

**Dolichopodidae (Diptera) from Papua New Guinea XI:
the genus *Asyndetus* LOEW, 1869 on the northern coast**

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Contribution n° 275 of the Biological Station Leopold III on Laing Island.

Abstract

Four new species from the northern coast of Papua New Guinea are described and illustrated: Asyndetus vicinus sp. n., A. intermedius sp. n., A. eurytarsus sp. n. and A. obscurus sp. n.. A. porrectus PARENT is re-described from freshly collected material. The types of A. acuticornis DE MEIJERE, A. fractus DE MEIJERE and A. nigripalpis DE MEIJERE, a junior synonym of A. exactus WALKER, are also re-described. A key is given for all species actually known from Papua New Guinea.

Introduction

The present paper is a part of a general review of the dolichopidid fauna of Papua New Guinea. In the subfamily Diaphorinae only the genera *Diaphorus* with 16 species (MEUFFELS & GROOTAERT, 1985) and *Cryptophleps* with a single species (GROOTAERT & MEUFFELS, 1987) have been treated so far. The genus *Asyndetus* LOEW, 1869, is a very large genus with about 80 species known from all over the world. According to BICKEL & DYTE (1989), seven species are reported from New Guinea. In the present paper we re-describe four of them and in addition we describe another four new species. The total number actually known from New Guinea is eleven species.

As in *Diaphorus*, the males of *Asyndetus* exhibit a number of secondary sexual characters which are the loss of the claws generally associated with enlarged pulvilli, different shape and colour of the palpi and slight differences in shape of the antennae. A species group has also enlarged tarsal segments on the fore legs. Some of the old species have been described from females only, hence their identification is difficult.

The ecology of *Asyndetus* is poorly known. Many species live inland in

moist surroundings, in open or in wooded areas, often near rivers or lakes, in mountainous regions up to about 1,500 m. Some species appear to be halophilous and frequent coastal regions (sea shores, salines, CZERNY & STROBL, 1909: 190; STROBL, 1910: 89; PARENT, 1937: 133; ROBINSON, 1975: 68, 69, 71, 72) or (in inland) salty soils (NEGROBOV, 1967: 1078; 1973: 160-162). The new species from the present paper were all found on the sea shore or on the shore of hemisaline rivers running through mangroves. They were not found in the adjacent swamps.

Material and methods

The types of *Asyndetus* described by DE MEIJERE (1913) from Papua New Guinea have been examined. They are deposited in the collections of the "Instituut voor Taxonomische Zoölogie" (I.T.Z.) in Amsterdam.

Most fresh material was collected by the second author during various expeditions (1982, 1987, 1992, 1993) near Hansa Bay (Madang province, Bogia district) on the northern coast of Papua New Guinea (see map, fig. 30). Except for some specimens caught with a light trap, all other material has been collected with small white pan traps (12 x 19 x 7 cm) which were placed on the ground in the vegetation just above the supra-littoral on the beach. Only a few specimens have been collected with sweep netting. The fresh material is preserved in alcohol in the collections of the "Koninklijk Belgisch Instituut voor Natuurwetenschappen" (K.B.I.N.) in Brussels.

Abbreviations:

acr : acrostichal bristles
av : anteroventral bristles
dc : dorsocentral bristles
pv : posteroventral bristles

Systematic part

1. *Asyndetus porrectus* PARENT, 1939, ♂♀ (Figs 1-4)

A rather large species with hind legs entirely dark. All legs of ♂ without claws and with rather short pulvilli. Clypeus in ♂ not protruding, not nearly reaching lower eye margins, in ♀ protruding, reaching only to just below eyes. Only fore femur of ♂ with longer ventral bristles. Bristling of legs in ♂ and ♀ relatively weak. Middle tibia without ventral bristle or with a very small bristlet just in front of middle.

♂.

Head. Inner eye margins only feebly converging downwards, so that the face seems to be nearly parallel-sided; frons not much wider than face. Clypeus not protruding, not nearly reaching lower eye margins. Frons and face with shining metallic green ground colour. Palpi (Fig. 2) rather long, often pointing forward, oblong, ovaloid with a narrow base (spatulate), blackish brown, bearing one strong and several short black bristles. Ros-

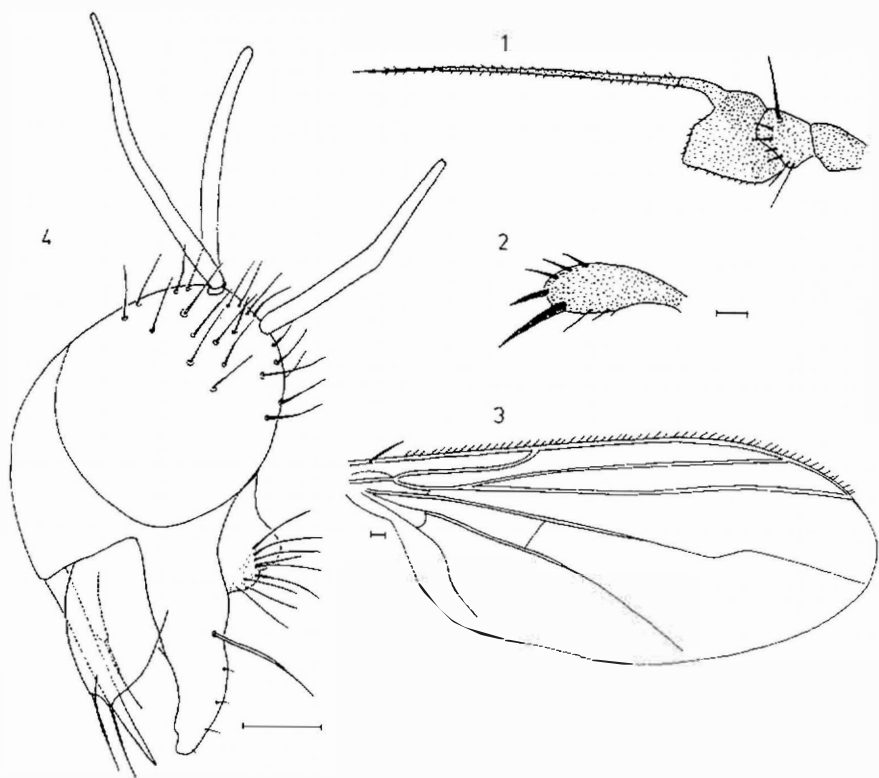
trum dark brown, slightly longer than palpi. Eyes bare. Outer eye margin with a shallow incision on lower half (not always very clear). Occiput with shining dark metallic ground colour. Two strong, diverging, bent ocellars, pointing upwards; two equally strong bent verticals, about parallel, sloping forward; two very small postocellars; two moderately strong postverticals, crossing at tips. Upper postocular cilia short, black, growing shorter downwards, uniseriate, reaching downwards until the point where the shallow incision begins; from there the postocular cilia are whitish, uniseriate, short, but becoming longer and pluriseriate below, where several bristlelike black setae are intermingled. **Antennae** (Fig. 1) inserted just above middle of head, short, black. First segment rather narrow, longer than deep, bare. Second segment conical, with a circlet of black bristles. Third segment squarish, slightly longer than deep, with a ventral, rather acute apex. Arista dorsal, inserted beyond middle of upper margin of third antennal segment, practically bare, nearly 2.5 times as long as antenna; basal segment rather thick at base, tapering, much shorter than third antennal segment.

Thorax, including pleurae, and scutellum with shining dark metallic green ground colour. A short, shallow flattened area in front of scutellum. Acr biseriate, short. 4 dc. Humeri with a long but not very strong bristle and a very short hair. 2 posthumeral, 2 notopleural, 1 sutural, 2 supra-alars, 1 postalar. Scutellum with 2 large marginals, each flanked by a small hairlike bristlet. 1 black propleural bristle, and above it a small hairlike bristlet.

Legs. Coxae and femora black with a metallic green gloss. Trochanters I and II dark brown, III black. Extreme apices of femora I and II yellow. Tibiae I and II brownish yellow; tarsi I and II brownish yellow at base of basal segments, rapidly darkened from there. Tibia and tarsus III black (tibia dorsally somewhat brownish).

Fore leg. Coxa anteriorly and apically with black hairs and several rather long and strong black bristles. Trochanter ventrally with a small hair. Femur posteroventrally with a row of weak bristles, growing longer towards apex of femur (there about as long as diameter of femur). Tibia about as long as femur; dorsally three small bristles, hardly longer than diameter of tibia; near base dorsally a pair of small bristles; apically some moderately strong bristles. Pulvilli rather small, slightly shorter than fifth tarsal segment, yellow; no claws. Length ratio of tibia and tarsal segments of fore leg (in mm): 0.9: 0.55: 0.2: 0.15: 0.1: 0.1.

Middle leg. Coxa with black hairs and some rather long and strong black bristles. Trochanter anterodorsally with two long black bristles. Femur ventrally with somewhat lengthened hairs; antero- and postero-ventrally on apical fifth a few longer bristle-like hairs and bristles. Tibia a little longer than femur; two strong ad, preceded by a short bristlet; 3 rather short pd on basal half; a very small ventral bristlet about middle; 3 apical bristles. Pulvilli as on fore leg; no claws. Length ratio of tibia and tarsal segments of middle leg: 1.1: 0.65: 0.3: 0.2: 0.12: 0.1.



Figs 1-4. *Asyndetus porrectus* PARENT ♂: 1. antenna; 2. palp; 3. hypopygium; 4. wing. Scale: 0.1 mm.

Hind leg. Coxa with a black exterior bristle. Trochanter dorsally with a rather long, weak bristle. Femur without a real preapical bristle; weak preapical av and pv present. Tibia a little longer than femur; 4 ad, 4 pd, 1 dorsal bristle; 4 apicals. Pulvilli smaller than on fore leg; no claws. Length ratio of tibia and tarsal segments of hind leg: 1.5: 0.43: 0.4: 0.3: 0.15: 0.125.

Wings (Fig. 4) hyaline, slightly brownish tinged. Costa runs to tip of r4+5, brownish black, but becoming paler towards tip of wing. Apical part of m1+2 not interrupted, growing thin soon beyond tp, colourless and very thin from first bend onwards; two smooth bends just beyond middle of apical part of m1+2. Tp somewhat oblique, much shorter than apical part of m3+4 ($\pm 1: 4$); apical part of m3+4 ends close to wing margin. Anal vein short. Halteres yellow. Squamae yellowish white, with white cilia.

Abdomen with dark metallic green ground colour. Six visible tergites. First tergite with rather longer black bristles, laterally with pale hairs, dorsally with black hairs. Other tergites with black hairs and bristles. Venter brownish black, with black hairs and bristles. Sixth segment narrowed and shortened downwards. Hypopygium (Fig. 3) in rest obliquely pressed close to sixth abdominal segment, brownish black to black, with 4 strong macrochetæ. Cerci very small, adjacent, dark brown, with short dark hairs.

♀.

Head. Clypeus protruding, at an obtuse angle to epistoma, reaching to just below eyes. Outer eye margin without distinct shallow incision. Third antennal segment slightly shorter, about as long as deep.

Legs coloured as with the ♂. Fore femur with posteroventral hairs shorter than in ♂. Tibia I with a pair of small dorsal bristles near base, and with only two short dorsal bristles. Tibia II without ventral bristle or with a very small bristlet just in front of middle. Hind tibia with 4 ad and 3-4 pd, all rather strong but short. Pulvilli of all legs very small; claws present on all legs.

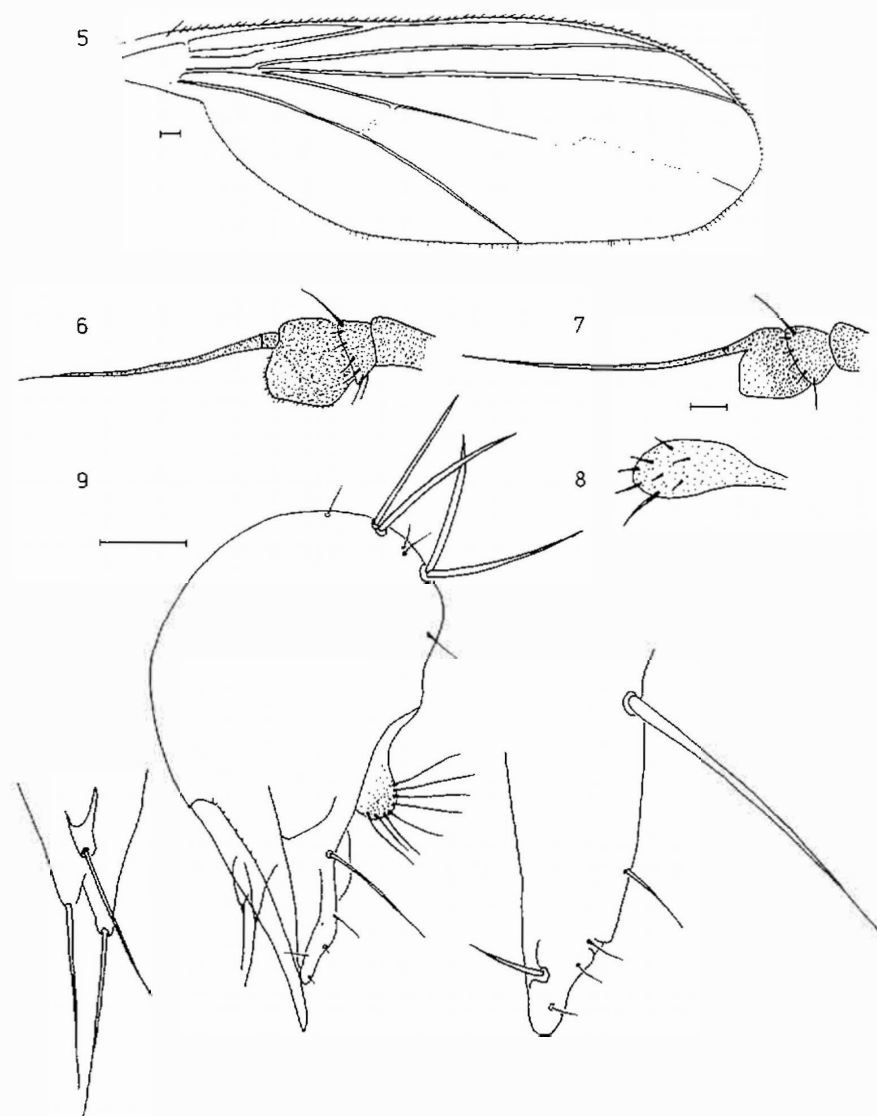
Abdomen. Five tergites visible. First tergite laterally without pale hairs en with shorter black hairs and bristles. Bristles and hairs on all further tergites and sternites black, shorter than with the ♂. Anal parts telescoping beneath fifth tergite, with six blunt, dark brown dornen.

Size: Male: length body: 3.6 - 4.5 mm; wing: 2.5 - 3.2 mm.
Female: length: body: 3.8 - 4.5 mm; wing: 2.6 - 3.4 mm.

Material examined: Papua New Guinea, Madang province, Bogia district, Awar beach, white water traps among *Caravalia maritima* on upper beach, 9.III.1992, 9♂♂ 14♀♀; Bogia district, Condor Point, 13.III.1992, 5♂♂, 11♀♀, leg. P. GROOTAERT.

Variability. On fore tibia often an additional small dorsal bristle near base. On middle tibia often 3 ad, preceded by a small bristlet. Thorax often with 5 dc (then the 3rd one feeble).

Discussion. Answers very well to the description of PARENT (1939: 165-166); diagnostic are especially: the completely black hind legs in ♂ and ♀, and the pulvilli ("pelotes un peu hypertrophiées" on fore leg). According to PARENT's description the frons is "entièrement terni par un satiné gris blanc", and the face "vue de face, vert métallique, tangentiellement à satiné blanc"; the mesonotum is "vert clair à givré blanc", and the abdomen "brillant, cuivreux, à givré blanc sur les flancs". Described from N.Guinea: Vanimo (F.H. TAYLOR).



Figs 5-9. *Asynderus vicinus* sp. n. 5. wing ♂; 6. antenna ♀; 7. antenna holotype ♂; 8. palp holotype ♂; 9. hypopygium with details. Scale: 0.1 mm.

2. *Asynderus vicinus* n. sp. ♂♀ (Figs 5-9)

A smaller species, with tibia III largely yellow. Legs of ♂ without claws; all pulvilli of ♂ strongly enlarged. Clypeus of ♂ slightly protruding, reaching to just below eyes; clypeus of ♀ strongly protruding, rea-

ching down much below eyes. All femora in ♂ ventrally with rows of bristles. Bristling of legs in ♂ and ♀ rather strong; no ventral bristle on tibia II.

♂.

Head. Face below antennae practically parallel-sided. Clypeus slightly protruding, reaching down to just below eyes. Frons and face with dark metallic green ground colour. Palpi (Fig. 8) oblong, ovaloid, with a narrow base (spatulate), often pointing forward, dark brown, bearing several short black bristlets, two of which are somewhat longer. Rostrum dark brown, slightly longer than palpi. Eyes bare; outer eye margin without shallow incision. Occiput with shining dark metallic green ground colour. Two strong diverging ocellars, pointing upwards; two equally strong verticals, converging, sloping forward; two very small postocellars; two moderately strong, converging postverticals. Upper postocular cilia rather short, black, not growing shorter downwards; from about middle of outer eye margin downwards the postocular cilia are rather long, white, pluriseriate, forming whiskers (all these cilia are of about the same length, without inter-mingling of black bristles). **Antennae** (Fig. 7) inserted above middle of head, rather short, black. First segment rather narrow, bare; second segment conical, with a circlet of short black bristlets. Third segment about as long as deep, with a not very acute apex, broadly rounded on basal angles. Arista dorsal, about twice as long as antenna, practically bare; basal segment very short, slightly swollen at base.

Thorax, including pleurae and scutellum, with shining dark metallic ground colour. Acr biseriate, very short; 4 dc; humeri with a strong bristle and a very short bristly hair; 2 posthumeral, 2 notopleurals, 1 sutural, 2 supraalar, 1 postalar. Scutellum with 2 large marginals, each flanked by a short hair. 1 black propleural bristle.

Legs. Coxae and femora black with a metallic green gloss. Trochanters I and II brown, III black. Extreme tips of all femora yellow. Tibiae I and II yellow; tarsi I and II gradually darkened from about middle of basal segments onwards. Tibia III yellow (of a darker hue than tibiae I and II), darkened on apical two fifths. Tarsus III entirely dark.

Fore leg. Coxa anteriorly and apically with black bristles of unequal length. Trochanter with a distinct ventral bristle and one or two very small bristlets. Femur with a row of rather short av on basal three fourths, and a row of longer pv (longer than diameter of femur) on slightly more than apical half, preceded by two short bristles; at base a rather strong but not long bristle, pointing downwards. Tibia about as long as femur; dorsally near base a pair of small, weak bristles (distinctly longer than diameter of tibia); two rather long dorsal bristles about middle of tibia (a shorter one just before, a longer one just beyond middle). Some apical bristles. Fifth segment of tarsus with a fan of rather long bristly hairs; pulvilli whitish yellow, much enlarged (much longer than fifth tarsal segment); no claws. Length ratio of tibia and tarsal segments of fore leg (in mm): 0.7: 0.3:

0.12: 0.1: 0.075: 0.1.

Middle leg. Coxa with black hairs and bristles. Trochanter with a few short and weak bristles. Femur with a row of av and a row of pv, all rather long (about as long as greatest diameter of femur). Tibia about as long as femur; 2 ad, preceded by a very small bristle; 3 slightly shorter pd; a few apicals. Fifth tarsal segment as on fore leg. Length ratio of tibia and tarsal segments of middle leg: 0.75: 0.4: 0.15: 0.1: 0.075: 0.1.

Hind leg. Coxa with a black exterior bristle. Trochanter with a rather long dorsal bristle. Femur with an irregular row of av of unequal length (the longest one longer than diameter of femur), and a row of slightly shorter pv; no real preapical bristle. Tibia a little longer than femur; 4 ad, 4 pd, all rather long and strong; 4 apicals, including a long dorsal one. Fifth segment of tarsus as on fore leg. Length ratio of tibia and tarsal segments of hind leg: 0.95: 0.25: 0.2: 0.15: 0.1: 0.12.

Wings (Fig. 5) hyaline, slightly brownish tinged. Costa runs to tip of r4+5. Apical part of m1+2 not interrupted, but very vague and thin from first bend onwards; the two bends are smooth, and situated just beyond middle of apical part of m1+2. Tp oblique, much shorter than apical part of m3+4 (about 1: 5); m3+4 reaches wing margin. Anal vein short. Halteres pale yellow. Squamae yellowish white, with white cilia.

Abdomen with six visible tergites, with dark metallic green ground colour; sixth tergite dark brown. Hairs and bristles on all tergites (including first tergite) short, black; no pale hairs on sides of first tergite. Venter brownish black with very short black hairs. Sixth segment downwards not narrowed, encompassing base of hypopygium. *Hypopygium* (Fig. 9) brownish black, with 4 not very long macrochetæ. Cerci very small, adjacent, brownish yellow, with short dark hairs.

♀.

Head. Antenna (Fig. 6) as in ♂, but third segment slightly deeper than long. Clypeus strongly protruding at an obtuse angle to epistoma, reaching down much below eyes.

Thorax as in ♂.

Legs coloured as with the ♂, but basal segments of tarsi I and II only narrowly yellow at base. Trochanter II with two rather long hairlike bristles. Femora without rows of long av and pv; femur I ventrally with only very short bristlelike hairs; femora II and III with some longer hairlike bristles (av and pv) near tips. Tibia I with a pair of small dorsal bristles near base (distinctly longer than diameter of tibia), and with only one strong bristle about middle. Tibia II with 2 strong ad and 2 shorter pd; near base a very short dorsal bristle. Tibia III with 4 ad and 4 pd, all strong and long; 4 apical bristles, including a long dorsal one. All legs with claws and very short pulvilli.

Wings as in ♂.

Abdomen with 5 visible tergites (but sixth tergite [pale brown] may be seen). All tergites and sternites with very short black hairs and bristles. Each hemitergite of the genital parts with 3 blunt black dornen.

Size: Male: length: body: 2 - 3.4 mm; wing: 2.2 - 2.5 mm.

Female: length: body: 3.3 - 3.7 mm; wing: 2.5 - 2.8 mm.

Material examined: Holotype male and allotype female: Papua New Guinea, Madang province, Bogia district, Condor Point, 13.III.1992 (leg. P. GROOTAERT); paratypes: same sample, 2♂♂, 8♀♀; Bogia district, Awar, beach, 9.III.1992, 3♀♀ (leg. P. GROOTAERT).

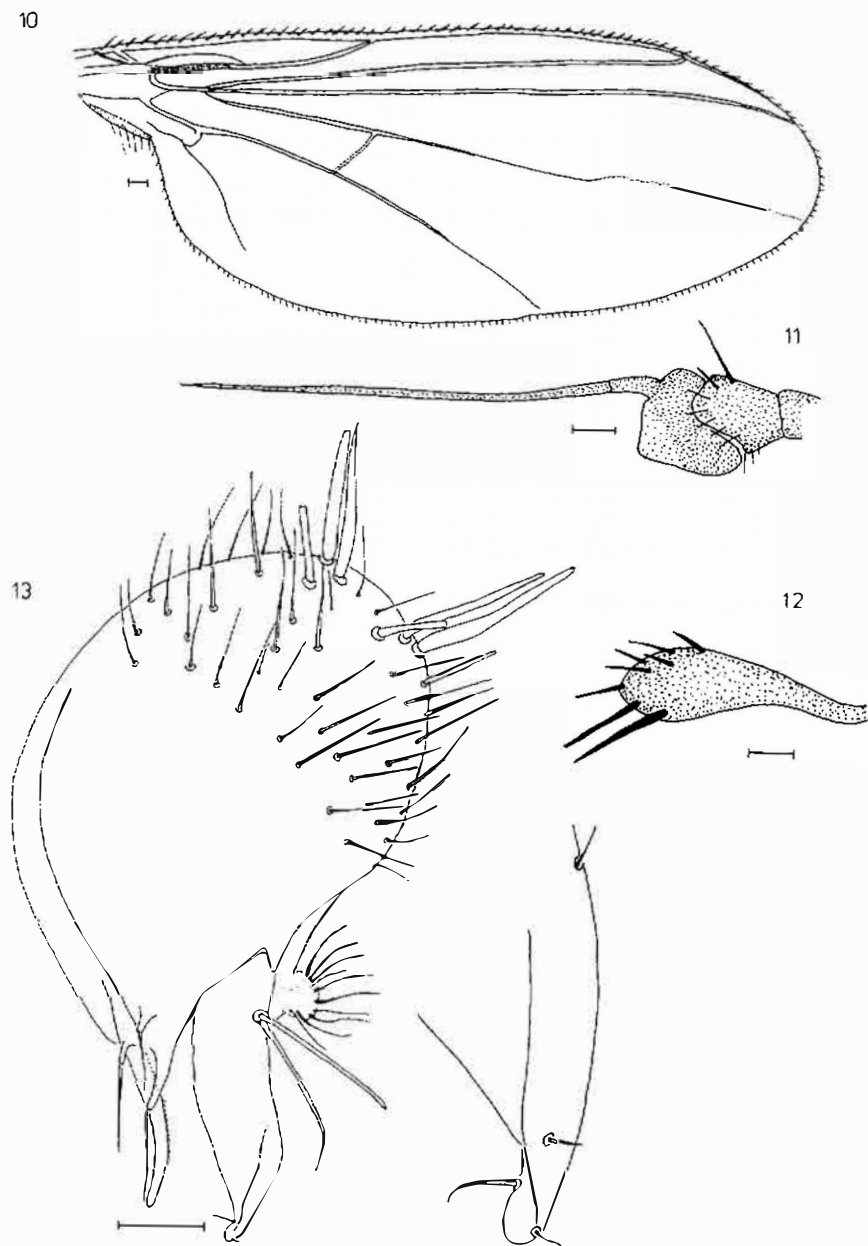
3. *Asyndetus intermedius* n. sp. ♂♀ (Figs 10-13)

A rather large species with hind legs in ♂ entirely black; hind tibiae of ♀ brownish yellow in basal half. All legs of ♂ without claws and with strongly enlarged pulvilli. Clypeus of ♂ very feebly protruding, not reaching lower eye margins; clypeus of ♀ protruding, reaching with its tip to just below eyes. Only fore femora of ♂ with rows of short and weak bristles. Bristles on tibiae of ♂ and ♀ relatively strong. Middle tibia of ♂ and ♀ always with a short ventral bristle much beyond middle.

♂.

Head. Inner eye margins feebly converging downwards. Clypeus very feebly protruding, not clearly separated from epistoma, not reaching downwards to lower eye margins. Frons and face with dark metallic green ground colour. Palpi (Fig. 12) oblong, spatulate, often pointing forward, brownish black, with black hairs and several rather strong bristles of unequal length. Rostrum dark brown. Eyes bare, without shallow incision on outer margins. Occiput with dark metallic green ground colour. 2 strong, diverging ocellars, pointing upwards; 2 equally strong, converging verticals, sloping forwards; 2 very small postocellars; 2 moderately strong, converging postverticals. Upper postocular cilia short, uniseriate, black, not much decreasing in length downwards; from about middle of eye margins onwards cilia gradually increasing in length, white, pluriseriate, without intermingling of black bristles below. *Antennae* (Fig. 11) inserted above middle of head, short, black. First segment longer than deep, bare; second segment conical, with a circlet of short black bristles. Third segment about as long as deep, with a blunt, rather ventral apex. Arista about twice as long as antenna, dorsal, practically bare; basal segment short, slightly inflated.

Thorax, including pleurae, and scutellum with shining dark metallic green ground colour. Acr biseriate, short; 4 dc; humeri with a strong bristle and some hairs; 2 posthumeral, 2 notopleural, 1 sutural, 2 supra-alars, 1 postalar. Scutellum with 2 large marginals, each flanked by a small hair-like bristle. Propleurae with a black bristle and some hairs above it.



Figs 10-13. *Asyndetus intermedius* sp. n. paratype ♂: 10. wing; 11. antenna; 12. palp; 13. hypopygium with detail. Scale: 0.1 mm.

Legs. Coxae and femora black with a metallic green gloss. Trochanters I and II blackish brown, III black. Tips of femora I and II, and whole of tibiae I and II yellow. Tarsi I and II darkened; basal segments indistinctly yellow at bases, gradually darkened towards tips. Tibia and tarsus III black.

Fore leg. Coxa anteriorly and apically with black hairs and black strong bristles. Trochanter with a few hairs. Femur with a row of av and a row of pv, all weak and short, the longest (in the av row) being not as long as diameter of femur; posteriorly a row of slightly stronger bristles, all shorter than diameter of femur. Tibia about as long as femur; a small av near base; 3 dorsal bristles, including a fairly long bristle beyond middle; a small ventral bristle beyond middle; some short apicals. Fifth tarsal segment with a fan of rather long, stiff hairs, and strongly enlarged pulvilli, much longer than the tarsal segment; no claws. Length ratio of tibia and tarsal segments of fore leg (in mm): 0.95: 0.55: 0.2: 0.15: 0.1: 0.125.

Middle leg. Coxa with black hairs and bristles. Trochanter dorsally with a longer and a shorter bristle. Femur anteroventrally with a row of very short hairs; posteroventrally, on basal half with 4 short, thin, hairlike bristles, shorter than diameter of femur; before tip a few not very long av. Tibia slightly longer than femur; 3 rather strong and long ad, preceded by a short bristle; 3 pd, less strong and shorter than the ad; a short, but not weak ventral bristle at about 4/5 from base of tibia; 4 rather strong apicals. Fifth tarsal segment as on fore leg. Length ratio of tibia and tarsal segments of middle leg: 1.2: 0.65: 0.25: 0.2: 0.1: 0.125.

Hind leg. Coxa with a black exterior bristle. Trochanter with a rather long bristle. Femur posteroventrally on basal half with a row of very short hairlike bristles; a few weak av in front of tip (one of them inserted a little higher, giving the impression of a true preapical). Tibia a little longer than femur; 5-7 ad, 4 strong pd; 4 rather long apicals. Fifth tarsal segment as on fore leg. Length ratio of tibia and tarsal segments of hind leg: 1.4: 0.5: 0.4: 0.255: 0.15: 0.125.

Wings (Fig. 10) hyaline, slightly brownish tinged. Costa runs to tip of r4+5. Apical part of m1+2 not interrupted, but very thin and vague from just in front of the two bends unto wing margin; two smooth bends, well beyond middle of apical part of m1+2. Tp oblique, much shorter than apical part of m3+4 (1: 4). m3+4 fading away towards tip, but reaching wing margin. Anal vein short. Halteres pale yellow. Squamae yellowish white, with white cilia.

Abdomen with dark metallic green ground colour. Six visible tergites, all with short black hairs and bristles; no pale hairs at sides of first tergite. Venter blackish brown, with short black hairs and bristles. Sixth tergite not very narrowed downwards. Hypopygium (Fig. 13) brownish black; 4 not very strong macrochetæ. Cerci small, adjacent, dark brown, with very short hairs.

♀.

Head. Clypeus protruding at an obtuse angle to the epistoma; tip of clypeus reaching to just below eyes. Palpi not bristled. Antennae as with the ♂.

Thorax as in ♂.

Legs coloured as in ♂, but tibia III brownish yellow on basal half. Femur I with only anteroventrally a row of short, hairlike bristles; no posteroventral or posterior rows of bristles. Tibia I bristled as in ♂. Femur II with only a few not very long av in front of tip. Tibia II bristled as with the ♂ (including a short ventral bristle), but the middle one of the 3 strong ad short or even missing. Tibia III with 5 ad and 4 pd, all rather strong. All pulvilli very small; claws present on all legs.

Wings as in ♂, but apical part of m1+2 and tip of m3+4 less vague.

Abdomen with 5 visible tergites, all with short black hairs and bristles. Venter brownish black, with very short black hairs and bristles. Genital parts hidden under fifth tergite; each hemitergite with 3 short, blunt black dornen.

Size: Male: length: body: 3.9 - 4.5 mm; wing: 2.7 - 3.3 mm.
Female: length: body: 4.0 - 4.2 mm; wing: 3.0 - 3.1 mm.

Material examined: Holotype male and allotype female: Papua New Guinea, Madang province, Bogia district, Condor Point, 13.III.1992 (leg. P. GROOTAERT). Paratypes: same sample, 3♂♂, 2♀♀; Condor Point, 10-14.V. 1993, 22♂♂, 1♀.

4. *Asyndetus exactus* (WALKER, 1859) ♂ (Figs 14-16)

Chrysotus exactus WALKER, 1859: 116.

Diaphorus nigripalpis DE MEIJERE, 1913: 350.

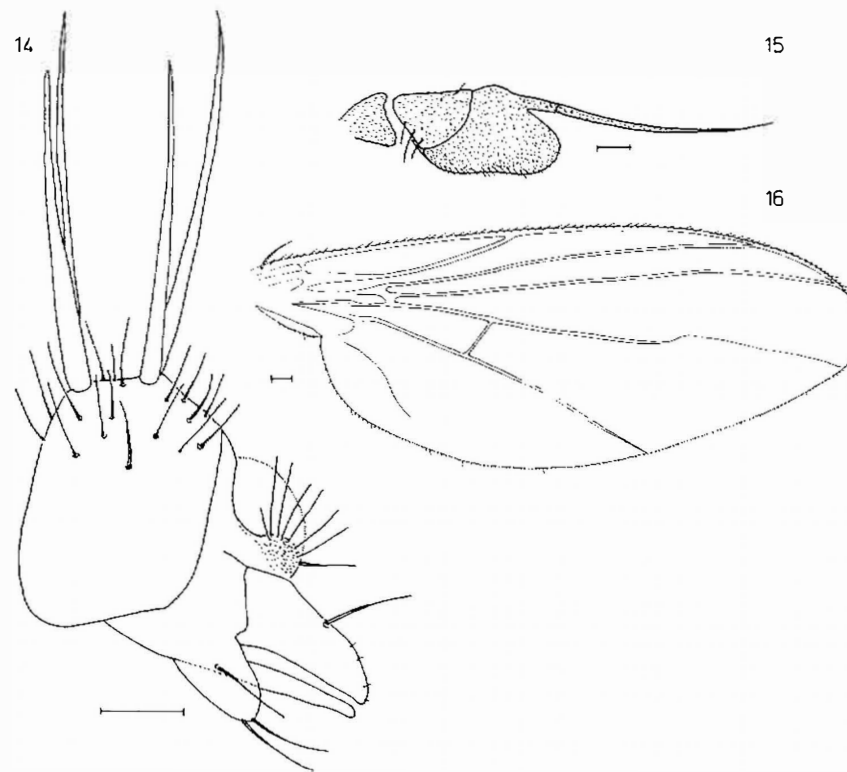
A moderately large species with claws missing only on fore legs. Tibiae and tarsi brownish yellow; all femora ventrally bearing rows of setae.

♂.

Head. Frons with metallic green ground colour, with a shifting brownish grey dusting. Face parallel-sided, shining metallic green. Palpi spatulate, brownish black, with a few black hairs and some black apical bristles of unequal length. Rostrum short, dark brown. Occiput dark metallic green, with a thin brownish grey dusting. Eyes with very short white hairs. Two rather long ocellars, two equally long verticals, two shorter postverticals, two thin, but relatively long postocellars. Postocular cilia short, black, uniseriate above, pluriseriate (and remaining very short) beneath. **Antennae**

(Fig. 15) brownish black, about as long as face. First segment bare; second segment dorsally lengthened, to encompass part of base of the third segment, bearing extremely short bristlets (somewhat longer on ventral side). Third segment oblong with rounded apex, about one and a half times as long as deep, shortly pubescent. Arista dorsal, not much longer than antenna, practically bare; basal arista segment very short.

Thorax and scutellum with metallic green ground colour. Mesonotum and scutellum metallic green, moderately shining as a result of a slight greyish brown dusting, that becomes visible only from certain points of view, mostly so on anterior part of mesonotum. Pleurae less shining, with a shifting greyish dusting. acr biseriata; 5 dc; humeri with a strong bristle, flanked by a hair; 2 posthumeral, 1 sutural, 2 notopleurals, 2 supra-alars, 1 postalar. Scutellum with two large marginals, each preceded by a short bristle. A black propleural bristle.



Figs 14-16. *Asyndetus exactus* WALKER ♂: 14. hypopygium; 15. antenna; 16. wing. Scale: 0.1 mm.

Legs. Coxae brownish black; trochanters somewhat yellowish tinged. Femora dark metallic green; tibiae and tarsi I and II yellowish brown, III brown. [Colour of legs and coxae according to the description of DE MEJERE; colours are faded in the holotype specimen].

Fore leg. Coxa anteriorly with rather long black hairs and bristles. Trochanter with a small ventral bristle. Femur posteriorly with two rows of long dark hairs, increasing in length distally, the longest of which are longer than greatest diameter of femur; ventrally a row of much shorter hairs on basal half. Tibia about as long as femur; 4 pd and 1 dorsal bristle near base, all very short and weak; at tip a few short, weak bristles. Fifth tarsal segment without claws, with moderately enlarged pulvilli. Length ratio of fore tibia and tarsal segments: 0.8: 0.53: 0.2: 0.175: 0.1: 0.13.

Middle leg. Coxa with rather long black hairs and bristles. Trochanter bare. Femur ventrally with a row of weak bristles, the longest of which are slightly longer than diameter of femur; posteroventrally on basal third a few similar bristles. Tibia slightly longer than femur; 2 ad, 2 shorter pd; a circlet of apical bristles. Claws present; pulvilli not enlarged. Length ratio of middle tibia and tarsal segments: 0.85: 0.5: 0.25: 0.15: 0.075: 0.1.

Hind leg. Coxa with a rather long black exterior bristle. Trochanter with a long anterodorsal bristle. Femur antero- and posteroventrally with irregular rows of spaced, thin, weak bristles, some of which are a little longer than diameter of femur. No anterior preapical. Tibia longer than femur, with lengthened hairs all around; 3 ad, 4 pd, all small; a circlet of rather short apicals. Claws present; pulvilli not enlarged. Length ratio of hind tibia and tarsal segments: 1.2: 0.3: 0.35: 0.2: 0.15: 0.1.

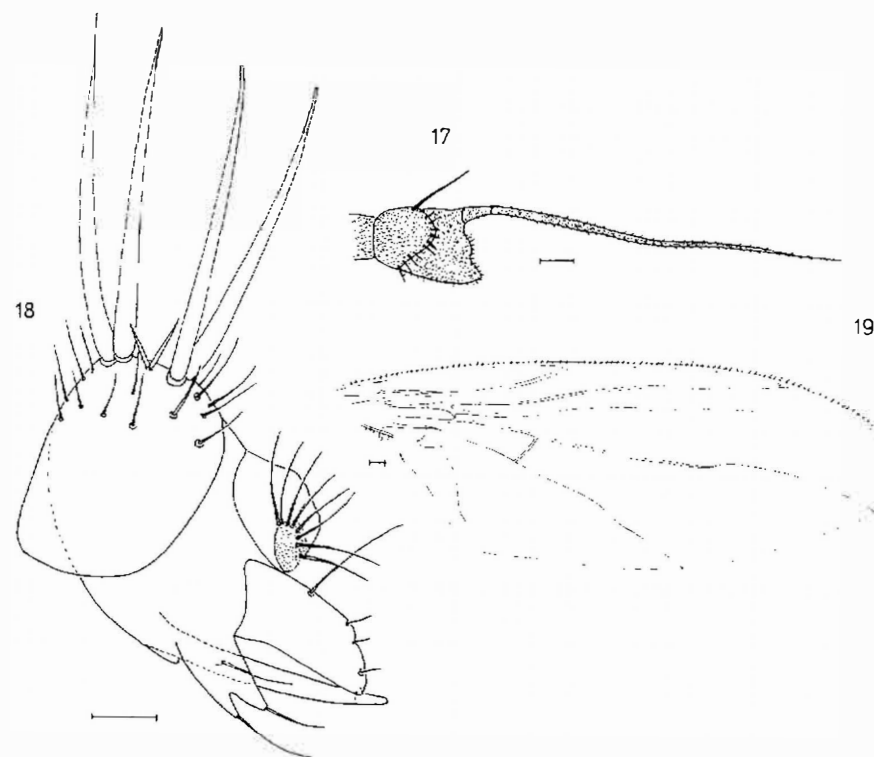
Wings (Fig. 16) tinged brownish, more so anteriorly. Apical part of m1+2 not interrupted, only attenuated, visible throughout. Tp oblique, much shorter than apical part of m3+4. Anal vein distinct, not reaching wing margin. Hindmarginal fringe very short. Halteres yellow; squamae yellow with pale cilia.

Abdomen dark metallic green. Tergites with black hairs and marginal bristles, longest on first and second tergites. Venter with black hairs and bristles. Hypopygium (Fig. 14) hidden; cerci very small, brownish yellow, with short pale hairs. 4 large macrosetae.

Size: length: body: 3.1 mm; wing: 2.5 mm.

Material examined: Holotype ♂ of *Diaphorus nigripalpis* DE MEJERE, 1913, deposited in coll. I.T.Z. Amsterdam and labelled:

- Z.Nieuw Guinea, Lorentz 1905-10, Rivierkamp, 10.II.10.
- *Diaphorus nigripalpis* det. DE MEJERE type
- (red label) HOLOTYPE



Figs 17-19. *Asyndetus acuticornis* DE MEJERE holotype ♂: 17. antenna; 18 hypopygium; 19. wing. Scale: 0.1 mm.

5. *Asyndetus acuticornis* (DE MEJERE, 1913) ♂ (Figs 17-19)

Diaphorus acuticornis DE MEJERE, 1913: 350.

A smaller species, with pale yellow palpi. Tibia III largely yellow. Legs of ♂ without claws; pulvilli of fore legs in ♂ much more enlarged than on posterior four legs. All femora in ♂ ventrally with rows of bristles; no ventral bristle on tibia II. Vein m1+2 thin, but not interrupted.

♂.

Head. Face below antennae practically parallel-sided. Clypeus slightly protruding, not reaching down to lower eye margin. Frons and face covered with a whitish-grey dusting. Palpi oblong, ovaloid, with a narrow base (spatulate), pointing forward, yellowish white, bearing several short black bristles of unequal length. Rostrum dark brown, short. Eyes bare; outer eye margin without shallow incision. Occiput with shining blackish-green ground colour and weakly dusted. Two strong diverging ocellars, pointing

upwards; two equally strong verticals, converging, sloping forward; two small postocellars about half as long as ocellars; two moderately strong, converging postverticals. Upper postocular cilia rather short, black, not growing shorter downwards; from about middle of outer eye margin downwards there is a row of black bristles becoming longer and thinner downwards; behind this row, numerous thin white bristles form whiskers. *Antennae* (Fig. 17) inserted above middle of head, rather short, black. First segment rather narrow, bare; second segment conical, with a circlet of short black bristles. Third segment about as long as deep, with a ventral rather acute apex. Arista dorsal, about twice and a half as long as antenna, practically bare; basal segment very short, slightly swollen at base.

Thorax, including pleurae and scutellum, with shining dark metallic ground colour. Seen from in front with a white dusting along the sides of mesonotum and on humeri. Pleurae with a rather thick whitish-grey dusting. *Acr* biseriate, not very short, as long as basal antennal segments; 4 *dc*; humeri with a strong bristle and a probably short bristly hair (broken in type); 2 posthumeral, 2 notopleural, 1 sutural, 2 supra-alars, 1 postalar. Scutellum with 2 large marginals, each flanked by a short hair. No distinct propleural bristle.

Legs. Coxae and femora black with a metallic green gloss; coxae with a greyish dusting. Trochanters I and II brown, III black. Extreme tips of all femora yellow, more so on anterior four femora. All tibiae yellow but tibia III gradually and feebly browned from about middle. Tarsus I yellow. Tarsus II dark brown with base of first segment yellowish. Tarsus III entirely dark.

Fore leg. Coxa anteriorly and apically with black bristles and hairs of unequal length. Trochanter with a distinct ventral hair and one or two very small hairs. Femur with a row of thin *av* bristles on basal three quarters, the bristles near base as long as femur is broad, apically becoming shorter; and a row of long thin *pv*, all longer than diameter of femur; posteriorly an irregular row of short hairlike bristles. Tibia about as long as femur; dorsally near base a pair of small, weak bristles (about as long as diameter of tibia); three short dorsal bristles. Some short apical bristles. Second, third and fourth tarsal segments laterally flattened. Fifth segment with a fan of rather long bristly hairs; pulvilli whitish yellow, much enlarged (much longer than fifth tarsal segment); no claws. Length ratio of tibia and tarsal segments of fore leg (in mm): 0.7: 0.3: 0.12: 0.1: 0.075: 0.1.

Middle leg. Coxa with black hairs and bristles. Trochanter with a few short and weak bristles and a distinct ventral bristle. Femur with a row of black *av*, all rather long (about as long as greatest diameter of femur). Posteroventrally with a few long bristles of unequal length. Tibia about as long as femur; 2 *ad*, preceded by a very small bristle; 3 slightly shorter *pd*; short apicals. Fifth tarsal segment without claws; pulvilli as long as fifth segment. Length ratio of tibia and tarsal segments of middle leg: 0.75: 0.4: 0.15: 0.1: 0.075: 0.1.

Hind leg. Coxa with a black exterior bristle. Trochanter with a rather long dorsal bristle. Femur with an irregular row of ventral bristles of unequal length (the longest one longer than diameter of femur), and no posteroventral row, only one fine *pv* bristle near base; in front of tip two not very strong anteroventrals; no real preapical bristle. Tibia a little longer than femur; 4 *ad*, 4-5 *pd*, all rather short; 4 rather short apicals. Fifth segment of tarsus as on second leg. Length ratio of tibia and tarsal segments of hind leg: 0.95: 0.25: 0.2: 0.15: 0.1: 0.12.

Wings (Fig. 19) hyaline, slightly brownish tinged. Costa runs to tip of *r4+5*. Vein *m1+2* from base on thinner than other veins; apical part of *m1+2* not interrupted, but smoothly bent just beyond its middle. *tp* slightly oblique, much shorter than apical part of *m3+4* (about 1: 5); *m3+4* reaches wing margin. Anal vein not reaching wing margin. Halteres yellow. Squamae yellowish white, with white cilia.

Abdomen with six visible tergites, with dark metallic green ground-colour; seen from the rear a silvery-white dusting is visible. Hairs and bristles on all tergites (including first tergite) moderately short, black; no pale hairs on sides of first tergite. Venter brownish black with black hairs and bristles. Sixth segment downwards not narrowed, encompassing base of hypopygium. *Hypopygium* (Fig. 18) brownish black, with 4 strong macrochaetae. Cerci very small, adjacent, brownish yellow, with short dark hairs.

Size: length: body: 3 mm; wing: 2.4 mm.

Material examined: Lectotype male labelled: Z. Nieuw Guinea, Lorentz, Alkmaar 2.II.10; *Diaphorus acuticornis* det. DE MEIJERE; type; (purple label) lectotype. 1♀ paralectotype with same data as lectotype; 1♂ from same locality as lectotype but date 3.II.10; 1♀ perhaps also belonging to the type series with label "Holl. Nieuw Guinea Lorentz" (hand-written). All in coll. I.T.Z. Amsterdam.

6. *Asyndetus obscurus* n.sp. ♂♀ (Figs 20-22)

A small species with entirely dark legs (the ♀ specimen seems to be tenuous, and has all legs rather uniformly coloured brownish to yellowish brown; pleurae and base of abdomen also have a brownish hue). All legs of ♂ without claws, pulvilli moderately enlarged. Apical part of *m1+2* not broken, but very attenuated, nearly fading away on its bend. Legs weakly bristled.

♂.

Head. Frons and face with dark metallic green ground colour (dusted?). Face about one and a half times as wide as depth of third antennal segment. Palpi dark brown, with short black bristly hairs and a short black apical bristle. Rostrum dark brown. Occiput with dark metallic green ground colour. 2 ocellars, 2 verticals, 2 very short postocellars, 2 post-

verticals. Upper postocular cilia short, uniseriate, black; lower postocular cilia longer, thin, pluriseriate, white. *Antennae* (Fig. 20) short, black. First segment bare; second segment with a cirlet of very short bristles. Third segment deeper than long, trapezoid with rounded, ventral apex. Arista dorsal, very shortly pubescent, more than one and a half times as long as antenna; basal arista segment shorter than length of third antennal segment.

Thorax and scutellum with dark metallic green ground colour, shining, with coppery reflections. *Acr* very short, biseriata; 4 dc; humeri with a large bristle and two very short, thin hairs. Scutellum with two marginals. A black, short and weak propleural bristle.

Legs and coxae entirely dark, but trochanters I and II, and all tibiae and tarsi slightly more brownish (blackish brown).

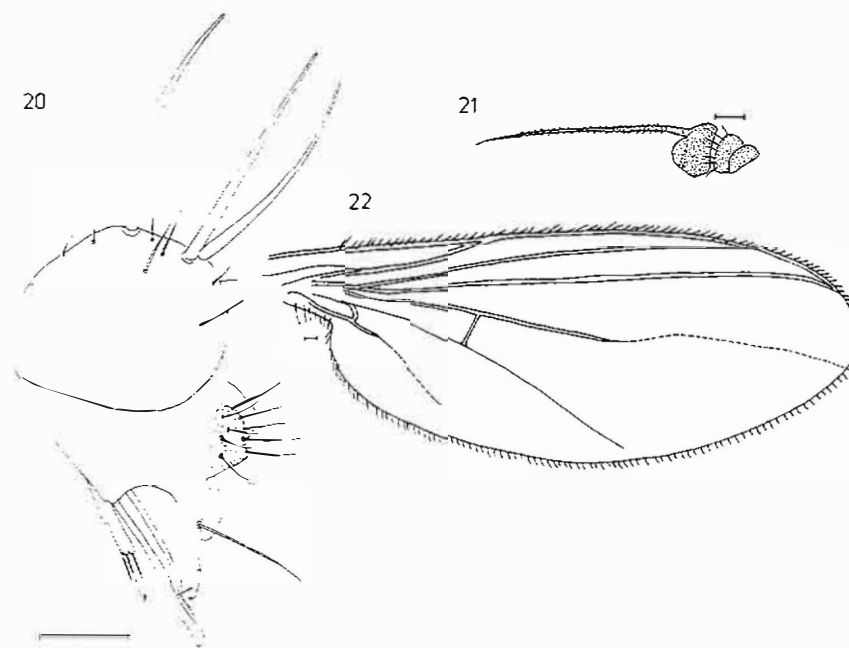
Fore leg. Coxa with short black hairs; near apex some short black bristles. Trochanter with a tiny ventral hairlet. Femur posteriorly with a row of short, weak, hairlike bristles, all shorter than diameter of femur; postero-ventrally near apex 2-3 short, weak hairlike bristles. Tibia about as long as femur; 3 very short dorsal setulae; a few short apicals. No claws; pulvilli moderately enlarged. Length ratio of fore tibia and tarsal segments: 0.55: 0.325: 0.15: 0.09: 0.05: 0.09.

Middle leg. Coxa with black hairs and a few black bristles. Trochanter anteriorly with two bristles. Femur near apex with an av (about as long as greatest diameter of femur). Tibia slightly longer than femur; 2 ad, 2 pd, all very short; some fairly long apicals. No claws; pulvilli moderately enlarged. Length ratio of middle tibia and tarsal segments: 0.7: 0.375: 0.165: 0.09: 0.05: 0.09.

Hind leg. Coxa with a black exterior bristle. Trochanter with a thin anterior bristle. Femur with only a weak and short preapical av; no real anterior preapical. Tibia a little longer than femur; 3 short, weak dorsal setulae; a few apicals. No claws; pulvilli moderately enlarged. Length ratio of hind tibia and tarsal segments: 0.8: 0.25: 0.25: 0.14: 0.075: 0.09.

Wings (Fig. 22) hyaline. Apical part of m1+2 very attenuated soon after tp, nearly fading away on its bend just beyond middle, reaching wing margin. Tp straight, much shorter than apical part of m3+4. Anal vein distinct, not very long. Halteres yellowish white. Squamae yellow, with pale cilia.

Abdomen with dark metallic green ground colour; venter dark brown. Tergites with short black hairs and bristles. Sternites with short black hairs and bristles; on second sternite two pairs of longer bristles. Hypopygium (Fig. 21) small, blackish brown, with 4 macrochetae. Cerci small, adpressed, dark, with short, erect, pale hairs.



Figs 20-22. *Asyndetus obscurus* sp. n. holotype ♂: 20. antenna; 21. hypopygium; 22. wing. Scale: 0.1 mm.

♀.

Head. Face a little wider than in ♂.

Legs. For the colour see the diagnosis. Claws present on all legs, pulvilli not enlarged. Legs bristled and haired as in ♂, but bristles on tibiae slightly longer and stronger; on hind tibia two rather long ad, and 2-3 very short pd.

Wings as in ♂.

Abdomen. Genital parts with 6 dornen (the two middle dornen the longest).

Size: Male: length: body: 2.1 mm; wing: 1.85 mm.

Female: length: body: 1.9 mm; wing: 1.75 mm.

Material examined: Holotype: ♂: Papua New Guinea, Madang province, Bogia district, Awar village (near beach and river), 3.V.1982 (leg. P. GROOTAERT, sample n° 1028). Allotype ♀: Papua New Guinea, Madang province, Boroi river (near Bak), 17.VI.1982 (leg. P. GROOTAERT, sample n° 1344).

Discussion. By its small size and its uniformly dark coloured legs distinguished from other species that have no claws and unbroken m1+2.

7. *Asyndetus fractus* DE MEIJERE, 1913 ♀ (Figs 23-24).

Asyndetus fractus DE MEIJERE, 1913: 349.

A small species with apical part of m1+2 broken up into two pieces. Legs with black femora and yellow tibiae.

♀.

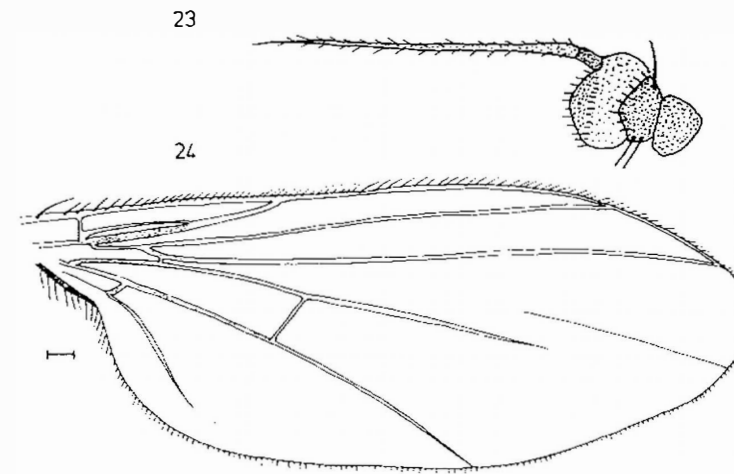
Head. Frons with metallic green ground colour, with rather thin yellowish grey dusting. Face only a little narrower than frons, with metallic green ground colour and a heavy whitish dusting. Palpi brown, with thin whitish dusting, bearing rather short brownish yellow hairs, without bristles. Rostrum blackish brown, with yellowish hairs. Occiput metallic green, with a slight whitish dusting. Eyes with very short white pubescence. 2 long ocellars, 2 equally long verticals, 2 very small postocellars, 2 rather short postverticals. Upper postocular cilia uniseriate, black; lower postocular cilia pluriseriate, partly white, partly yellowish. *Antennae* (Fig. 23) short, blackish brown. First segment bare; second segment short, cup-shaped, with a circle of short bristles; third segment much deeper than long, rounded. Arista dorsal, very shortly pubescent, about 2 1/2 times as long as antenna; basal arista segment very short, shorter than third antennal segment.

Thorax and scutellum with metallic green ground colour; mesonotum not very shining, as a result of a thin, shifting brownish grey dusting; pleurae with a shifting whitish dusting. Acr biseriate; 4 dc; humeri with a large bristle and two minute hairs; scutellum with two large marginals, each flanked by a very small hair; a black propleural bristle.

Legs. Coxae dark, but coxa I exteriorly yellowish towards tip. Femora dark (dark green according to DE MEIJERE, colours faded in the holotype specimen); tips of femora I and II yellow. Tibiae yellow. Tarsi I and II darkened from tips of metatarsi onwards; tarsus III entirely dark.

Fore leg. Coxa with black bristles. Trochanter ventrally with a short hair. Femur posteroventrally in front of tip with three short bristles. Tibia about as long as femur; 1 dorsal bristle near base, 3 pd, all very short and weak; a circling of very short apicals. Length ratio of fore tibia and tarsal segments: 0.7: 0.4: 0.125: 0.1: 0.06: 0.08.

Middle leg. Coxa anteriorly with short black hairs near apex, and some rather long black bristles. Trochanter anteroventrally with two rather long bristles. Femur anteriorly in front of tip with two very short bristles; 1 ventral bristle on apical fifth; posteroventrally near tip 3 short and weak bristly hairs. Tibia about as long as femur; 2 ad, 3 shorter pd; a circling of apicals. Length ratio of middle tibia and tarsal segments: 0.8: 0.5: 0.22: 0.15: 0.07: 0.06.



Figs 23-24. *Asyndetus fractus* DE MEIJERE holotype ♀: 23. antenna; 24. wing. Scale: 0.1 mm.

Hind leg. Coxa with a black exterior bristle. Trochanter exteriorly with a long, but rather thin bristle. Femur with an anteroventral preapical; no anterior preapical. Tibia longer than femur; 4 ad, 4 pd; a circling of apicals. Length ratio of hind tibia and tarsal segments: 1.1: 0.32: 0.32: 0.25: 0.11: 0.1.

Wings (Fig. 24) hyaline, very slightly brownish tinged. Apical part of m1+2 attenuated, broken up into two pieces beyond its middle; the two pieces overlap and run parallel at the spot of breaking. Tp much shorter than apical part of m3+4. Anal vein distinct, fairly long, but not reaching wing margin. Halteres yellow. Squamae yellow, with white cilia.

Abdomen metallic green, with a shifting greyish white dusting on sides. Tergites with short black hairs and marginal bristles. Sternites dark brown, with short black and pale hairs. Genital parts hidden.

Size: length: body: 2.1 mm; wing: 2.2 mm.

Material examined: Holotype ♀ deposited in coll. I.T.Z. Amsterdam and labelled:

- Z.Nieuw-Guinea Lorentz 1909-10 Alkmaar 3.II.10
- *Asyndetus fractus* det. DE MEIJERE Type
- [red label] HOLOTYPE

8. *Asyndetus eurytarsus* n.sp. ♂♀ (Figs 25-29).

A large species, with claws missing only on fore legs; wing with m1+2 widely interrupted. Fore tarsus of ♂ with widened segments.

♂.

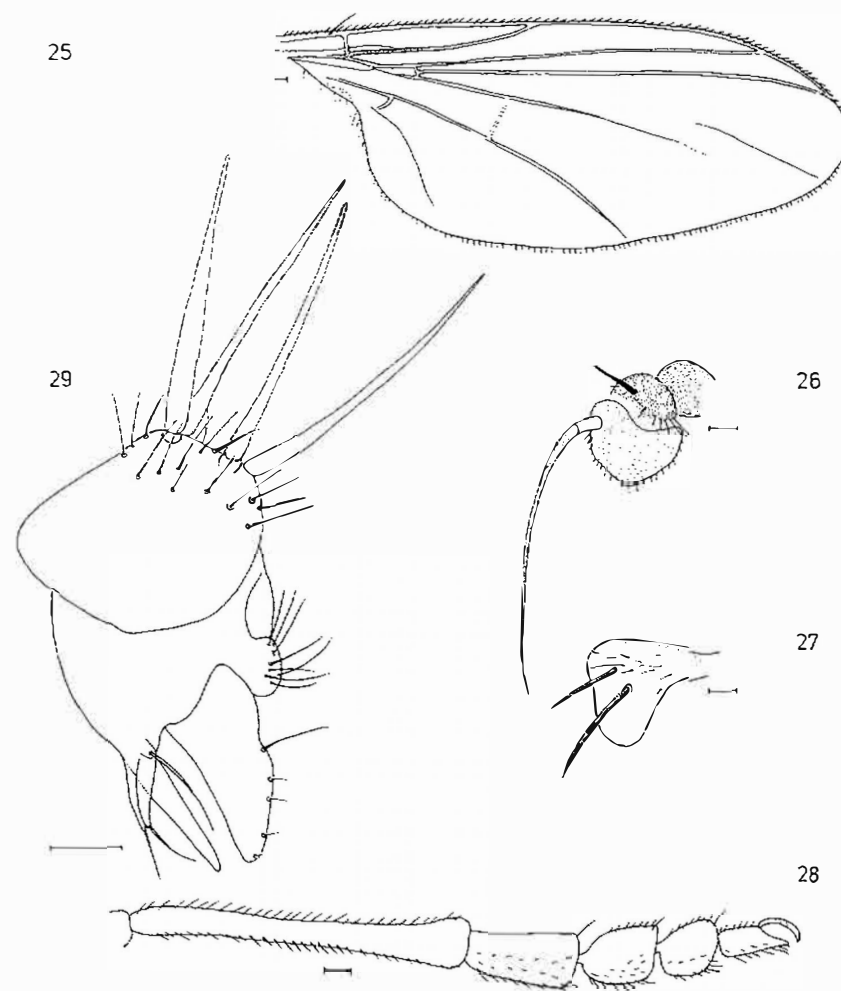
Head. Frons and face with straight side margins, evenly narrowing downwards (ratio of width at level of ocelli and width above palpi 8: 5). Frons with coppery green ground colour, moderately shining. Face with coppery green ground colour, slightly more shining, above palpi about one and a half times as wide as depth of third antennal segment. Palpi (Fig. 27) yellow, with short black hairs and 3 short black bristles of unequal length. Rostrum dark brown. Occiput metallic green, moderately shining. Eyes shortly pubescent. 2 ocellars, 2 verticals, 2 small postocellars, 2 postverticals, stronger than, and not in row with uppermost postoculars. Postocular cilia uniseriate, short and black above, pluriseriate, long, soft and pale below, forming whiskers. **Antennae** (Fig. 26) short, black; third segment brownish dorsally. First segment bare; second segment with a circlet of short black bristles. Third segment crescent-shaped or reniform, wider than long, shortly pubescent. Arista dorsal, yellowish, practically bare, not very long; basal segment short.

Thorax (including pleurae) and scutellum with shining metallic green ground colour and coppery reflections. Acr biseriate (only four pairs), not very short; 5 dc; 1 humeral and 2 short setulae beneath it; 1 posthumeral; 2 notopleurals; 1 presutural, 1 sutural, 1 intra-alar, 2 supra-alar; scutellum with 2 large marginals, flanked each by a small bristlet and 2 very small setulae; prothoracic collar with a row of short black bristles; 1 short bristle in front of anterior spiracle; 1 downward pointing propleural bristle and above it a bristly hair. Pleurae bare.

Legs. All coxae, trochanters and femora blackish brown to black; fore coxae interiorly and at apex, trochanters I, and base of femur I slightly lighter coloured (brownish); femora II and III with a metallic green lustre. Tips of femora I and II yellow. Tibia I and whole of tarsus I yellow; tibia II yellow, tarsus II gradually darkened from tip of metatarsus onwards; tibia III yellow, gradually darkened in its apical fourth; tarsus III blackish brown.

Fore leg. Coxa anteriorly rather densely set with black hairs and bristles, some of which are a little longer than diameter of coxa. Trochanter ventrally with some short black hairs and a short black bristlet. Femur with several rows of rather short and thin black bristles (2 posterior rows, 1 posteroventral row, and 1 anteroventral row; last two rows consisting of bristles that are about as long as diameter of femur or even slightly longer). Tibia a little longer than femur; 1 very short and weak dorsal bristlet near base; 4-5 very short pd; a few short apicals. Tarsus: first segment gradually widening in its apical third; segments 2-5 widened and flattened

(Fig. 28): second segment about twice as long as broad; third segment only a little longer than broad; fourth segment about as long as broad. From tip of metatarsus onwards all hairlets and spinules are pale (whitish and yellowish brown). Pulvilli somewhat enlarged; no claws. Length ratio of fore tibia and tarsal segments (measures relative, not in mm): 23: 12: 5: 3: 2: 3.



Figs 25-29. *Asyndetus eurytarsus* sp. n. holotype ♂: 25. wing; 26. antenna; 27. palp; 28. fore tarsi; 29. hypopygium. Scale: 0.1 mm.

Middle leg. Coxa anteriorly densely set with black hairs and bristles; 1 large exterior bristle. Trochanter bearing 2 rather strong bristles. Femur ventrally with a row of black bristles of about equal length, but growing stronger towards tip of femur (near base the bristles are a little shorter), hardly shorter than greatest diameter of femur; anteriorly and posteriorly on apical third longer hairs, becoming bristlelike near apex of femur. Tibia a little longer than femur; 3 ad, preceded by a small bristlet near base; 4 rather small pd; posteroventrally a row of small black spinules; a few apical bristles. Length ratio of middle tibia and tarsal segments: 25: 14: 7: 4: 2: 2.

Hind leg. Coxa with a black exterior bristle. Trochanter with a rather long anterodorsal bristle and some tiny ventral hairs. Femur ventrally with a row of short and thin bristles, shorter than diameter of femur; anteroventrally near tip 3 bristles of unequal length; no real preapical bristle. Tibia longer than femur (32: 27); 4 ad, about 6 pd, all short; ventrally no real bristle; some short apicals. Length ratio of hind tibia and tarsal segments: 32: 9.5: 9: 6: 3.5: 2.5.

Wings (Fig. 25) hyaline, very slightly tinged brownish, broadest near base (like a *Diaphorus* wing). Costa ends at apex of r4+5. r4+5 practically straight until shortly before its end, where it curves evenly downwards. m1+2 widely interrupted at about two thirds of its length from tp; apical fragment very thin, fading away near wing margin, its starting point separated from end of basal section by a distance greater than half length of tp. Tp straight, at right angles with m1+2 and m3+4, much shorter than apical part of m3+4 (about 1: 4). Anal vein well developed, not reaching wing margin. Hindmarginal fringe short. Halteres yellow. Squamae whitish, with pale cilia.

Abdomen with shining metallic green ground colour, more coppery on second and following segments, bearing rather long black hairs and bristles. **Hypopygium** (Fig. 29) small, brownish black; 3 black macrochetæ (1 broken off?); cerci very small, yellowish, with soft brown hairs.

♀.

Head. Frons and face not wider than in ♂. Clypeus protruding in its apical part. Palpi dark brown with short black hairs and 2 very short black bristles. Antennae as with the ♂, but arista dark.

Legs. Fore tarsus simple, gradually and feebly darkened towards tip; pulvilli not enlarged, claws present. On all femora the rows of bristles present in ♂ are missing. On fore femur only posteroventrally near tip a few short hairlike bristlets; middle femur with 3 av near apex and somewhat longer hairs along ventral side. Hind femur has only the 3 av near tip. Fore tibia with only 3 short pd and the small dorsal bristlet near base. Middle tibia without the ventral row of small spinules.

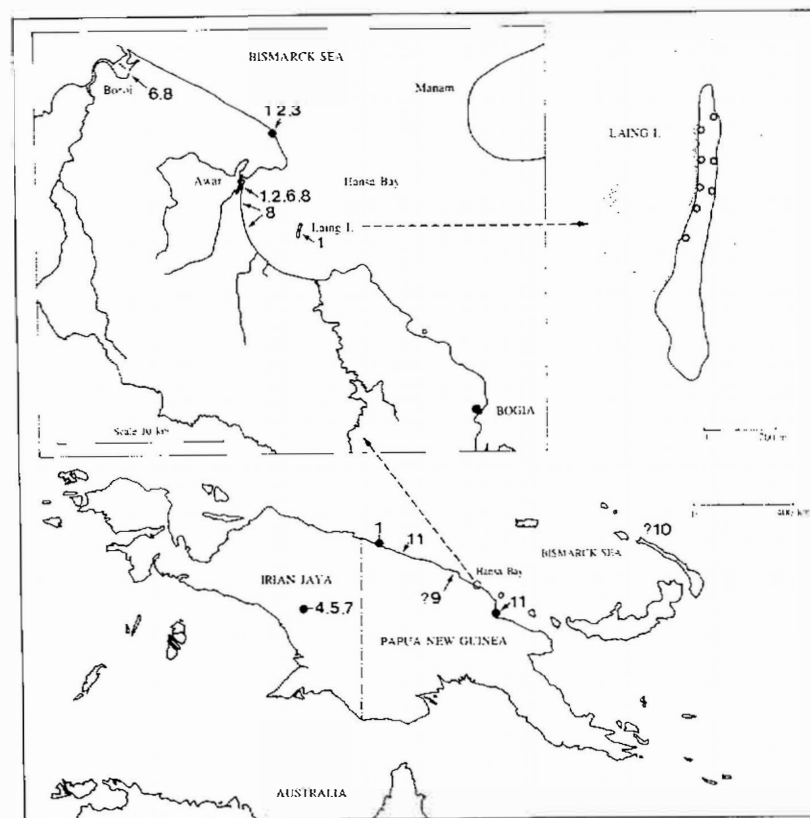


Fig. 30. Distribution of the genus *Asyndetus* in New Guinea with detail of Hansa bay and distribution of *A. porrectus* on Laing I.. 1. *A. porrectus*; 2. *A. vicinus*; 3. *A. intermedius*; 4. *A. exactus*; 5. *A. acuticornis*; 6. *A. obscurus*; 7. *A. fractus*; 8. *A. eurytarsus*; 9. *A. brunnicosus*; 10. *A. latitarsatus*; 11. *A. lichtwardti*.

Wings of the normal type, not broadest near base; venation as with the ♂.

Abdomen unicolorous; hairs and bristles much shorter than in ♂. Genital parts with a horizontal row of 6 yellowish brown to dark brown dornen of unequal length (the outer ones are shortest, the middle ones longest).

Size: Male: length: body: 4.1 mm; wing: 3.4 mm.

Female: length: body: 4.0 - 4.9 mm; wing: 3.2 - 3.6 mm.

Material examined: *Holotype* ♂: Papua New Guinea: Madang province, Bogia district, Awar Village, 3.VI.1982 (leg. P. GROOTAERT, sample n° 1181). *Paratypes*: Madang province, Bogia district, Nubia village (near river in mangrove, light trap), 6.VII.1981, 1♀ (leg. J. VAN GOETHEM,

sample n° 81-446); Nubia village, Malaise trap near river, 1.VII.1981, 2♀ (leg. J. VAN GOETHEM, sample n° 81.414); Sisimangum village, (near bridge, light trap), 15.VI.1979, 1♀ PNG (leg. J. VAN GOETHEM, sample n° 1979/338); Boroï river (sweep netting of vegetation along river near village Bak), 17.VI.1982, 1♀ (leg. P. GROOTAERT, sample n° 1344).

Discussion. Seems to be a near relative of *A. latitarsatus* BECKER, 1922, described from the Bismarck Archipelago, that also has widened, yellow fore tarsi. BECKER's species however is much smaller (2.5 mm), has a broader face (2-3 times as broad as depth of third antennal segment), only 4 dc, third antennal segment of ♂ reddish brown, middle tarsus entirely dark, and fore tarsi even more broadened (segments 2-4 all nearly quadrate).

Check list of the *Asyndetus* species known from New Guinea

- A. acuticornis* (DE MEIJERE, 1913) [*Diaphorus*] (♂♀) - Irian Jaya, Alkmaar (type loc.).
- A. brunnicosus* BECKER, 1922 (♀) - Papua New Guinea, Minjem river (type loc.).
- A. eurytarsus* n.sp. (♂♀) - Papua New Guinea, Bogia district, Awar (type loc.).
- A. exactus* (WALKER, 1859) [*Chrysotus*] [syn.: *Diaphorus nigripalpis* DE MEIJERE, 1913] (♂♀) - Irian Jaya, rivierkamp Lorentz river, type loc. of *A. nigripalpis*].
- A. fractus* DE MEIJERE, 1913 (♀) - Irian Jaya, Alkmaar (type loc.).
- A. intermedius* n.sp. (♂♀) - Papua New Guinea, Bogia district, Condor Point (type loc.).
- A. latitarsatus* BECKER, 1922 (♂♀) - Bismarck Archipelago, Batum (type loc.).
- A. lichtwardti* KERTÉSZ, 1901 (♀) - Papua New Guinea, Erima in Astrolabe bay (type loc.); Seleo, Berlinhaven (= Aitape).
- A. obscurus* n.sp. (♂♀) - Papua New Guinea, Bogia district, Awar (type loc.).
- A. porrectus* PARENT, 1939 (♂♀) - Papua New Guinea, Vanimo (type loc.).
- A. vicinus* n.sp. (♂♀) - Papua New Guinea, Bogia district, Condor point (type loc.).

Key to the *Asyndetus* of New Guinea.
(Partly based on BECKER, 1922: 82-83).

♂♂

- 1 - Apical part of m1+2 broken up in two parts, that partly run parallel to each other 2
- Apical part of m1+2 not broken up, only attenuated, often very faded 3

- 2 - 4 dc. Fore tarsus strongly broadened, segments 2-4 all nearly quadrate. Rather small species (2.5 mm) *A. latitarsatus* BECK.
 - 5 dc. Fore tarsus less strongly broadened, segment 2 about twice as long as broad, segment 3 a little longer than broad. Large species (4,1 mm) *A. eurytarsus* n.sp.
 - 3 - Claws present on hind and middle legs; fore legs without claws and with enlarged pulvilli. Lower postocular cilia black. Moderately large species (3.1 mm) *A. exactus* (WALK.)
 - All legs without claws; pulvilli of all legs equally large. Lower postocular cilia pale 4
 - 4 - Palpi pale yellow. Fore tarsus entirely yellow, with 2nd, 3rd and 4th segments slightly widened. Pulvilli of fore legs much more enlarged than pulvilli of posterior four legs. Moderately large species (3 mm) *A. acuticornis* (MEIJ.)
 - Palpi dark. Fore tarsus largely dark, not widened. Pulvilli of all legs about equally large 5
 - 5 - Legs uniformly dark coloured. Small species (2,1 mm) *A. obscurus* n.sp.
 - Legs not uniformly coloured, partly yellow. Larger species (3-4 mm) 6
 - 6 - Pulvilli of all legs slightly shorter than fifth tarsal segments. Large species (4 mm) *A. porrectus* PAR.
 - Pulvilli of all legs much longer than fifth tarsal segments 7
 - 7 - All femora ventrally with rows of bristles. Moderately large species (3 mm) *A. vicinus* n.sp. (♂)
 - Only fore femora ventrally with rows of short bristles. Large species (4 mm) *A. intermedius* n.sp.
- ♀♀
- 1 - Apical part of m1+2 broken up in two parts, that partly run parallel to each other 2
 - Apical part of m1+2 not broken up, only attenuated, often very faded 5
 - 2 - Legs entirely dark. Rather small species (2.5 mm) *A. lichtwardti* KERT.
 - Legs partly yellow 3
 - 3 - All tarsi entirely dark. Rather small species (2,5 mm) *A. latitarsatus* BECK.
 - Fore and middle tarsi partly yellow 4
 - 4 - 4 dc. Middle tibia with 2 ad and 3 pd. Small species (2,1 mm) *A. fractus* MEIJ.
 - 5 dc. Middle tibia with 3 ad and 4 pd. Large species (4-4,9 mm) *A. eurytarsus* n.sp.

- 5 - Legs uniformly dark coloured. Small species (2 mm)
 *A. obscurus* n.sp. 6
 - Legs not uniformly coloured, partly dark, partly yellow 6
- 6 - Hind tibiae yellow on at least basal half 7
 - Hind tibiae entirely dark 8
- 7 - Middle tibia with a short ventral bristle. Clypeus less protruding,
 reaching down to just below eyes. Large species (4 mm)
 *A. intermedius* n.sp. 8
 - Middle tibia without ventral bristle. Clypeus strongly protruding,
 reaching down much below eyes. Rather large species (3.3 mm)
 *A. vicinus* n.sp. 8
- 8 - Wings distinctly browned. Fore tarsi entirely dark. Large species (4
 mm) *A. brunnicosus* BECK. 9
 - Wings hyaline, at most slightly browned. Fore tarsi with yellow
 base 9
- 9 - Third antennal segment triangular, pointed. Rather small species (3
 mm) *A. acuticornis* (MEIJ.) 9
 - Third antennal segment squarish, with a rather acute ventral apex.
 Large species (3.5-4.25 mm) *A. porrectus* PAR. 9

General discussion

The eleven species of *Asyndetus* of New Guinea can be divided into two major groups. A first group has a complete vein m1+2 which may be less sclerotized at the level of the median bent or in the apical section. A plesiomorphic state which is also present in *Diaphorus*. The second group has the vein m1+2 distinctly interrupted in the middle and the basal and apical section run parallel for a short distance. The latter state is probably the derived condition. Unfortunately three of the eleven species are known only from the female sex hence it is difficult to state if there is a definite link with the secondary sexual characters such as the yellow palpi, loss or presence of claws and long pulvilli and the flattened apical tarsal segments on the fore legs.

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