

# A revision of the spider genus *Orthrus* (Araneae : Salticidae)

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## Introduction

The genus *Orthrus* Simon 1900, known only from Borneo and the Philippines, is comprised of three known species, two of which are described here as new. The genus was formerly placed in the salticid subfamily Lyssomaninae on account of somatic similarities with *Asemonea* Simon and *Onomastus* Simon. Furthermore, *Orthrus* and *Onomastus* were considered to form a link between lyssomanines and ordinary salticids "Les genres *Onomastus* et *Orthrus* font le passage des *Asemonea* aux Salticides ordinaires" (Simon, 1901). *Onomastus* and *Asemonea*, which are at present being revised by the author, evidently belong in the Lyssomaninae, but *Orthrus* shows no close affinities with lyssomanine spiders. Galiano (1976) in a review of lyssomanine genera also expressed doubts about the systematic position of *Orthrus* and, unfortunately, its affinities with other salticid subfamilies is uncertain as the genitalia are relatively simple and of the kind often found within the family.

Although the biology of *Orthrus* species is poorly known, they are considered to be active spiders which hunt their prey over vegetation. In some respects they resemble lyssomanines: females and juveniles of *O. muluensis* sp. n., are green in life and have been collected from the underside of leaves, a habitat often frequented by New World Lyssomanines. Curiously, nothing appears to have been published on the habitat or behaviour of Old World species.

The measurements were made in the manner described by Wanless (1978), but for the leg spination the system adopted is that used by Platnick & Shadab (1975).

## Genus *ORTHRUS* Simon

*Orthrus* Simon, 1900 : 28. Type species *Orthrus bicolor* Simon, by original designation and monotypy. Simon, 1901 : 395, 398, 400. Petrunkevitch, 1928 : 181. Roewer, 1938 : 78, 1954 : 932. Bonnet, 1958 : 3215. Galiano, 1976 : 60, 66, 67.

**DEFINITION.** Small to medium spiders ranging from about 3·8 to 4·8 mm in length. Species sexually dimorphic, males with porrect, elongate chelicerae and sometimes with distinct colour markings; not hirsute, but fringes often present on male palps and legs I. *Carapace*: moderately high, longer than broad, fovea moderately long, positioned just behind posterior lateral eyes; microsculpturing not marked; cuticle weakly iridescent (under some angles of illumination). *Eyes*: with black surrounds except anterior medians, surrounds sometimes edged in whitish or pale yellow guanin; anterior row more or less contiguous, apices recurved in frontal view; posterior median eyes relatively small, slightly nearer to anterior laterals than to posterior laterals; posterior row narrower than anterior row; quadrangle length between 49 and 53% of carapace length. *Clypeus*: low. *Male chelicerae*: of different shapes, porrect, elongate; fang long; promargin with 3 or 4 teeth, retromargin with 6 or 8. *Female chelicerae*: of medium size, slightly inclined anteriorly; promargin with 3 teeth, retromargin with 7. *Maxillae*: elongate, divergent. *Labium*: tongue-shaped, slightly longer than broad, slightly less than half maxillae length. *Sternum*: scutiform. *Coxae*: subequal in females, coxae I largest in males. *Pedichel*: short. *Abdomen*: elongate, sometimes tapered; scuta lacking; spinnerets moderately long and slender, subequal in length; tracheal system not

examined (insufficient material). *Legs*: long and slender; fringes of short stiff hairs sometimes present on male legs I; spines moderately strong to weak, less numerous on posterior legs; claws pectinate; tufts present, scopulae lacking. *Female palp*: long and slender, terminal claw apparently lacking. *Male palp*: simple; retrolateral tibial apophysis distally blunt or pointed; embolus originating subbasally to apically, shape relatively short and stout to moderately long and slender; tegulum unmodified, seminal duct peripheral. *Epigyne*: relatively simple; openings indistinct; posteriorly a semicircular depression (presumably for retaining the retrolateral tibial apophysis during copulation); primary spermathecae small, secondaries large with leaf-like fertilization ducts.

**AFFINITIES AND DIAGNOSIS.** The simple structure of the secondary genitalia would appear to exclude this genus from the Lyssomaninae, unfortunately affinities with other salticine subfamilies are unknown and a useful diagnosis cannot be given at the present time. Hopefully the position will become clear when other Oriental genera have been revised.

**REMARKS.** It may be of interest to note that a survey of Oriental salticids in the collections of the British Museum (Natural History) produced several pale yellow females from the Malay Peninsula which were initially considered to be congeneric with *Orthrus*, but later proved otherwise. Similarly, the New Guinea collections produced several males with elongate chelicerae that closely resembled *Orthrus*, but these too belonged in another 'unknown' and unrelated genus.

List of species in the genus *Orthrus* Simon 1900

*Orthrus bicolor* Simon, 1900

*O. muluensis* sp. n.

*O. palawanensis* sp. n.

An identification key is hardly necessary as the species can be readily distinguished from one another by the structure of the genitalia.

### *Orthrus bicolor* Simon

(Fig. 1A-E)

*Orthrus bicolor* Simon, 1900 : 28, ♂. LECTOTYPE ♂, PARALECTOTYPE juvenile [not adult ♀] (here designated), Philippines, Antipolo (MNHN, Paris, no. 20560) [Examined]. Simon, 1901 : 394-96, 400. Petrunkevitch, 1928 : 181. Roewer, 1954 : 932. Bonnet, 1958 : 3215..

**AFFINITIES AND DIAGNOSIS.** *O. bicolor*, seems to be most closely related to *O. palawanensis* sp. n., but may be distinguished by the form of the chelicerae (Fig. 1A, E) and the blunt retrolateral tibial apophysis (Fig. 1C).

**FEMALE.** Unknown.

**MALE LECTOTYPE.** *Carapace* (Fig. 1A, B): orange-brown grading to pale yellow-brown in foveal region and eye area. *Eyes*: with black surrounds except AM; anterior medians on large pedestals, sparsely fringed in fine pale yellowish hairs; anterior row more or less contiguous with apices recurved. *Clypeus*: very sparsely fringed in fine clear hairs. *Chelicerae* (Fig. 1A, E): elongate, divergent from near bases, porrect; pale orange, shiny; lateral keels sparsely fringed in fine yellowish hairs; promargin with 3 teeth, retromargin with 6. *Maxillae*: pale brown to whitish yellow. *Labium*: pale brown edged whitish yellow. *Sternum*: whitish yellow, shiny; margins poorly defined. *Coxae*: pale yellow. *Abdomen*: whitish yellow. *Legs*: light yellowish; spines very pale, spination of legs I: metatarsi V 2-2-0, R 1-0-1, P 1-0-1; tibiae V 2-4-0, R 0-0-1, P 0-1-1; femora apparently D 0-1-0. *Palp* (Fig. 1C, D): femora fringed dorsally and ventrally with stiff orange hairs, patellae and tibiae fringed ventrally with stiff brown hairs.

*Dimensions* (mm): total length 4.78; carapace length 1.54, breadth 1.26, height 0.92; chelicerae length 0.88; abdomen length 2.44; eyes, anterior row 1.14, middle row 0.9, posterior row 1.0; quadrangle length 0.78. *Ratios*: AM : AL : PM : PL : 12 : 5 : 1.2 : 4.1; AL - PM - PL : 4 - 5.5; AM : CL (clypeus) : 12 : 1, chelicera length/carapace length 0.57.

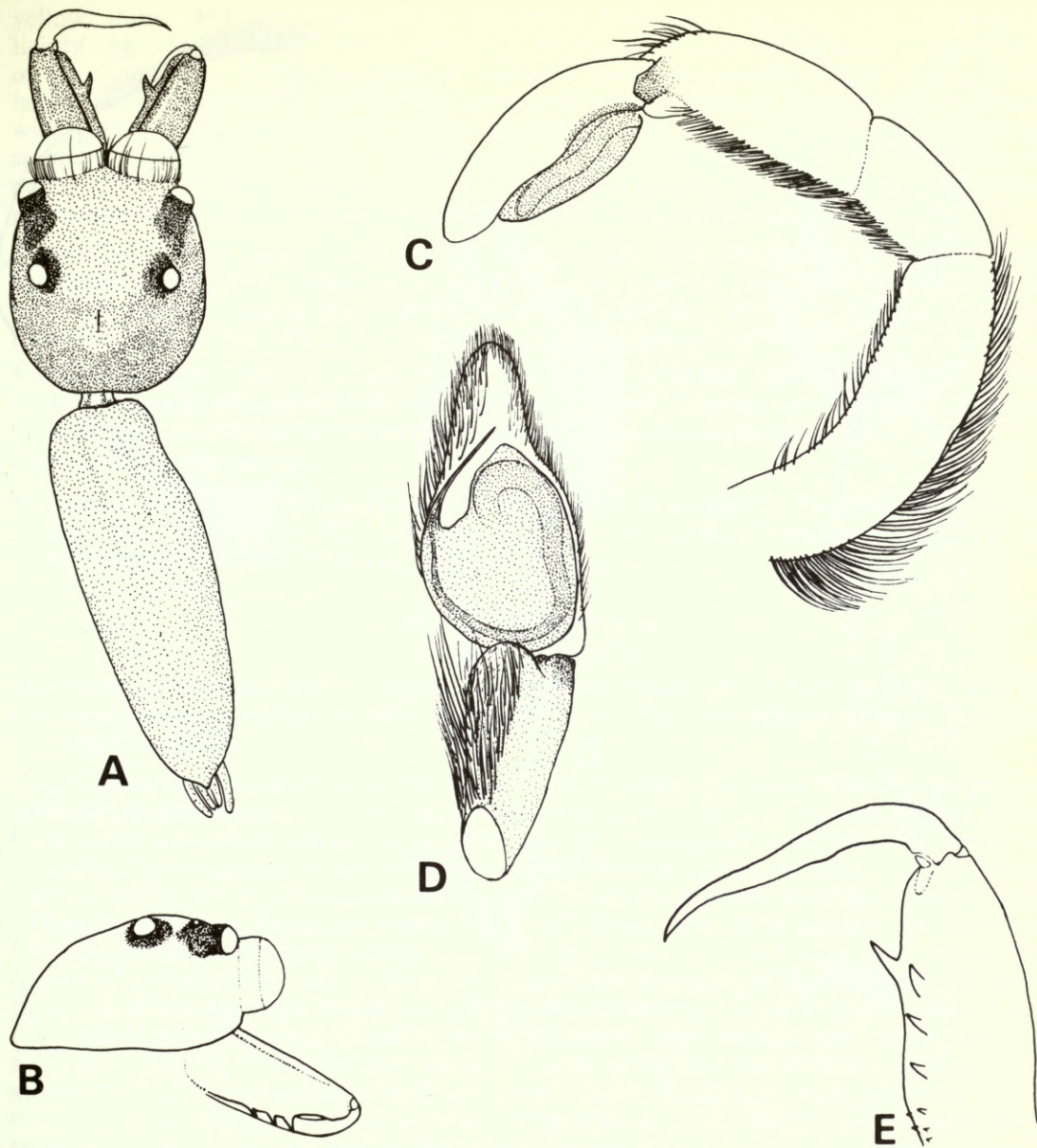


Fig. 1 *Orthrus bicolor* Simon, lectotype ♂: A, dorsal view; B, carapace, lateral view; C, palp, lateral view; D, palp, ventral view; E, chelicera.

DISTRIBUTION. Philippines (Antipolo, environs of Manila).

MATERIAL EXAMINED. Lectotype ♂, paralectotype juvenile, data given in synonymy.

*Orthrus palawanensis* sp. n.

(Fig. 2A-F)

AFFINITIES AND DIAGNOSIS. *O. palawanensis*, is apparently closest to *O. bicolor*, but may be readily separated by the form of the chelicerae (Fig. 2A, F) and the curved retro-lateral tibial apophysis (Fig. 2C).

FEMALE. Unknown.

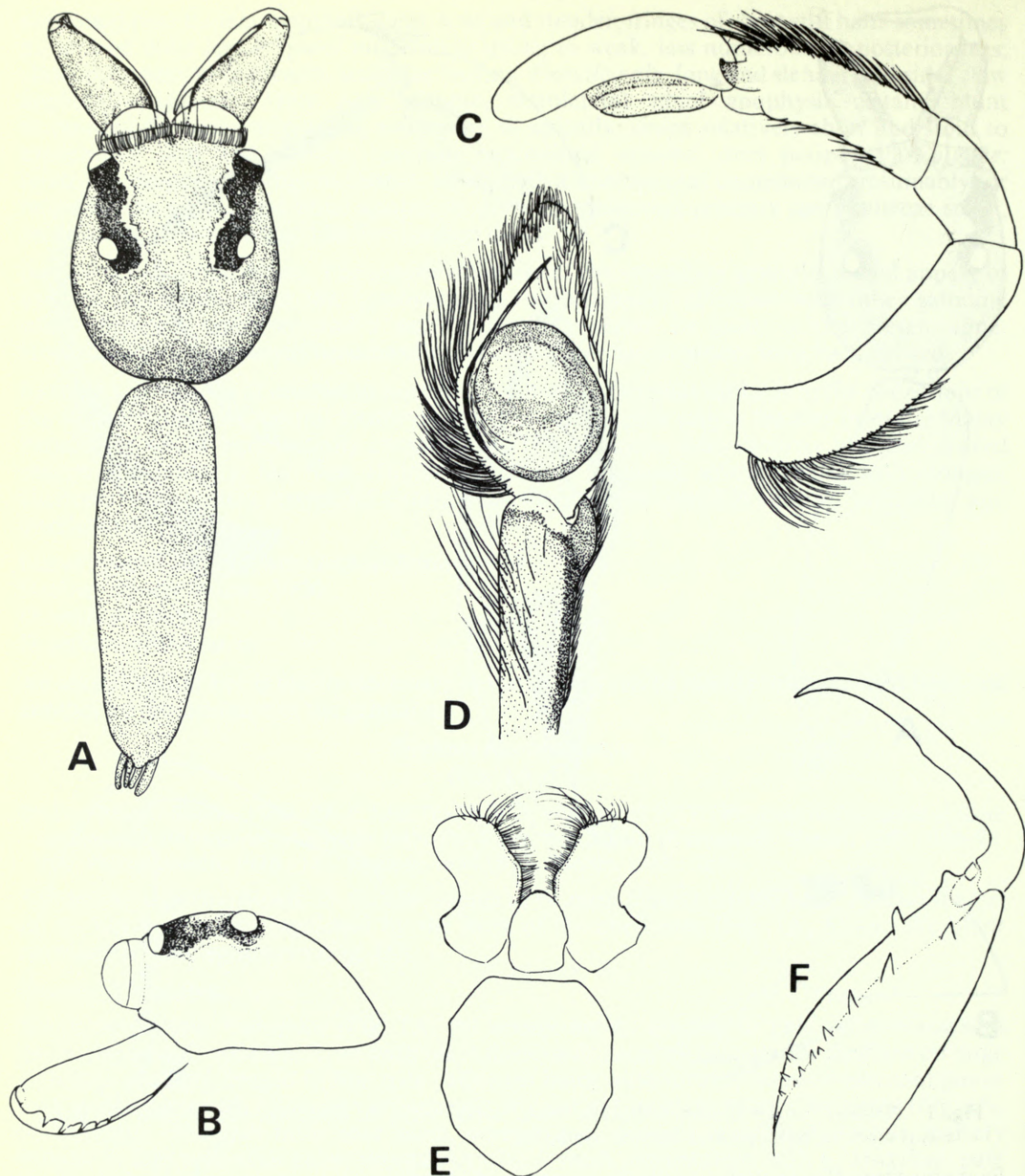


Fig. 2 *Orthrus palawanensis* sp. n., holotype ♂: A, dorsal view; B, carapace, lateral view; C, palp, lateral view; D, palp, ventral view; E, maxillae, labium and sternum; F, chelicera.

MALE HOLOTYPE. *Carapace* (Fig. 2A, B): pale orange-brown with sooty margins; shiny. *Eyes*: with black surrounds edged in yellowish guanin, except AM; fringed in whitish hairs; anterior row more or less contiguous with apices recurved. *Clypeus*: orange-brown lightly tinged black. *Chelicerae* (Fig. 2A, F): elongate, strongly divergent from just before mid-length, porrect; amber; shiny; promargin with 4 teeth, retromargin with 7 or 8. *Maxillae* (Fig. 2E): pale yellow lightly tinged grey. *Labium*: pale yellow. *Sternum* (Fig. 2E): pale

yellow, shiny. *Abdomen*: pale yellow; spinnerets moderately elongate, pale yellow very lightly tinged black. *Coxae*: pale yellow. *Legs*: legs I pale yellow with blackish lateral stripes on tarsi, metatarsi, tibiae and patellae, also with dorsal and ventral fringes of grey-black lanceolate hairs on tibiae, patellae and proximal part of metatarsi; other legs pale yellow with greyish black longitudinal lateral stripes on tarsi and metatarsi, fringes lacking; spination of legs I: metatarsi V 2-2-0, R 1-0-1, P 1-0-1; tibiae V 2-4-2-, R 1-1-0, P 1-1-0; patellae V 0-1-0; femora R 0-0-1, D 1-1-1, P 0-0-1. *Palp* (Fig. 2C, D): yellow-orange with grey-black lateral stripes; femora and tibia with dorsal fringe of blackish hairs.

*Dimensions* (mm): total length 4.1; carapace length 1.66, breadth 1.42, height 0.96; chelicerae length 0.92; abdomen length 2.44; eyes, anterior row 1.2, middle row 0.98, posterior row 1.14; quadrangle length 0.86. *Ratios*: AM : AL : PM : PL : 12 : 5 : 1 : 5; AL - PM - PL : 4 - 6.5; AM : CL : 12 : 1; chelicera length/carapace length 0.65.

VARIATION. A paratype ♂ measures 4.5 mm total length, 1.88 mm carapace length, 1.28 mm cheliceral length; ratio of chelicera/carapace length 0.68. This specimen is generally paler than the holotype and the lateral stripes on the legs and palps are lacking.

DISTRIBUTION. Philippines.

MATERIAL EXAMINED. PHILIPPINES: Palawan, Mantalingajan, Tagembung, 1150 m, (*Noona Dan Exp.*, 1961-62) holotype ♂, 20.ix.1961 (ZM, Copenhagen) paratype ♂, 17.ix.1961 (BMNH. 1979.5.14.1).

### *Orthrus muluensis* sp. n.

(Figs. 3A-G; 4A-D)

AFFINITIES AND DIAGNOSIS. *O. muluensis* is closely related to *O. bicolor* Simon and *O. palawanensis* sp. n., but can be distinguished by the absence of fringes on the male palp (Fig. 3C), and distribution.

MALE HOLOTYPE. *Carapace* (Fig. 3A, B): pale yellow grading to light brown in eye region with median and marginal brown-black bands; pale areas clothed in recumbent silky white hairs. *Eyes*: with black surrounds edged in whitish yellow guanin, except AM; fringed in silky white hairs; anterior row more or less contiguous with apices recurved. *Clypeus*: black. *Chelicerae* (Fig. 3A, F, G): elongate and porrect; brown-black, shiny; promargin with 3 teeth, retromargin with 6. *Maxillae*: brown-black with inner and distal margins pale yellow. *Labium*: brown-black to pale yellow. *Sternum*: pale yellow, shiny. *Coxae*: pale yellow, but coxae I with black lateral sides. *Abdomen*: brown-black with pale yellow longitudinal bands; thinly clothed in fine light yellow hairs; spinnerets moderately elongate; brown-black. *Legs*: legs I pale yellow with black lateral stripes on metatarsi, tibiae, patellae and trochanters; also a fringe of short stiff black hairs on venter of tibiae; other legs pale yellow with grey-black apices on tibiae IV; spination of legs I: metatarsi V 2-2-0, R 1-0-1, P 1-0-1; tibiae V 2-4-0, R 0-0-1, P 0-0-1; femora D 1-1-2, P 0-0-1. *Palp* (Fig. 3C, D): whitish yellow with black retrolateral stripes on coxae and femora; fringes lacking.

*Dimensions* (mm): total length 4.0; carapace length 1.52, breadth 1.24, height 0.10; chelicerae length 1.44; abdomen length 2.4; eyes, anterior row 1.12, middle row 0.88, posterior row 0.98; quadrangle length 0.8. *Ratios*: AM : AL : PM : PL : 11 : 5 : 1.2 : 4.7; AL - PM - PL : 5 - 5; AM : CL : 11 : 1; chelicerae length/carapace length 0.95.

FEMALE PARATYPE. *Carapace* (Fig. 4A): pale yellow to whitish yellow in eye region. *Eyes*: with black surrounds edged in whitish guanin, except AM; fringed in silky white hairs. *Clypeus*: pale yellow. *Chelicerae*: pale yellow, shiny; promargin with 3 teeth, retromargin with 7. *Maxillae and labium*: pale yellow. *Sternum*: whitish yellow. *Abdomen*: pale yellow with a whitish spot just in front of the anal tubercle; spinnerets moderately elongate. *Legs*: pale yellow; spination of legs I: metatarsi V 2-2-0, R 1-0-1, P 1-0-1, tibiae V 2-4-2, R 0-1-0, P 0-1-0; patellae V 0-1-0; femora D 1-1-1, P 0-0-1. *Palp*: pale yellow. *Epigyne* (Fig. 4B-D): small and pale; openings indistinct.

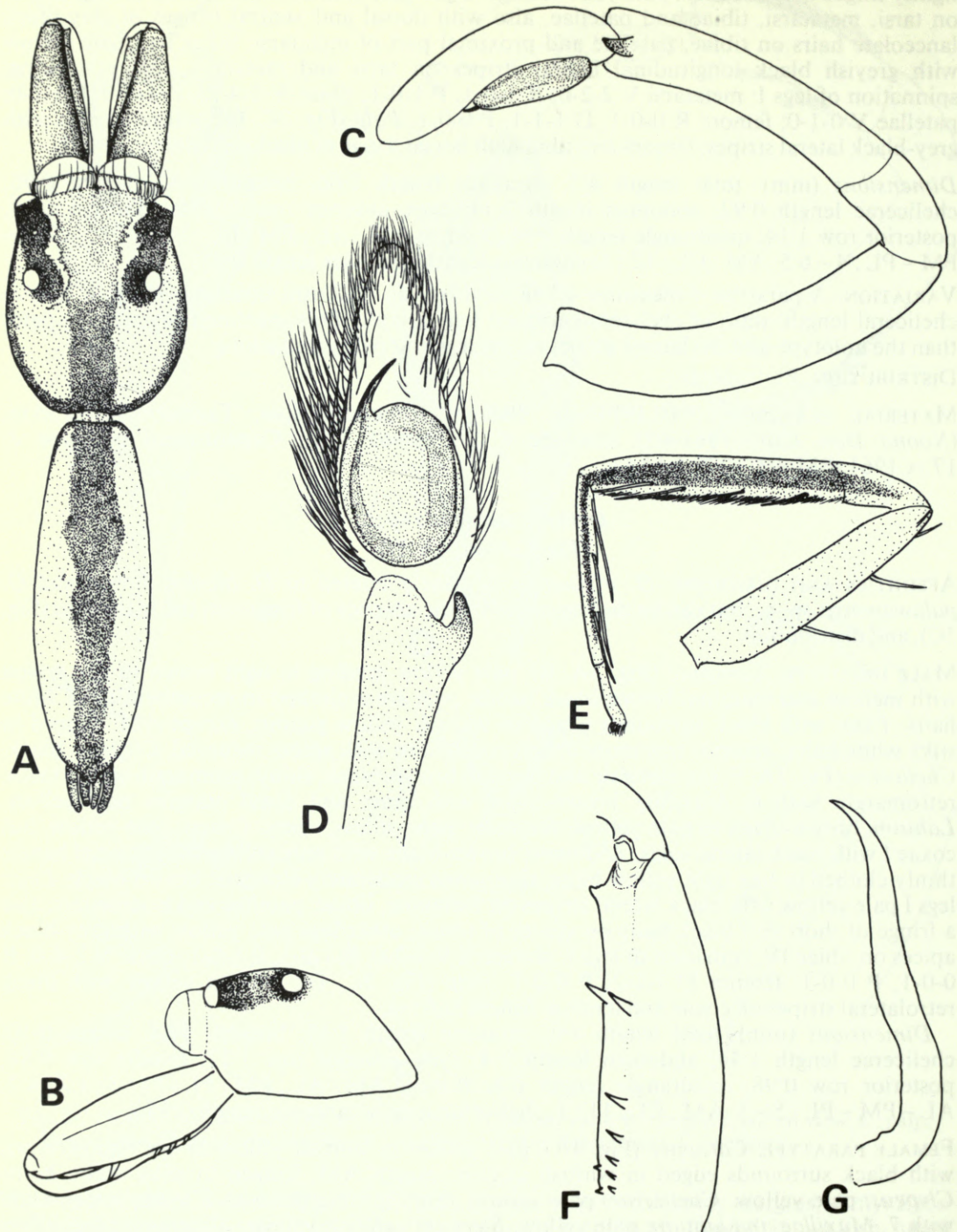


Fig. 3 *Orthrus muluensis* sp. n., holotype ♂: A, dorsal view; B, carapace, lateral view; C, palp, lateral view; D, palp, ventral view; E, leg I; F, chelicera; G, fang.

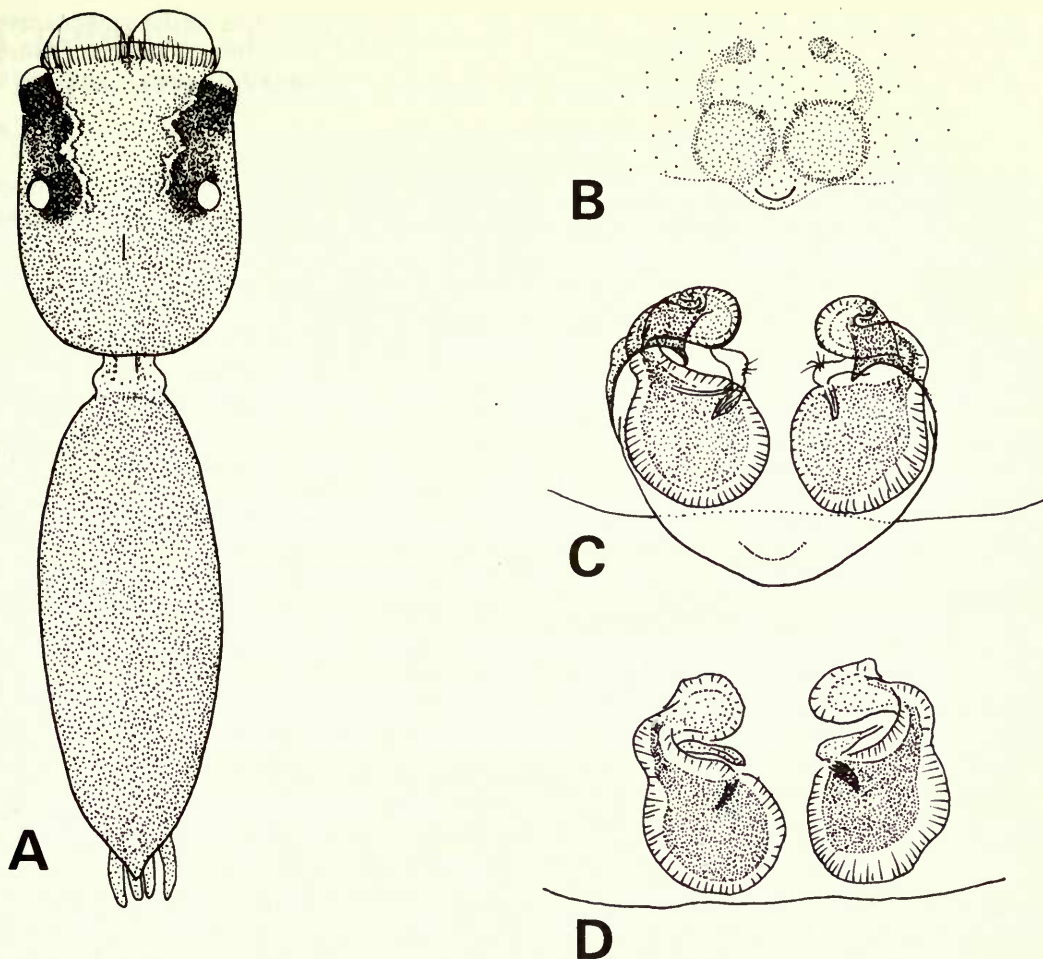


Fig. 4 *Orthrus muluensis* sp. n., paratype ♀: A, dorsal view; B, epigyne; C, vulva, ventral view; D, vulva, dorsal view.

*Dimensions* (mm): total length 3.88; carapace length 1.44; breadth 1.13, height 0.76; abdomen length 2.24; eyes, anterior row 1.08, middle row 0.82, posterior row 0.96; quadrangle length 0.71. *Ratios*: AM : AL : PM : PL : 10 : 4.5 : 1 : 4.1; AL - PM - PL : 4.5 - 5; AM : CL : 10 : 2.

**VARIATION.** Males 4.2 to 4.8 mm total length, 1.54-1.66 mm carapace length; cheliceral to carapace length varies from 0.95-1.06 (3 specimens); another paratype female measures 3.92 mm in total length, 1.52 mm carapace length.

**BIOLOGY.** Females and juveniles are green in life and were collected from the underside of green leaves on shrubs and young trees in alluvial forest. One female was found under a leaf guarding a parchment-covered group of ten light green eggs measuring approximately 0.68 mm diameter. She appeared to be resting upside down, beneath a flimsy web spun just above the cocoon which was camouflaged with particles of detritus. Males were found running about on ginger leaves. The sexes were not taken together, but occurred in the same locality. This species, which was not often encountered, in spite of diligent searching, is possibly more abundant in the canopy.

**DISTRIBUTION.** Sarawak.

**MATERIAL EXAMINED.** SARAWAK, Gunong Mulu National Park (F. R. Wanless Royal

Geographical Society Mulu exp., 1977–78): Gua Payau, cave entrance, under ginger leaves, holotype ♂, paratype ♂, 16.vi.1978 (BMNH. 1979.5.18.1–2); Environs of Melinau Gorge, under leaves, 29–30.vi.1978, paratypes, 1♀ (BMNH), 1♂, 1♀ (Sarawak Museum, Kuching).

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### References

- Bonnet, P.** 1958. *Bibliographia Araneorum*, 2(4) : 3027–4230. Imprimerie Douladoure, Toulouse.
- Galiano, M. E.** 1976. Comentarios sobre la categoria sistematica del taxon Lyssomanidae (Araneae). *Revta Mus. argent. Cienc. nat. Bernardino Rivadavia Inst. nac. Invest. Cienc. nat.* 5(3) : 59–70.
- Petrunkovitch, A.** 1928. Systema Araneorum. *Trans. Conn. Acad. Arts Sci.* 29 : 270 pp.
- Platnick, N. I. & Shadab, M. U.** 1975. A revision of the spider genus *Gnaphosa* (Araneae: Gnaphosidae) in America. *Bull. Am. Mus. nat. Hist.* 155 : 3–66.
- Roewer, C. F.** 1938. Araneae. In Resultats scientifiques du voyage aux Index Orientals Néerlandaises de LL. AA. RR. le Prince et la Princesse Léopold de Belgique. *Mém. Mus. r. Hist. nat. Belg.* Hors Série. 3(19) : 94 pp.
- 1954. *Katalog der Araneae*. 2, Abt. B : 924–1290. Institut Royal des Sciences Naturelle de Belgique, Bruxelles.
- Simon, E.** 1900. Études arachnologiques 30e Mémoire (1) XLVII Descriptions d'espèces nouvelles de la famille des Attidae. *Annls Soc. ent. Fr.* 69 : 27–61.
- 1901. *Histoire Naturelle des Araignées*, 2 (3) : 381–668. Paris, Roret: Librairie Encyclopédique.
- Wanless, F. R.** 1978. A revision of the spider genera *Belippo* and *Myrmarachne* (Araneae : Salticidae) in the Ethiopian region. *Bull. Br. Mus. nat. Hist. (Zool.)* 33 (1) : 139 pp.

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