

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

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## Introduction

The genus *Bocus* Peckham & Peckham, 1892 is known only from the Philippines and is represented by the type-species *Bocus excelsus* Peckham & Peckham and *B. philippinensis* sp. n. *B. flavus* Simon, known from the lectotype male and one female, is here regarded as a small pale coloured form of *B. excelsus*.

*Bocus* species are ant-like in body form and closely resemble *Myrmarachne* Macleay but the structure of the epigyne and the development of the intercoxal plates (cp) and sternum (Fig. 3C, D) suggest that *Bocus* is a good monophyletic genus. However, its affinities are uncertain as other ant-like genera in the Oriental region have yet to be revised.

## Genus *BOCUS* Peckham & Peckham

*Bocus* Peckham & Peckham, 1892 : 38. Type-species *Bocus excelsus* Peckham & Peckham, by monotypy. Simon, 1901 : 501, 503, 505. Roewer, 1954 : 939. Bonnet, 1955 : 892.

**DEFINITION.** Ant-like spiders ranging from about 5.5 to 11.5 mm in length. Males sexually dimorphic. Colour markings subdued; not hirsute. *Carapace*: elongate with postocular constriction emphasized by scanty white haired bands and with one pair of trichobothria dorsally; sculpturing usually papillate; fovea lacking. *Eyes*: anterior row subcontiguous with apices procurved in frontal view; middle row more or less midway between anterior lateral and posterior lateral eyes; posterior row slightly wider or slightly narrower than anterior row; quadrangle length between 27 and 33 per cent of carapace length. *Clypeus*: very low. *Female chelicerae*: normal with 3 pro-marginal and 4 or 6 retromarginal teeth. *Male chelicerae*: strongly developed, elongate and more or less horizontal; spurs absent; fang slightly sinuous, apophysis lacking; teeth numerous. *Maxillae*: elongate, blades more or less rounded; subparallel. *Labium*: elongate, median keel lacking. *Sternum*: long and narrow or anteriorly modified by fusion with intercoxal plates II (Fig. 3D). *Pedichel*: elongate, anterior segments slightly longer than posterior one. *Abdomen*: elongate ovoid, constricted at anterior third; scuta present in males, lacking in females; spinnerets compact, subequal in length, anteriors more robust; tracheal spiracle a transverse slit just in front of anterior spinnerets; position of colulus not evident (in specimens at hand). *Legs*: slender, tarsi I sometimes slightly compressed laterally; formula 4132; spination: dorsal and lateral spines absent; ventral spines present on legs I-II, lacking on legs III-IV; claw tufts present, apparently scanty on legs I; scopula lacking. *Female palp*: palette shaped, fringed with fine preening setae. *Male palp* (Fig. 3A, B, E, F): tibial apophysis not hooked, base sometimes forming a slight flange; embolus long, moderately slender, with two turns around tegulum; tegulum subcircular with large seminal reservoir, pars pendula present; conductor and median apophysis absent; proximal ectal margin of cymbium unmodified. *Epigyne* (Fig. 1F, G): comparatively simple with indistinct openings separated by a septum; median pouch present; primary and secondary spermathecae simple, connected by distinct seminal ducts.

The structure of the epigyne although simple is not entirely understood as there is no obvious route for spermatozoa to reach the spermathecae. The opening for the reception of the embolus and the ducts leading to the spermathecae are not evident.

**DIAGNOSIS.** *Bocus* may be separated from other Oriental ant-like Salticidae by the form of the sternum (Fig. 3D) or the presence of well-developed intercoxal plates I and II (Fig. 3C).

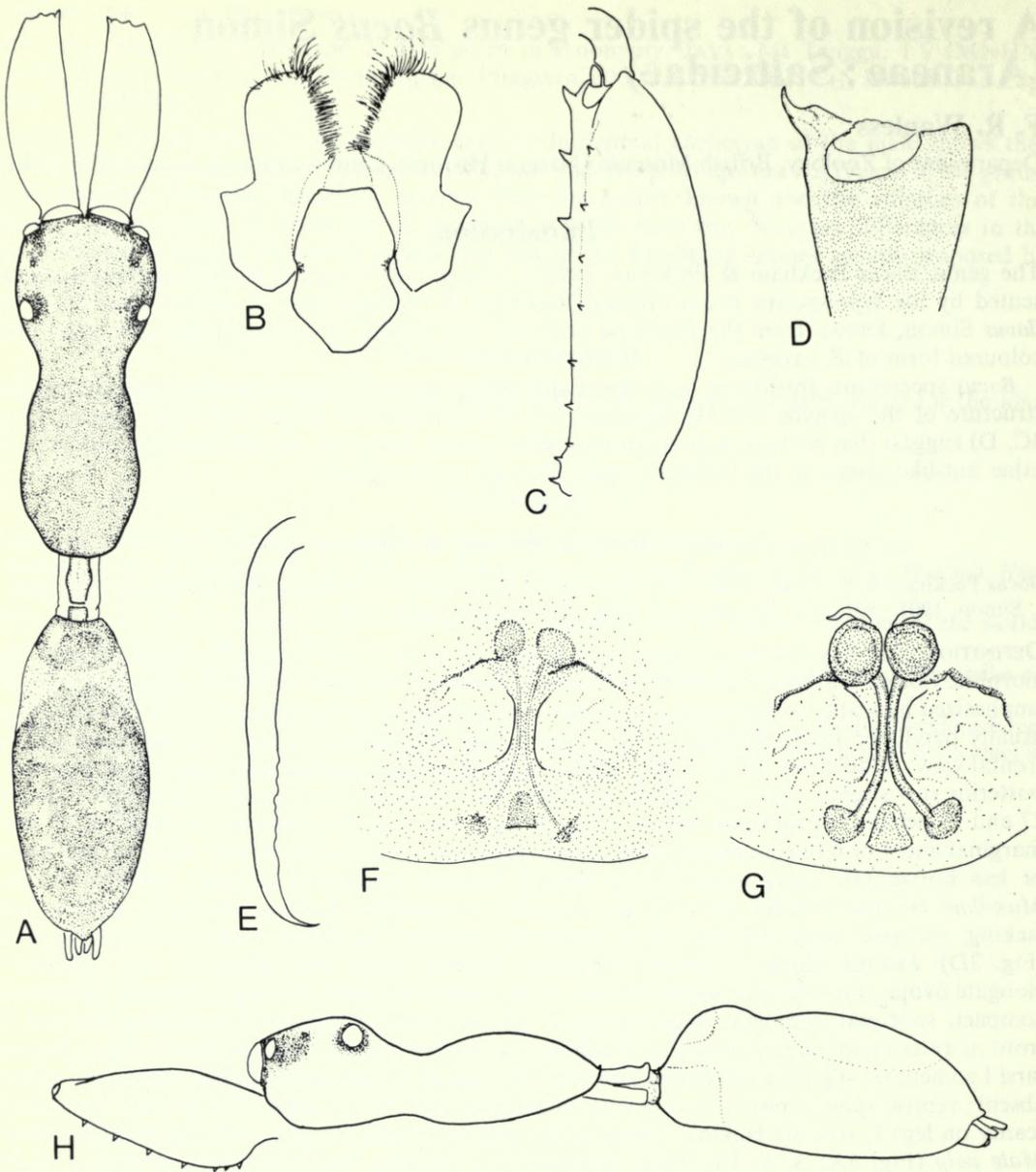


Fig. 1 *Bocus excelsus* Peckham & Peckham. Lectotype ♂: (A) dorsal view; (C) chelicera, ventral view; (E) fang; (H) lateral view. ♂ from Manila: (B) maxillae; (D) palpal tibia, ventral view. ♀ from Manila: (F) epigyne; (G) vulva, ventral view.

*Bocus excelsus* Peckham & Peckham

(Figs 1A-H; 3A, B, D)

*Bocus excelsus* Peckham & Peckham, 1892 : 39, pl. 3, figs 4, 4a-d, ♂. LECTOTYPE ♂ (here designated) Philippines, Luzon (MCZ, Harvard) [Examined]. Simon, 1901 : 499, 503, 505, figs 598, 599. Roewer, 1954 : 939. Bonnet, 1955 : 892.

*Bocus flavus* Simon, 1900 : 406, ♂. LECTOTYPE ♂ (here designated) Philippines, Manila (MNHN, Paris) [Examined]. Simon, 1901 : 503, 505. Roewer, 1954 : 939, Bonnet, 1955 : 892. Syn. n.

DIAGNOSIS. *B. excelsus* is readily distinguished from *B. philippinensis* sp. n. by the form of the sternum (Fig. 3D).

MALE LECTOTYPE. *Carapace* (Fig. 1A, H): finely punctured-reticulate with moderately dense papillae in eye region; thoracic part irregularly and coarsely papillate; dark reddish orange with fine scattered white hairs. *Eyes*: fringed with white hairs. *Clypeus*: fringed with whitish hairs. *Chelicerae* (Fig. 1C, E): rugulose with furrows; reddish orange grading to orange distally. *Maxillae and labium*: dark orange-brown but inner margins of maxillae and labial tip paler. *Sternum* (Fig. 3D): reddish orange. *Abdomen*: mottled dull yellow-brown and blackish with dark reddish orange scuta. *Legs*: generally orange-brown but tarsi II–IV and coxae I yellow-brown; tarsi I laterally compressed and with scanty claw tufts when compared with those of legs II–IV; ventral spination of legs I: metatarsi 2–2; tibiae 2–2–2–2–2–2, patellae 1. *Palp* (Figs 1D; 3A, B).

*Dimensions* (based on 3 ♂♂): total length 5.4–9.6 mm; carapace length 2.7–4.7 mm. *Ratios*: AM : AL : PM : PL :: 11 : 6 : 1.5 : 6; AL–PM–PL: 7–9; width of eye row I/ carapace width at that point 0.98–1.04; width of eye row III/ carapace width at that point 0.98–1.03; quadrangle length/ carapace length 0.27–0.33; chelicerae length/ carapace length 0.33–0.68; tibia plus patella IV/ carapace length 0.82–0.88.

FEMALE (labelled *B. flavus* by Simon). *Carapace*: shape as in ♂; sculpturing poorly defined, apparently finely reticulate in eye region and densely papillate on thoracic part; yellowish orange with yellow guanin in eye region, shiny; thinly clothed with short fine whitish and pale orange hairs and with scanty white haired bands in constriction. *Eyes*: as in ♂. *Clypeus*: as in ♂. *Chelicerae*: yellow-brown with 3 promarginal and 4 or 6 retromarginal teeth. *Maxillae*: light yellow-brown. *Labium*: light yellow-brown with whitish grey tip. *Sternum*: shape as in ♂; pale yellowish orange, shiny. *Abdomen*: light greyish brown with a vague series of transverse bands posteriorly; spinnerets pale yellowish. *Legs*: generally light yellow-brown with vague lateral streaks on legs I; ventral spination: metatarsi 2–1–2; tibiae as in ♂; patellae 0. *Palp*: pale yellow, shiny. *Epigyne* (Fig. 1F, G).

*Dimensions* (based on 1 ♀): total length 5.6 mm; carapace length 2.6 mm. *Ratios*: AM : AL : PM : PL :: 9 : 4.5 : 1 : 5; AL–PM–PL: 5.5–6; width of eye row I/ carapace width at that point 1.03; width of eye row III/ carapace width at that point 1.05; quadrangle length/ carapace length 0.33; tibia plus patella IV/ carapace length 0.78.

VARIATION. *B. excelsus* varies considerably in size with the eye positions and chelicerae showing allometric growth; a trend found to be widespread in *Myrmarachne* from the Ethiopian region (Wanless, 1978). The pale coloured forms (i.e. 1 ♀ and lectotype ♂ of *B. flavus*) may have been freshly moulted when collected or have faded during preservation. Moreover, experience has shown that guanin in the eye region (see female description above) is an unreliable character in colour pattern formation, and in this instance it could be an artifact but additional specimens are required to show if this interpretation is correct.

BIOLOGY. Unknown.

DISTRIBUTION. Philippines.

MATERIAL EXAMINED. Type-data given in synonymy. PHILIPPINES, Manila, 1 ♂ (*J. Walker*) (BMNH); Manila, 1 ♀ (MNHN, Paris).

*Bocus philippinensis* sp. n.

(Figs 2A–D; 3C, E, F)

DIAGNOSIS. *B. philippinensis* is readily distinguished from *B. excelsus* Peckham & Peckham by the form of the sternum (Fig. 3D).

FEMALE. Unknown.

MALE HOLOTYPE. *Carapace* (Fig. 3A, D): finely punctured-reticulate with moderately dense papillae in eye region; thoracic part irregularly and coarsely papillate; brown-black with light orange mid-dorsal patch in constriction; clothed with short whitish hairs with scanty white

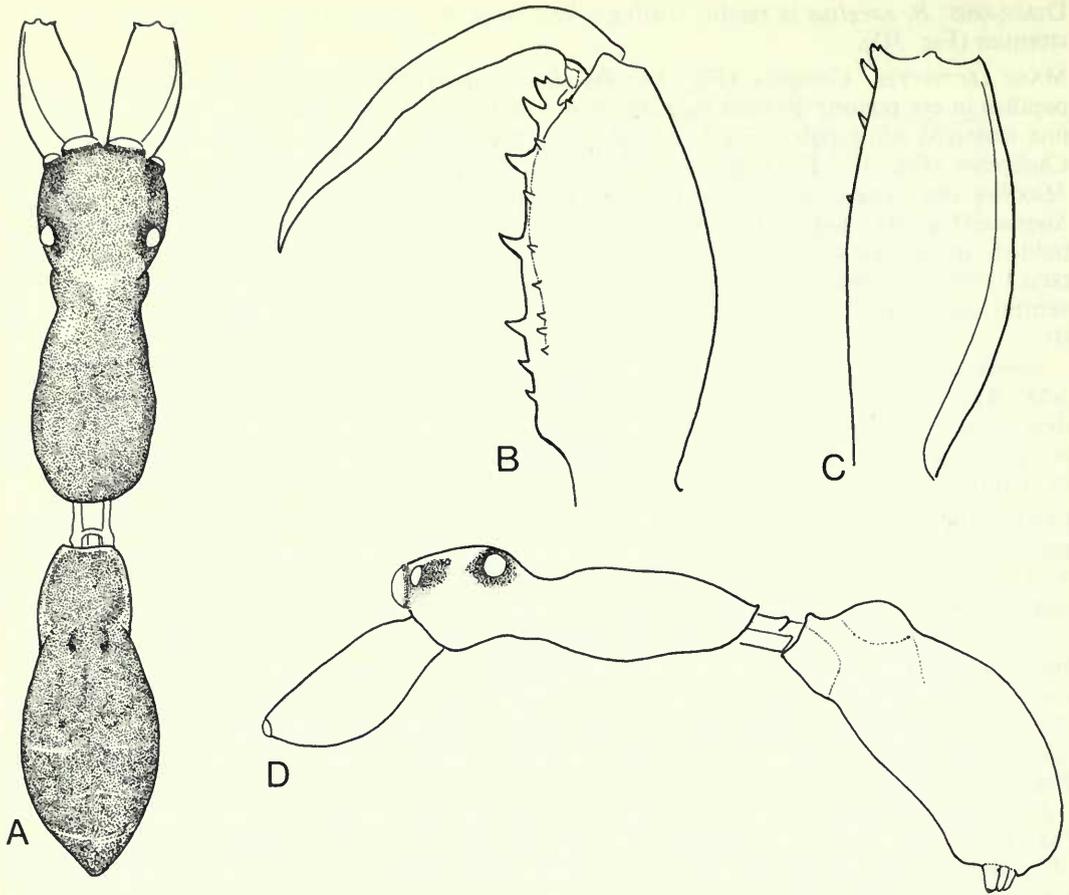


Fig. 2 *Bocus philippinensis* sp. n., holotype ♂: (A) dorsal view; (B) chelicera, ventral view; (C) chelicera, dorsal view; (D) lateral view.

haired bands in constriction and on lower margins of cephalic part. *Eyes*: fringed with whitish hairs. *Clypeus*: fringed with long white hairs. *Chelicerae* (Fig. 2B, C): papillate with furrows; dark reddish orange. *Maxillae and labium*: dark reddish orange. *Sternum* (Fig. 3C): dark reddish orange. *Abdomen*: light yellowish with blackish mottling; scuta dark reddish orange with four impressed spots; clothed with fine whitish pubescence forming a poorly defined series of transverse bands; ventre light greyish yellow with blackish mottling and a weak scutum from epigastric furrow to spinnerets. *Legs*: legs I dark orange-brown and coxae light yellowish; other legs dark orange-brown grading to light orange distally with light yellowish patches on ventre of trochanters IV; tarsi I slightly compressed laterally with scanty claw tufts; ventral spination of legs I: metatarsi 2-2, tibiae 2-2-2-2-2-2, patellae 2. *Palp* (Fig. 3E, F).

*Dimensions* (based on 1 ♂): total length 11.5 mm, carapace length 5.52 mm. *Ratios*: AM : AL : PM : PL :: 16 : 8 : 2 : 10; AL-PM-PL: 11-11.5; width of eye row I/ carapace width at that point 1.02; width of eye row III/ carapace width at that point 1.03; quadrangle length/ carapace length 0.28; chelicerae length/ carapace length 0.50; tibia plus patella IV/ carapace length 0.89.

VARIATION. Unknown.

BIOLOGY. Unknown.

DISTRIBUTION. Philippines.

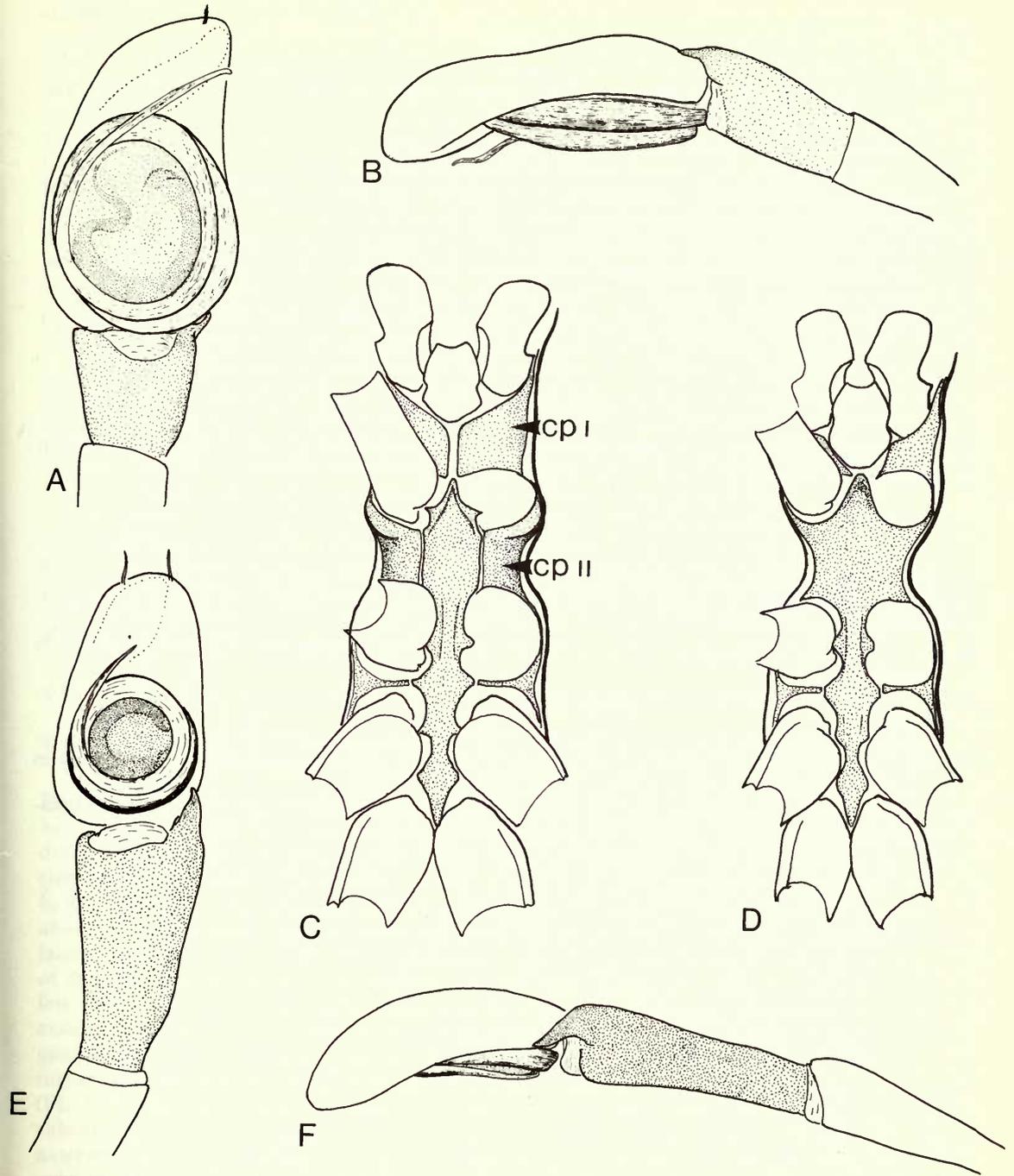


Fig. 3 *Bocus excelsus* Peckham & Peckham, lectotype ♂: (A) palp, ventral view; (B) palp, lateral view; (D) sternum. *Bocus philippinensis* sp. n., holotype ♂: (C) sternum; (E) palp, ventral view; (F) palp, lateral view.

MATERIAL EXAMINED. Holotype ♂, PHILIPPINES, Palawan, Mantalingajan, Pinigisan, 600 m, 12.ix.1961 (Noona Dan Exp. 1961-62) (BMNH reg. no. 1977.4.21.24).

REMARKS. The derivation of the form of the sternum in *B. excelsus* would not have been appreciated but for the discovery of *B. philippinensis*, the form of whose sternum may well be ancestral to the type found in *B. excelsus*. The development of an elongate carapace is not unusual in ant-like spiders but the evolution of well-developed intercoxal plates and their fusion with the sternum to compensate for increased carapace length has not to my knowledge previously been described in the Salticidae. It is unfortunate that the affinities of *Bocus* are uncertain. The structure of the palp and the body form suggest that it may have evolved from *Myrmarachne* stock and it could be placed in the subfamily Myrmarachninae. The epigyne which is characterized by the presence of secondary spermathecae resembles that of *M. exasperans* (Wanless, 1978) which has short distal seminal ducts which might, with hindsight, also be interpreted as secondary spermathecae. Secondary spermathecae are also found in the ant-like genera *Belippo* Simon and *Sarinda* Peckham & Peckham, but these genera are in other respects not closely related to *Bocus*. It would be premature at the present time to speculate too widely on the affinities of *Bocus* until structural trends in the genitalia of Oriental and even Australian *Myrmarachne* are known.

### Acknowledgements

I wish to thank Dr H. W. Levi (MCZ, Harvard) and M. M. Hubert (MNHN, Paris) for the loan of specimens.

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