, periandrium with a plate-shaped process on ventral margin as illustrated in fig. 15.

Female genitalia (figs. 18 & 19) : Pregenital sternite with a median broad, triangular projection, blunt or sharp. First valvulae with a basal thickened part extending over half or more of its length, and abruptly narrowing into a distal, less chitinized part. Second pair as long as first pair and third valvulae slightly longer than first pair. Anal segment nearly as broad as pygofer, diamond-shaped.

Diagnosis :

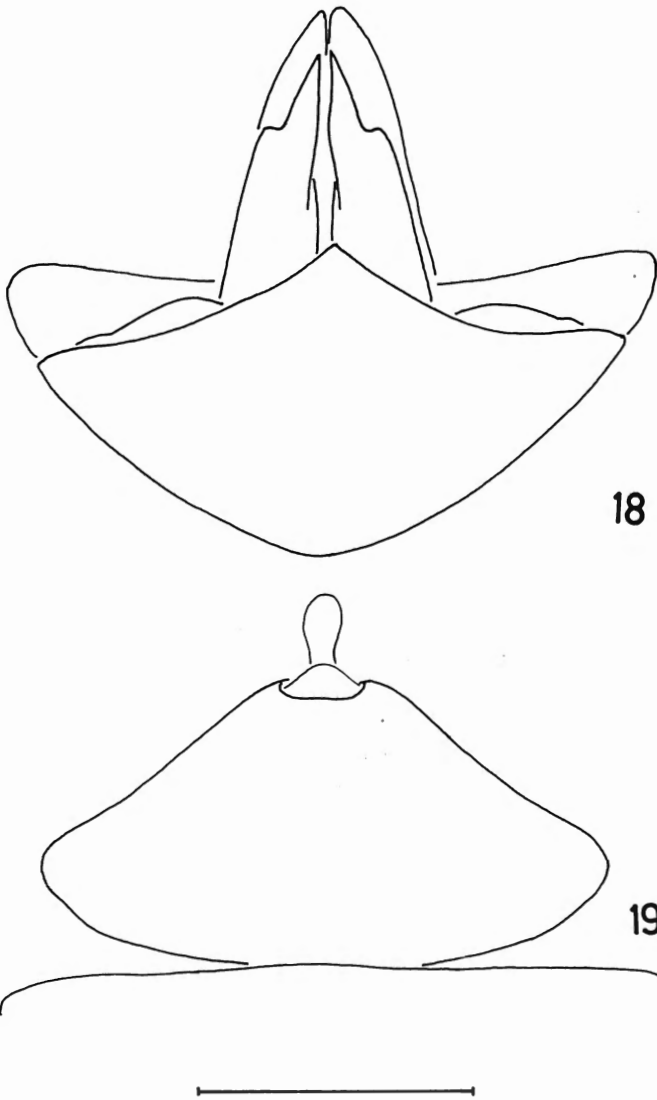
O. niuginiensis can not be related to any of the known *Oliarus* species or to those described in this paper. The chaetotaxy of the hind tarsi, the large process on the anal segment and the characteristic structure of the aedeagus distinguish it from all other species.

Oliarus busoensis sp. n. (figs. 20-26)

Material :

Holotype ♂, PNG, Morobe Prov., Buso, IX-XI.1979, J. Martin, BMNH.

Paratypes : 1 ♂, New Guinea, 1927, Oranjeberge, A.



Figs. 18-19. - *Oliarus niuginiensis* sp. n., ♀ - 18 : pregenital sternite, valvifers, ovipositor and pygofer, ventral view; the second pair of valvulae is not figured; 19 : anal segment and pygofer, dorsal view. Scale line : 1 mm.

Kalthofen, ITZ; 1 ♂, PNG, Upper Fly River, Aimbak-Omo Area, 19.X.1972, BMNH.

Description :

Colour face varying from almost black to yellowish brown, with two large pale maculae on frontoclypeal suture; lateral keels yellow. Labium yellowish, embrowned apically. Vertex (fig. 26) twice as long as broad, black and broadly bordered with yellow, transverse keel U-shapes, branching from lateral margin at 0.52 distance of base and divided into two parts which join in middle of anterior border. Pronotum and tegulae yellow, pronotum suffused with brown laterally. Mesonotum black with concolorous keels, with two paler fasciae between outer keels. Tegmina hyaline, 2.9 times as long as broad, Sc+R forking basad of Cu or at same level, costal margin not granulated; veins and stigma black, apex of tegmina and transverse apical veins brown fumated; apical border of stigma yellow. Legs

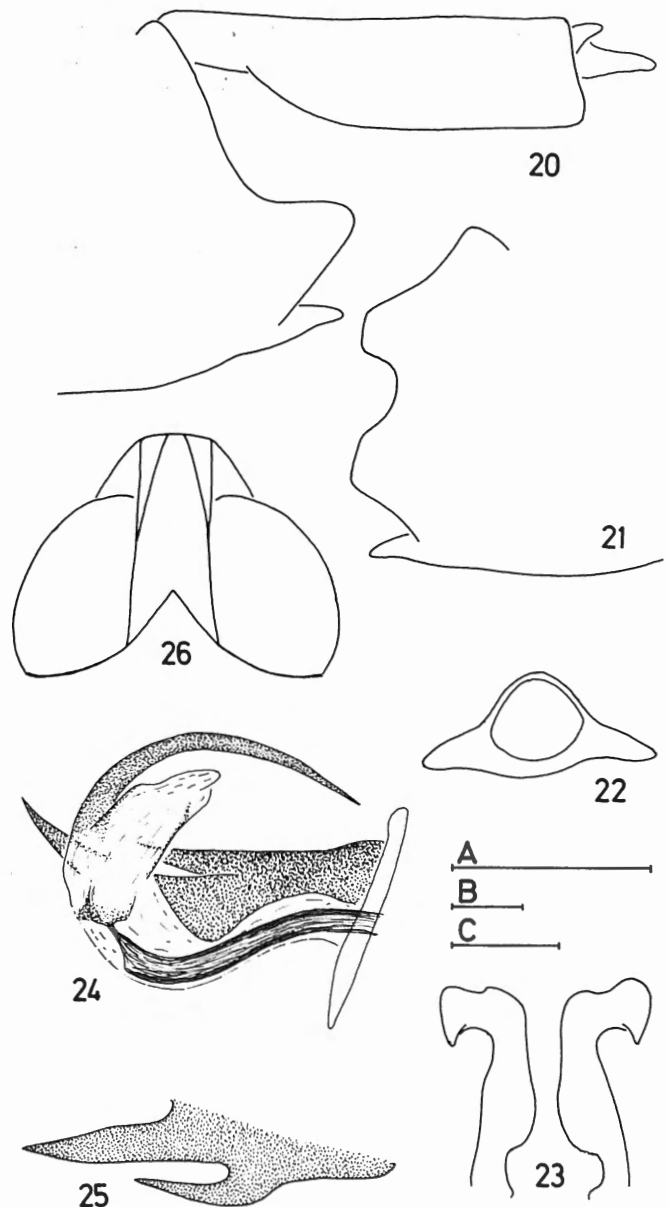
yellow, femora embrowned, chaetotaxy hind tarsi 7/5. Length ♂ : 8.7-9.9 mm.

Male genitalia (figs. 20-25) : anal segment without apical process. Pygofer asymmetrical, left margin with a triangular lobe, right margin with two processes separated by an excavation. Aedeagus with one spine parallel to flagellum and one bifurcate process on ventral margin.

Female unknown.

Diagnosis :

O. busoensis can be distinguished from any other species by the excavated right margin of the pygofer.



Figs. 20-26. - *Oliarus busoensis* sp. n., holotype - 20 : anal segment and pygofer, left lateral view; 21 : right lateral margin of pygofer; 22 : anal segment, caudal view; 23 : genital styles; 24 : aedeagus, dorsal view; 25 : ventral spinose process of aedeagus, lateral view; 26 : head.

Scale : A (1 mm) : 26; B (0.2 mm) : 20-23; C (0.2 mm) : 24, 25.

Oliarus undabundus sp. n.
(figs. 27-35)

Material :

Holotype ♂, "Neth. Ind. - American New Guin. Expedit.", Bernhard Camp 50 m, 4.VII.1938, J. Olthof, ML.

Paratypes : 1 ♂, 5 ♀♀, same data as holotype, ML.

Description :

Frons fumated with black between keels, entirely yellow in one specimen, and bearing two roundish white maculae laterally on frontoclypeal suture; keels yellow; postclypeus yellow with two black streaks near frontoclypeal suture next to each macula. Vertex (fig. 33) 2.2 times as long as broad, deeply excavated with prominent lateral margins, black with yellow keels, transverse keel U-shaped and branching from lateral margin on 0.43 from base and divided into two keels which join in middle of anterior border. Pronotum yellow, mesonotum yellow, mesonotum varying from almost entirely black to pale brown, often with two paler longitudinal fasciae between outer keels. Tegulae yellow. Tegmina (fig. 32) hyaline, 2.9 times as long as broad, costal margin without granules, bent in proximal half, Sc+R forking at same level as Cu and transverse veins and apical margin fumated with brown; one female specimen has the tegmina entirely castaneous brown, except for

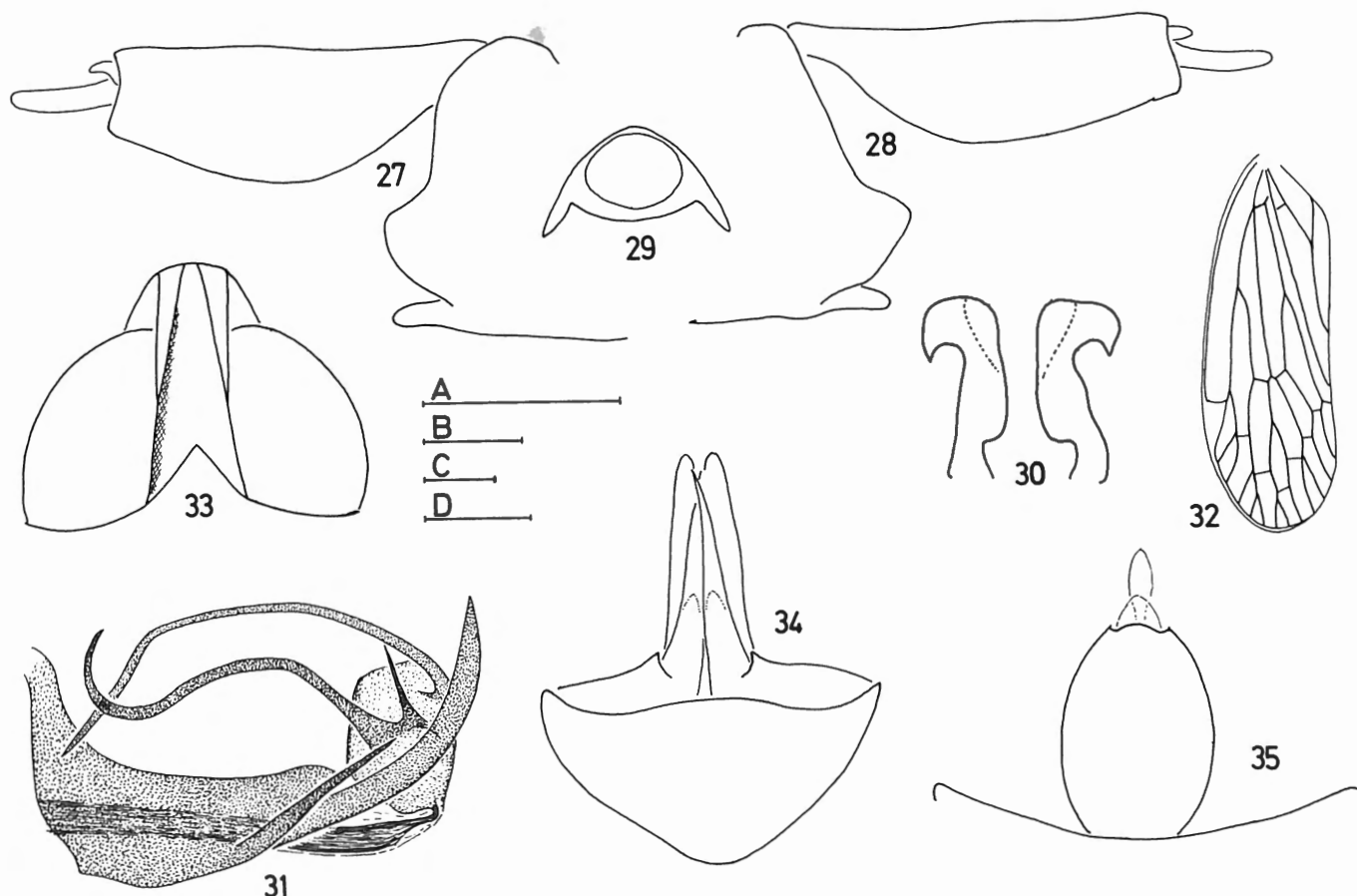
the base which is hyaline and uncoloured and anterior margin of stigma which is yellow. Abdomen brown. Legs yellow, chaetotaxy hind tarsi 7/5. Length : ♂ : 8.1-8.8 mm; ♀ : 8.9-10.5 mm.

Male genitalia (figs. 27-31) : anal segment without apical lobe. Pygofer slightly asymmetrical, right dorsolateral margin rounded, left one straight. Genital styles as illustrated. Aedeagus with two long curled spines, one short straight spine on ventral side of flagellum and two spines inserted on ventral margin of sclerotised periandrium and directed caudad.

Female genitalia (figs. 34 & 35) : anal segment oblong, three times less wide than pygofer. Ovipositor as long as anal segment; valvifers with a short tooth-shaped process on inner margin, pregenital sternite with caudal border slightly sinuate.

Diagnosis :

Externally this species resembles *O. busoensis* from which it can be distinguished by the lack of an excavation on the right side of the pygofer. The structure of the aedeagus recalls that of *O. morobensis*; it differs in the structure of the vertex which is forking closer to the base in *O. undabundus*, in the chaetotaxy of the hind tarsi which is 7/5 in *O. undabundus* and 8/8 or 8/7 in *O. morobensis*, and in the absence of spines on the genital styles.



Figs. 27-33. - *Oliarus undabundus* sp. n., holotype - 27 & 28 : anal segment and pygofer, right and left lateral view; 29 : anal segment, caudal view; 30 : genital styles, with inner process marked by a dotted line; 31 : aedeagus, ventral view; 32 : left tegmen; 33 : head.

Oliarus reductus (WALKER, 1868)
(figs. 36-43)

Cixius reductus WALKER, 1868 : 105.
Oliarus reductus; DISTANT, 1907 : 281.

Material :

Lectotype ♀, here designated, Mys[ol], Wallace, BMNH (examined).

Additional : 2 ♂♂, Papua New Guinea, Madang Prov., Awar village, 31.V.1979, 26.VII.1981, light trap, J. Van Goethem, KBIN; 1 ♂, 2 ♀♀, Madang Prov., Sisimangum village, 31.V.1979, 15.VI.1979, light trap, J. Van Goethem, KBIN.

Description :

Face yellow to yellowish brown, anteclypeus and sometimes apex of postclypeus and frons near frontoclypeal suture brown fumated. Vertex (fig. 40) 1.3 times as long as broad, flat with weakly prominent keels, black or partly yellow near keels, these yellow; subapical keel U-shaped, branching from lateral border on 0.28 distance of base, and divided into two parts which are running to the middle of the anterior border; median keel well-developed in basal half. Pronotum yellow, embrowned laterally, mesonotum entirely black, longitudinal keels sharp, and tinged with yellow. Tegmina (fig. 43) hyaline, 3.3 times as long as broad, costal margin straight, not granulate, Sc+R forking distad of Cu; veins, stigma and margins yellow, apical veins more embrowned, transverse veins fumated with brown; veins smooth, without granules. Legs yellow, chaetotaxy hind tarsi 7/5 Length : ♂ : 5.5, ♀ : 7 mm.

Male genitalia (figs. 36-39) : anal segment without apical process. Pygofer asymmetrical, left margin with a blunt, upcurved process, right margin without such a process, but lobe slightly excavated at apex. Genital styles as illustrated. Aedeagus with two spines at apex, and flagellum with two processes, one spine and one blunt, membranous and oblong process.

Female genitalia (figs. 41 & 42) : pregenital sternite with two blunt submedian lobes separated by a median, almost semi-circular excavation. Ovipositor as long as anal segment, with three subequal pairs of valvulae, the first and second very slender, almost hair-shaped. Anal segment egg-shaped, broadest near base and half as broad as pygofer.

Remark :

This species has also been recorded from Borneo and the Philippines. The species is described as a male, but in fact it is a female. As the number of specimens is not specified we have selected a lectotype.

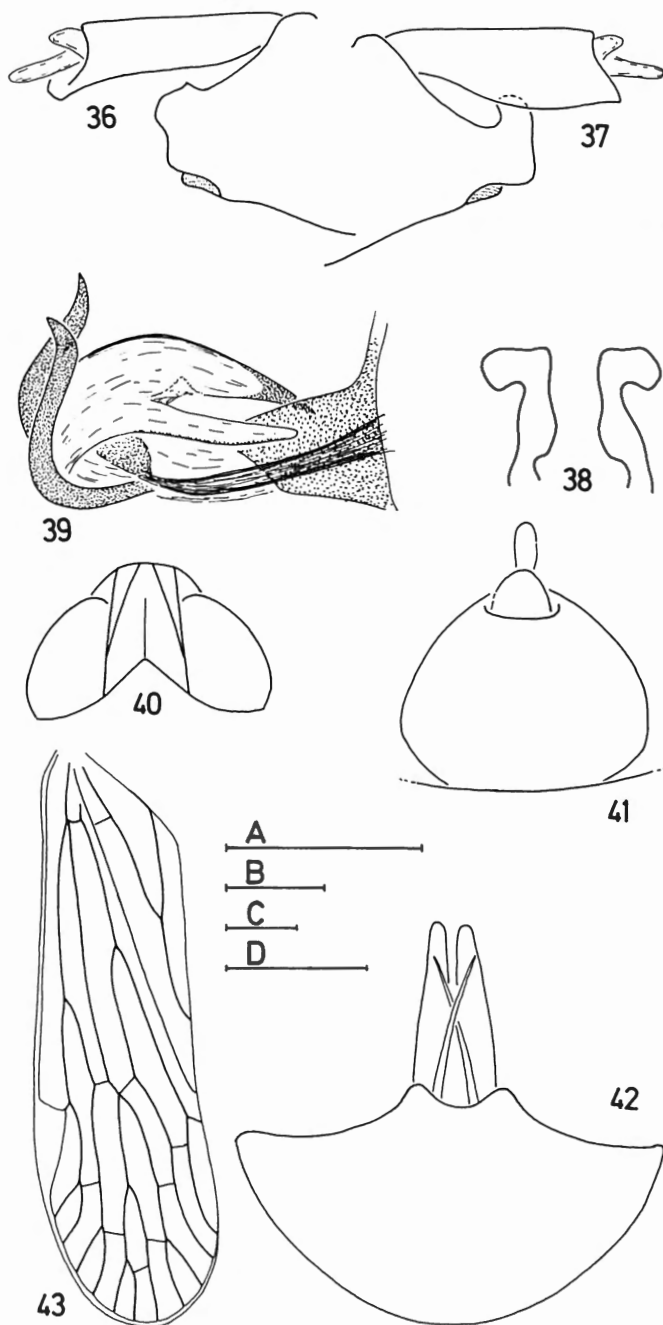
Figs. 34-35. – *Oliarus undabundus* sp. n., ♀ – 34 : pregenital sternite, valvifers and ovipositor, ventral view; 35 : anal segment and pygofer, dorsal view.
Scale : A (1 mm) : 33, 34, 35; B (2 mm) : 17; C (0.2 mm) : 27-30; D (0.2. mm) : 31.

Oliarus ramiferens sp. n.
(figs. 44-52)

Material :

Holotype ♂, "Neth. Ind.-American New Guinea Exped.", Bernhard Camp 50 m. X.1938, J. Olthof, ML.

Paratypes : 4♂♂, 11 ♀♀, same data as holotype, ML.



Figs. 36-43. – *Oliarus reductus* (Walker, 1868) – 36 & 37 : anal segment and pygofer, right and left lateral view; 38 : genital styles; 39 : aedeagus, dorsal view; 40 : head; 41 : female terminalia, anal segment; 42 : female, pregenital sternite and ovipositor; second pair of valvulae not figured; 43 : left tegmen.
Scale : A (1 mm) : 40; B (1 mm) : 43; C (0.2 mm) : 36-38, 41, 42; D (0.2. mm) : 39.

Description :

Head entirely yellow, anteclypeus slightly embrowned. Vertex flat, carinae not prominent and with a well-developed median keel, 1.6 times as long as broad, transverse keel divided into two separate parts each forking from lateral margin at 0.38 distance of base, and running straight to apex. Pronotum and tegulae yellow, mesonotum brown with slightly paler keels. Tegmina hyaline, 3.3 times as long as broad, Sc+R forking distad of Cu, all veins yellow and smooth, without granules, apical transverse veins slightly fumated with brown; costal margin without granules. Legs yellow, chaetotaxy hind tarsi 7/5. Length ♂ : 7.5-7.9 mm, ♀ : 9-9.7 mm.

Male genitalia (figs. 44-50) : anal segment without an apical process. Pygofer asymmetrical, left lateral margin with a short spine, right margin without such a spine but lobe slightly excavated at apex. Genital styles irregularly denticulated at apex. Aedeagus with an apical ramose process with three branches, and a ventral process consisting of one very slender and one stout spine.

Female genitalia (figs. 51 & 52) : pregenital sternite slightly protruding in middle and shallowly excavated. Ovipositor with three pairs of valvulae, as long as anal segment. First pair gently narrowing to apex. Anal segment circular in shape and half as broad as pygofer.

Diagnosis :

O. ramiferens is related to *O. reductus* and can be distinguished from this species by its larger size and by the structure of the left lateral margin of the pygofer which bears a spine in *O. ramiferens* and by the structure of the aedeagus which bears more spines in *O. ramiferens* and which has a ventral spinose process which is absent in *O. reductus*. In the female genitalia the pregenital sternite of *O. reductus* has a median excavation which is lacking in *O. ramiferens*.

***Oliarus inficitus* (WALKER, 1868), comb. n.**
(figs. 53-59)

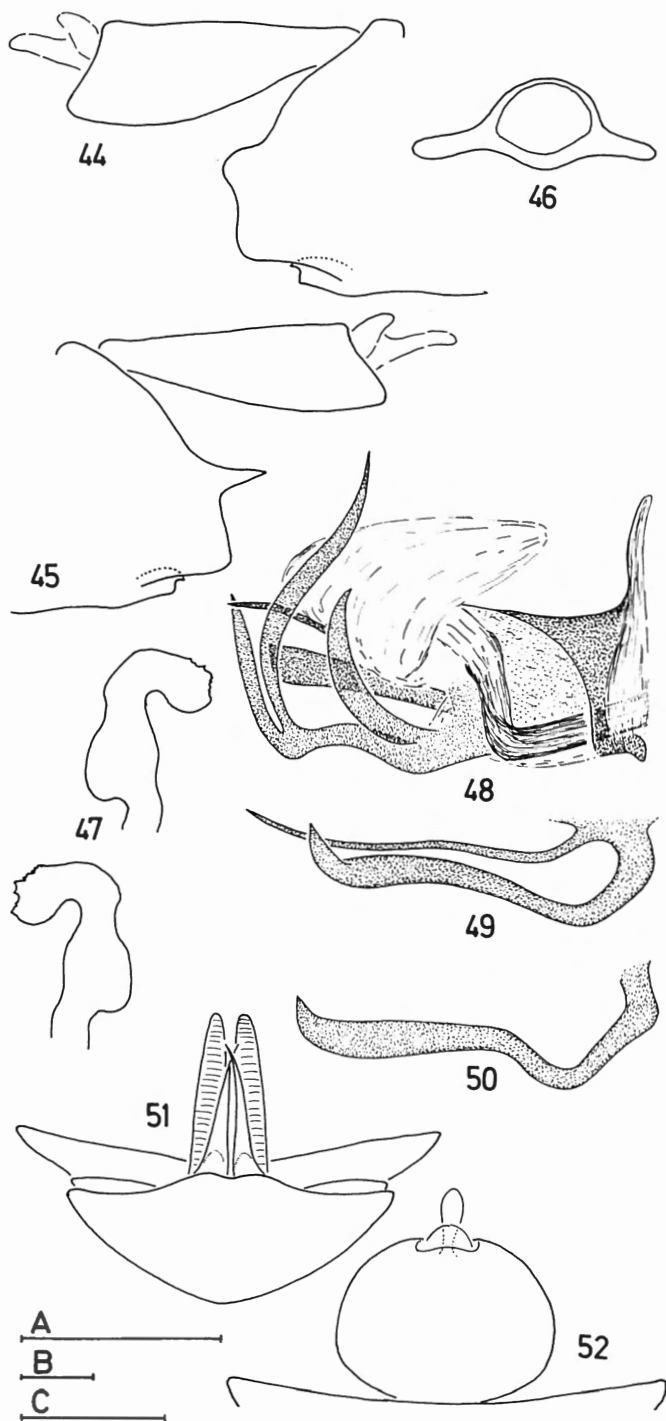
Cixius inficitus WALKER, 1868 : 103.

Material :

Lectotype ♂, here designated, Mysol, Wallace, BMNH (examined).

Description :

Colour yellowish brown; face with a very sharp median keel which is almost foliaceous; vertex (fig. 59) twice as long as broad with prominent keels; transverse keel U-shaped, branching from lateral margin at 0.63 of base. Pronotum yellow. Mesonotum with three keels, the submedian ones only slightly developed. Tegmina hyaline, 2.7 times as long as broad, Sc+R forking at same level as Cu; costal margin with very small concolorous granules. Hind legs lacking. Length : 7.5 mm.



Figs. 44-50. – *Oliarus ramiferens* sp. n., holotype – 44 & 45 : anal segment and pygofer, right and left lateral view; 46 : anal segment, caudal view; 47 : genital styles; 48 : aedeagus, dorsal view; 49 : ventral process on aedeagus; 50 : aedeagus, largest spine of ventral process, other specimen.

Figs. 51-52. – *Oliarus ramiferens* sp. n., ♀ – 51 : pregenital sternite, valvifers, pygofer and ovipositor, ventral view; second pair of valvulae not figured; 52 : anal segment and pygofer, dorsal view. Scale : A (1 mm) : 51, 52; B (0.2 mm) : 44-47; C (0.2 mm) : 48-50.

Male genitalia (figs. 53-58) : anal segment asymmetrical, with a spine-shaped process on right side. Pygofer with triangular lateral margins. Genital styles with a small process on inner side. Aedeagus with five spines on apex and a long process on flagellum.

Remark :

As Walker did not specify the number of specimens used for his original description I have selected a lectotype.

***Oliarus intertectus* (WALKER, 1868)**
(figs. 60-63)

Brixia intertecta WALKER, 1868 : 114.

Oliarus intertectus; DISTANT, 1907 : 281.

Material :

Lectotype ♀, here designated, "N. Gui.", "Wallace", BMNH (examined).

Description :

Face uniform pale ochreous, keels prominent, very sharp, almost foliaceous. Labium very long, almost reaching to distal end of hind femora. Vertex (fig. 61) narrow, 1.8 times as long as broad, subapical keel U-shaped, forking at 0.66 distance of base; keels prominent, surface of vertex deeply excavated. Pronotum yellow, anterior lateral border

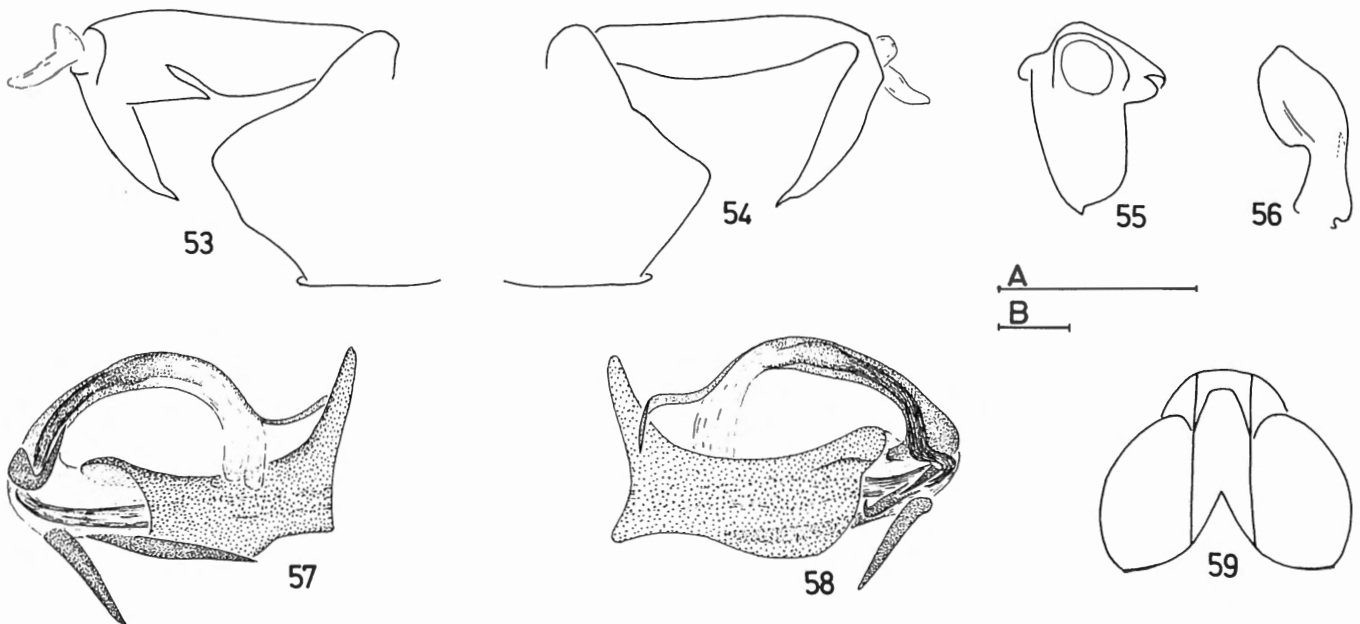
brown fumated. Mesonotum uniformly brown with concolorous keels, both submedian keels very weakly developed; Tegmina (fig. 60) 2.8 times as long as broad, veins, stigma and costal margin brown and brown spots just anterior of stigma and on transverse veins; costal margin and veins with very small concolorous granules, Sc+R forking at same level as Cu. Legs yellow, hind femur with lateral spines, chaetotaxy hind tarsi 6/6. Length : 9.5 mm. Male unknown.

Female genitalia (figs. 62 & 63) : pregenital sternite slightly asymmetrical on base, caudal border of pregenital sternite undulate. Ovipositor slightly longer than anal segment, first valvulae thickened basally over half their length. Anal segment diamond-shaped, as broad as pygofer and broadest near base.

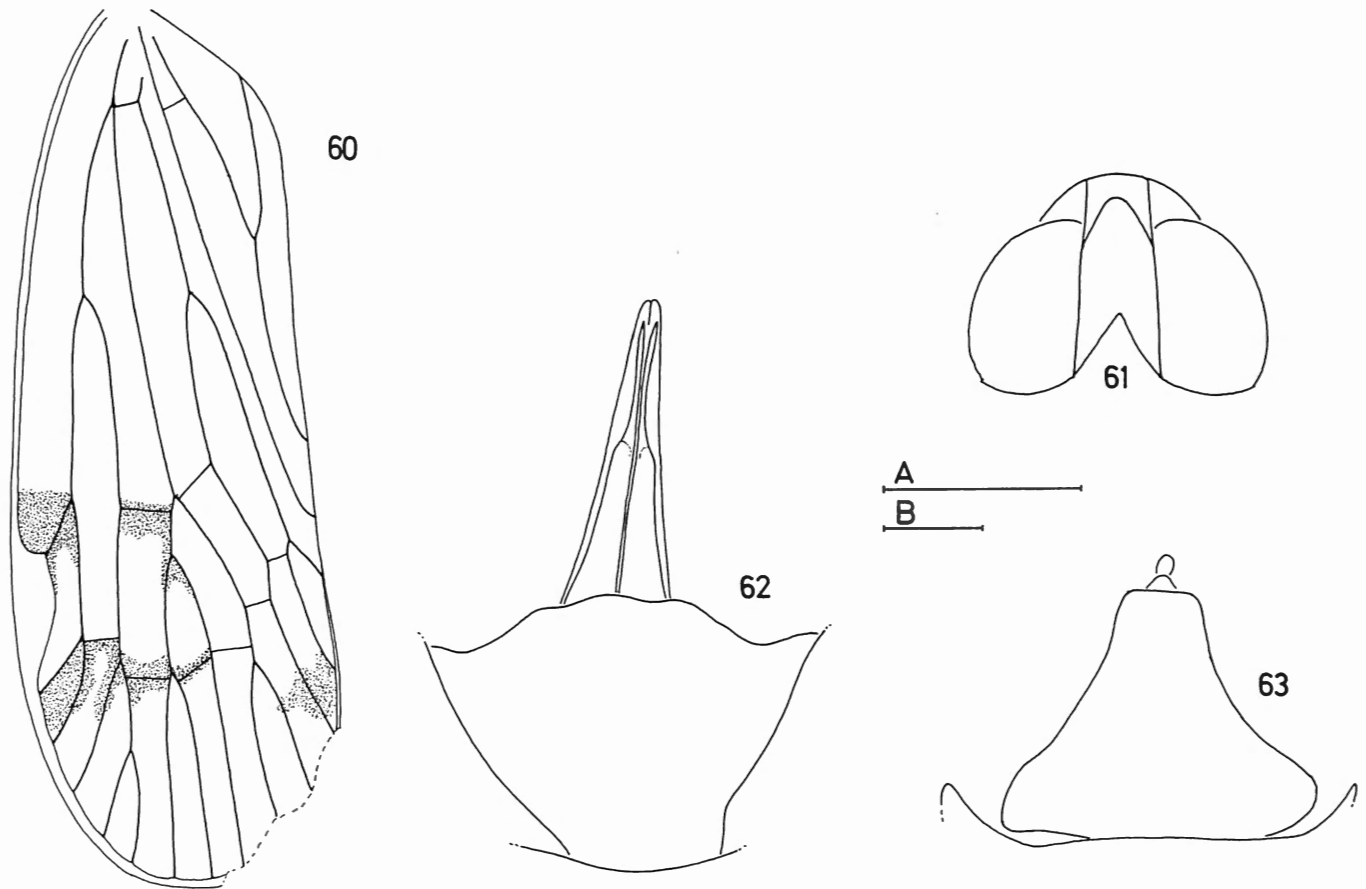
Remarks :

As in *Oliarus reductus* the type is described as a male although the specimen listed here is a female. It bears the original label with Walker's handwriting, and it has been observed several times that Walker did not determine the right sex of the specimen he described. As there is no holotype designation we have selected the (unique) specimen as a lectotype.

Oliarus intertectus might be synonymous with *O. inficitus*; the respective types are a female and a male and the differences between both taxa might be the result of a sexual dimorphism.



Figs. 53-59. – *Oliarus inficitus* (Walker, 1868), lectotype – 53 & 54 : anal segment and pygofer, right and left lateral view; 55 : anal segment, caudal view; 56 : left genital style; 57 and 58 : aedeagus, right and left lateral view; 59 : head. Scale : A (1 mm) : 53-56; B (0.2 mm) : 57-58.



Figs. 60-63. – *Oliarus intertectus* (Walker, 1868), lectotype – 60 : left tegmen; 61 : head; 62 : pregenital sternite and ovipositor, ventral view; second pair of valvulae not figured; 63 : anal segment and pygofer, dorsal view.
Scale : A (1 mm) : 61-63; B (1 mm) : 60.

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