

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

F. R. Wanless

Department of Zoology, British Museum (Natural History), Cromwell Road, London SW7 5BD

## Introduction

The genus *Marengo* Peckham & Peckham, 1892 is represented in both the Oriental and Ethiopian regions and at present includes nine known species. Seven species occur in the Oriental region, including the type-species *Marengo crassipes* Peckham & Peckham from Sri Lanka and also *M. grammicus* (Simon), from the Philippines, the type-species of *Philates* a poorly known genus regarded here as being synonymous with *Marengo*. The Ethiopian region was formerly represented by two species revised by Roewer (1965). They are now considered to be conspecific, but the number of species in the Ethiopian region remains unaltered as a new taxon from Angola is described in this present paper.

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

*Marengo* spiders resemble ants and pseudoscorpions in appearance, but their biology is unknown. Most species have the first pair of legs grossly enlarged and would appear to form a good monophyletic group although new taxa from Singapore and Borneo are somewhat divergent in body form. The species can be readily separated by the carapace shape and sculpturing, abdominal pattern and genital structures. Intraspecific variation is apparently not marked, apart from minor differences in the conformation of the epigynal ducts.

## Genus *MARENGO* Simon

*Marengo* Peckham & Peckham, 1892 : 66. Type species *Marengo crassipes* Peckham & Peckham, by monotypy. Simon, 1901 : 488, 491, 492. Petrunkevitch, 1928 : 182. Roewer, 1954 : 938. Bonnet, 1957 : 2714. Roewer, 1965 : 30.

*Philates* Simon, 1900 : 402. Type species *Philates grammicus* Simon, by original designation. Simon, 1901 : 489, 491–493. Bonnet, 1958 : 3537. Petrunkevitch, 1928 : 183. Roewer, 1954 : 938. **Syn. n.**

**DEFINITION.** Small spiders ranging from about 2.6 to 4.0 mm in length. Sexes alike in general body form but males with dorsal abdominal scuta and slightly heavier first legs. Colour patterns sometimes present, but usually less distinct in males; not hirsute, carapace often with several scanty patches of white hair. *Carapace*: shape variable, sculpturing variable, fovea lacking. *Eyes*: usually in three rows, rarely four; contiguous or subcontiguous with apices from slightly procurved to strongly recurved; middle row about midway between anterior lateral and posterior lateral eyes or nearer to anterior laterals; posterior row wider than anterior row; quadrangle length between 37 and 44 per cent of carapace length. *Clypeus*: low, backwards sloping. *Chelicerae*: small to medium; more or less subvertical, and usually set well back; promargin with 1–3 teeth, retromargin with 3–5, closely set. *Maxillae*: parallel or convergent. *Labium*: subtriangular. *Sternum*: elongate scutiform. *Pedichel*: short to long, not always visible in dorsal view, anterior dorsal and ventral segments usually well developed with posterior segment vestigial. *Abdomen*: shape variable, scuta sometimes present; spinnerets subequal in length, more or less in three rows, anteriors and medians slender, posteriors robust; tracheae (Fig. 4A) rather stout, branched and arising from transverse slit just in front of spinnerets and extending into cephalothorax; colulus apparently lacking. *Legs*: first pair usually massive with ventral fringe of stiff hairs on tibiae; remaining legs slender; formula 4123, 4132, 1423, 1432; spination: dorsal spines sometimes present on femora, lateral spines usually lacking, ventral spines present on metatarsi I–II but absent on III–IV. Spine sockets of legs I usually with well developed flanges (Pl. 3f). Claw tufts

present, scopula lacking. *Female palp*: normal. *Male palp* (Fig. 1F, I): tibial apophysis slender; embolus slender, coiled at distal end of tegulum; tegulum with medium seminal reservoir; pars pendula, conductor and median apophysis lacking. *Epigyne* (Fig. 1G, H, J): openings indistinct but sometimes with lightly chitinized depressions (Figs 3B, 5D) leading to convoluted or tangled ducts that terminate as spermathecae which usually have fleshy internal spicules.

The openings of the seminal ducts are usually thick-walled but the course they follow is never completely obvious. Associated with the walls are two knob-like projections with cilia. They are fairly clear in *M. coriacea* and several other species (Figs 1G, 7E, 8E), but there has not been sufficient material to show that they are present in all female *Marengo*.

**DIAGNOSIS.** *Marengo* is distinguished from other ant-like salticid genera by the following characters. First legs enlarged and usually massive; clypeus backwards sloping; chelicerae small to medium and usually set back. Male palp with simple tibial apophysis and coiled embolus on distal part of tegulum (Fig. 1F). Epigynal opening usually indistinct and sometimes with lightly sclerotized depressions (Figs 1H, 3B); seminal ducts long, convoluted or tangled; spermathecae with fleshy spicules.

**AFFINITIES.** *Marengo* closely resembles several genera. In the case of *Bellota* from the Neotropical region and *Ligonipes* from Australia the close similarities in general appearance are probably the result of convergence as the genitalia are quite distinct. However, the structure of the male palp, enlarged first legs and general body form suggest that *Marengo* may have affinities with *Mantisatta* from the Oriental and *Cheliferooides* from the Neotropical regions. Both genera are characterized by enlarged raptorial first legs, a tail-like caudal projection (rather short in *Cheliferooides*) and in the male palps a distal coiled embolus. They are readily distinguished from one another by the shape of the carapace and by the eye pattern; *Mantisatta* has four eye rows (Cutler & Wanless, 1973) *Cheliferooides* three. The presence of four eye rows was formerly considered to be diagnostic of lyssomanid spiders, but there are several exceptions: *Athamas*, *Synemosyna* and *Viciria* (Galiano, 1976), and one species of *Marengo*, *M. porosa* sp. n. Unfortunately, the affinities of *Marengo* will remain obscure until revisional studies on other salticid genera have been completed, but in the meantime it seems reasonable to suppose that similarities in body form and genital structures indicate a phylogenetic relationship between *Marengo*, *Mantisatta* and *Cheliferooides*.

### List of species in the genus *Marengo* Peckham & Peckham, 1892

- Marengo chelifera* Simon, 1900
- M. coriacea* Simon, 1900
- M. crassipes* Peckham & Peckham, 1892
- M. grammicus* (Simon, 1900)
- M. inornata* (Simon, 1900)
- M. lyrifera* sp. n.
- M. porosa* sp. n.
- M. striatipes* Simon, 1900
- M. thomsoni* sp. n.

### Key to species of *Marengo*

#### Males

- 1 Eye region punctured reticulate (Pl. 2d) or with numerous piliferous papillae (Pl. 1a, b), (Africa) . . . . . 2
- Eye region raised reticulate with setae (Pl. 1d–f) or papillate-falsifoveate with setae and scattered papillae (Pl. 3a, b), (Oriental region) . . . . . 3
- 2 Carapace with piliferous papillae in eye region and transverse white haired band in postocular depression (Pl. 1a–b); palpal tibial apophysis relatively long, embolus with two or three coils (Fig. 1F, I). (Kenya, South Africa, Tanzania, Zaire) . . . . . *coriacea* Simon (p. 261)
- Carapace punctured-reticulate in eye region, white haired band lacking, postocular depression very shallow (Pl. 2d); palpal tibial apophysis relatively short, embolus with four or five coils (Fig. 2E, F). (Angola) . . . . . *lyrifera* sp. n. (p. 264)

- 3 Femora I not grossly enlarged (Fig. 9D). (Java) . . . . . *chelifer* Simon (p. 272)  
 – Femora I grossly enlarged . . . . . 4  
 4 Eye region raised reticulate with setae (Pl. 1d–f), thoracic part papillate-falsifoveate with setae  
 (Pl. 2a–c); chelicerae with inner margins excavated. Palp as in fig. 4C, E. (Sri Lanka)  
 . . . . . *crassipes* Simon (p. 264)  
 – Eye region and thoracic part low papillate-falsifoveate with setae. Chelicerae with inner margins  
 slightly excavated. Palp as in fig. 10C, J. (Philippines) . . . . . *grammica* (Simon) (p. 272)

### Females

- 1 Carapace with piliferous papillae in eye region and transverse white haired band in postocular  
 depression (Pl. 1a–b); epigyne with slender tangled ducts (Fig. 1G, H, J). (Africa)  
 . . . . . *coriacea* Simon (p. 261)  
 – Not with combination of characters given above . . . . . 2  
 2 Eyes in four rows; thorax perforated (Pls 2e–f, 3c) (Singapore) . . . . . *porosa* sp. n. (p. 268)  
 – Eyes in three rows; thorax otherwise . . . . . 3  
 3 Carapace very finely rugulose, rather shiny and with distinct thoracic ‘hump’ (Fig. 8F). (Borneo)  
 . . . . . *thomsoni* sp. n. (p. 270)  
 – Carapace otherwise . . . . . 4  
 4 Femora of legs I not grossly enlarged (Fig. 5C); carapace from anterior eye row to posterior  
 margin strongly curved in lateral view (Fig. 5B). (Sri Lanka) . . . . . *striatipes* Simon (p. 267)  
 – Femora of legs I grossly enlarged (Figs 3E, 6B); carapace otherwise . . . . . 5  
 5 Abdomen with dorsal pattern of longitudinal bands (Fig. 10B); epigynal ducts long and tangled  
 (Fig. 10D, G, H). (Philippines) . . . . . *grammica* (Simon) (p. 272)  
 – Abdomen and epigyne otherwise. (Sri Lanka) . . . . . 6  
 6 Abdomen with dorsal pattern of white spots and blackish posterior region (Fig. 3A); thoracic  
 slope slightly concave (Fig. 3D) . . . . . *crassipes* Simon (p. 264)  
 – Abdomen with poorly defined transverse white band (Fig. 6A); thoracic slope convex (Fig. 6D)  
 . . . . . *inornata* (Simon) (p. 267)

### *Marengo coriacea* Simon

(Fig. 1A–J; Pl. 1a–c)

*Marengo coriacea* Simon, 1900 : 401, ♂. LECTOTYPE ♂ (here designated) South Africa, Natal (MNHN, Paris) [Examined]. Simon, 1901 : 488–491. Lawrence, 1947 : 36. Roewer, 1954 : 938. Bonnet, 1957 : 2714. Roewer, 1965 : 31. Prószyński, 1971 : 427.

*Marengo kibonotensis* Lessert, 1925 : 439, ♀. Holotype ♀, Tanzania, Kibonoto (NR, Stockholm) [Examined]. Roewer, 1954 : 938. Bonnet, 1957 : 2714. Roewer, 1965 : 31, fig. 26. Prószyński, 1971 : 427.  
 Syn. n.

DIAGNOSIS. *M. coriacea* is a fairly distinctive species distinguished from all other *Marengo* by the piliferous papillae in the eye region (Pl. 1a).

MALE FROM KENYA. *Carapace* (Fig. 1A, D): covered with piliferous papillae; dark orange with blackish eye region; clothed with fine whitish hairs, with scanty white-haired vertical bands on thoracic sides and with a band of yellowish hairs in transverse postocular depression. *Eyes*: anteriors more or less contiguous with apices slightly recurved, fringed with white hairs. *Clypeus*: edged with blackish with a submarginal line of white squamous hairs below AL and extending back to level of coxae I. *Chelicerae*: small, vertical with inner margins excavated (in frontal view); brown-black with a weak violet tinge. *Maxillae*: blades rounded, more or less parallel, each with two minute denticles on outer margin (best seen in ventrolateral view); orange-brown. *Labium*: about as long as broad; orange-brown. *Sternum*: similar to ♀; orange-brown suffused with blackish around the margins. *Abdomen* (Fig. 1A): scutum orange-brown tinged with black with broad transverse orange bands anteriorly and with two impressed blackish lines medially, shiny; clothed with fine black hairs and fine white ones on the orange bands; venter whitish yellow mottled with blackish. *Legs*: Legs I (Fig. 1C): massive; coxae, trochanters, femora, patellae and tibiae grossly enlarged; ventral tibial fringe composed of black lanceolate hairs; spines robust with well-developed socket flanges; tarsi yellow-brown with prolateral sides blackish, remaining

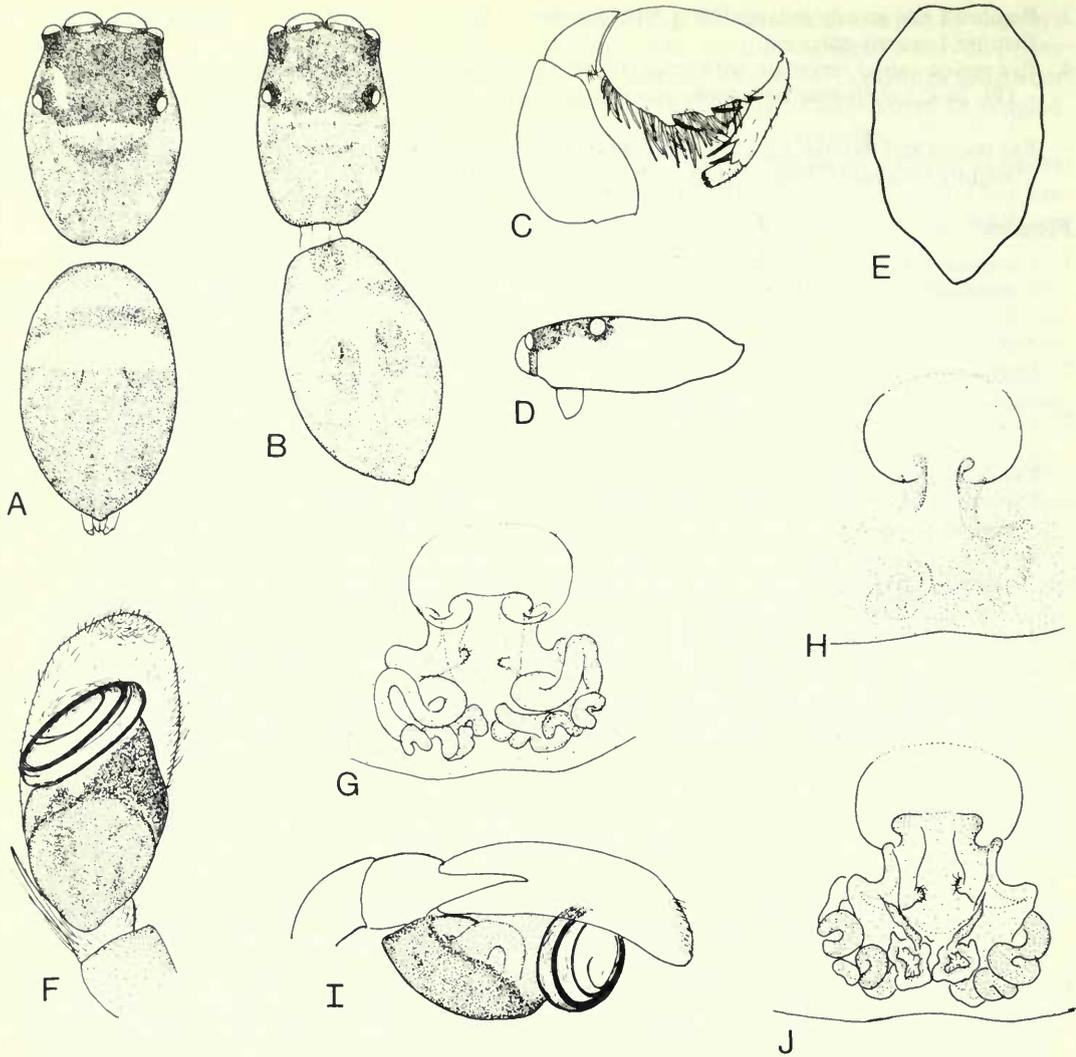


Fig. 1 *Marengo coriacea* Simon, ♂ from Kenya: (A) dorsal view; (D) carapace, lateral view. Lectotype ♂: (C) leg I; (F) palp, ventral view; (I) palp, lateral view. ♀ from Kenya: (B) dorsal view; (E) sternum; (G) vulva, ventral view; (H) epigyne; (J) vulva, dorsal view.

segments dark orange. Legs II–IV: femora orange streaked with black; remaining segments yellow-brown with black pro-lateral streaks on tibiae and metatarsi. Spination: femora: I D 0–2–0; II D 0–1–1, III–IV D 0–1–0; tibiae: I V 0–4–2, II V 1–1–0; metatarsi: I V 0–0–4, II V 0–1–0. *Palp* (Fig. 1F, I): brownish orange; diameter of coiled embolus relatively large.

*Dimensions* (mm): total length 3.5; carapace length 1.54, breadth 1.14; abdomen length 1.78; eyes anterior row 0.86, middle row 0.83, posterior row 0.98; quadrangle length 0.62. *Ratios*: AM : AL : PM : PL :: 8 : 3.5 : 0.75 : 3.5; AL–PM–PL: 5–5.

FEMALE FROM KENYA. Sculpturing, colour and body form similar to ♂. *Clypeus*: lacking sub-marginal line of white hairs. *Chelicerae*: inner margins not excavated; yellow-brown tinged with blackish, shiny; promargin and retromargin with 3 teeth. *Maxillae*: blades rounded, outer marginal denticles lacking. *Sternum* (Fig. 1E): orange-brown lightly tinged with blackish. *Abdomen*

(Fig. 1B): scutum lacking; dorsum pinkish grey with a white transverse band just in front of the middle and with three orange-brown patches, the posterior pair with an impressed brownish orange line; clothed with fine blackish and fine shiny white hairs; spinnerets pale yellow-brown. *Legs*: similar to ♂. *Spination*: femora: I D 0-2-0, II-IV D 0-0-1; tibiae: I V 0-4-2, II V 1-0-0; metatarsi: I V 0-2-2. *Palp*: femora and patellae light brown, remaining segments whitish yellow. *Epigyne* (Fig. 1G, H, J): pale.

*Dimensions* (mm): total length 3.28; carapace length 1.44, breadth 0.96; abdomen length 1.72; eyes anterior row 0.84, middle row 0.76, posterior row 0.90; quadrangle length 0.58. *Ratios*: AM : AL : PM : PL :: 7 : 3.5 : 1 : 3; AL-PM-PL: 5-4-5.

**VARIATION.** ♂ total length varies from 3.2 to 3.5 mm, carapace length 1.5-1.54 mm (three specimens). ♀ total length varies from 3.2 to 3.4 mm, carapace length 1.32-1.52 mm (three specimens).

Most specimens examined have been rubbed and have lost their colour but the impressed lines on the male abdomen and the patches on the female are usually retained.

**DISTRIBUTION.** Kenya, South Africa, Tanzania, Zaire.

**MATERIAL EXAMINED.** Type data given in synonymy. KENYA: Naivasha, 6000 ft, 1 ♂, 1 ♀, 3.viii.1974 (*J. & F. Murphy*); Nairobi, 1 ♂, vi.1970 (*A. Evans*) (BMNH). ZAIRE: Kivu, vallée da la moyenne Semliki, 1 ♀, 1.viii.1968 (*R. P. M. Lejeune, MT. 135.697*) (MRAC, Tervuren).

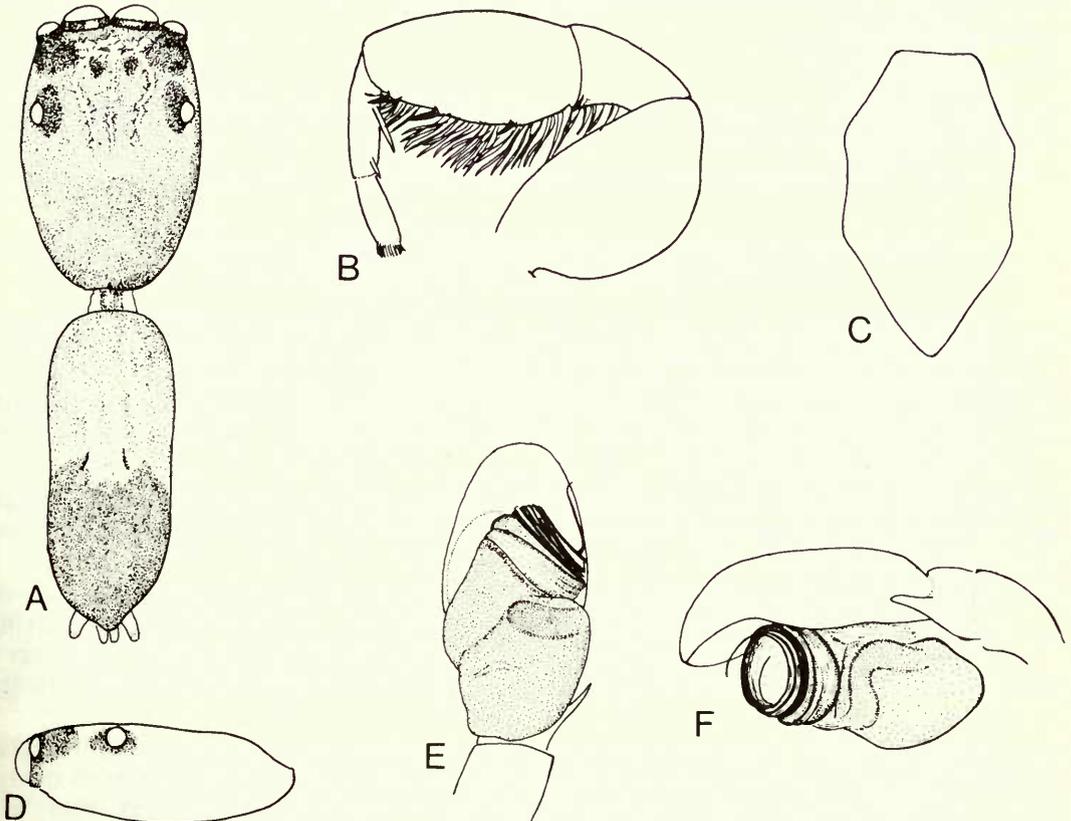


Fig. 2 *Marengo lyrifera* sp. n., holotype ♂: (A) dorsal view; (B) leg I; (C) sternum; (D) carapace, lateral view; (E) palp, ventral view; (F) palp, lateral view.

*Marengo lyrifera* sp. n.

(Fig. 2A-F)

DIAGNOSIS. *M. lyrifera* is the only species of *Marengo* to have punctured-reticulate sculpturing in the eye region (Pl. 2d). Its affinities are uncertain.

FEMALE. Unknown.

MALE HOLOTYPE. *Carapace* (Fig. 2A, D): punctured-reticulate; orange-brown with lyriform pattern of yellowish guanin in eye region. *Eyes*: with black surrounds; anteriors contiguous with apices level, fringed with white hairs. *Clypeus*: edged with blackish. *Chelicerae*: medium, slightly porrect with inner margins excavated; orange-brown; promargin and retromargin with 3 teeth. *Maxillae*: blades rounded, slightly convergent, each with two minute denticles on outer margin (best seen in venterolateral view when legs I have been removed); light yellowish orange. *Labium*: about as long as broad; dark orange-brown. *Sternum* (Fig. 2C): pale yellow-orange. *Abdomen* (Fig. 2A): pale yellow-brown lightly tinged with blackish with the posterior blackish; spinnerets light yellow. *Legs*: legs I (Fig. 2B): massive, coxae, trochanters, femora, patellae and tibiae grossly enlarged; ventral tibial fringe composed of orange-brown hairs; spines robust with moderately developed socket flanges; light orange with tarsi and metatarsi light yellow. Remaining legs pale yellowish with some blackish prolateral streaks. Spination: femora: I D 0-1-1, II D 0-2-1, III D 0-1-1, IV D 1-1-2; tibiae I V 2-2-2; II V 1-1-0; metatarsi I V 0-2-2, II V 1-0-1, P 0-0-1. *Palp* (Fig. 2E-F): light orange.

*Dimensions* (mm): total length 3.92; carapace length 1.72, breadth 1.16; abdomen length 1.96; eyes anterior row 1.0, middle row 0.92, posterior row 1.1; quadrangle length 0.64. *Ratios*: AM : AL : PM : PL :: 8 : 4.5 : 1 : 4.5; AL-PM-PL: 5-5.5.

VARIATION. Not observed.

DISTRIBUTION. Angola.

MATERIAL EXAMINED. Holotype ♂, ANGOLA, Lake Calundo, 11.48S, 20.52E; 18.xi.1954 (*A. de Barros Machado*, Ang. 4414.5).

ETYMOLOGY. The specific name refers to the carapace pattern.

*Marengo crassipes* Peckham & Peckham

(Figs 3A-F; 4A-F; Pls 1d-f; 2a-c)

*Marengo crassipes* Peckham & Peckham, 1892 : 66, pl. V, fig. 4, 4a-c, ♀. LECTOTYPE ♀ (here designated) Sri Lanka (MCZ, Harvard) [Examined]. Simon, 1900 : 401; 1901 : 488-492. Petrunkevitch, 1928 : 182. Roewer, 1954 : 938. Bonnet, 1957 : 2714. Prószyński, 1971 : 427.

*Marengo nitida* Simon, 1900 : 401, ♂. LECTOTYPE ♂ (here designated) Sri Lanka, Kandy (MNHN, Paris) [Examined]. Simon, 1901 : 488-491. Sherriffs, 1931 : 539. Roewer, 1954 : 938. Bonnet, 1957 : 2714. Prószyński, 1971 : 427. *Syn. n.*

*Marengo crassipes* and *M. nitida* have both been taken from the same locality (Kandy, Sri Lanka) and it is almost certain that *nitida* known only from the male is conspecific with *crassipes*, known only from the female.

DIAGNOSIS. *M. crassipes* is most closely related to *M. inornata* (Simon) and *M. striatipes* Simon. Females are fairly distinctive and can be readily distinguished by the white abdominal markings (Fig. 3A). Males are characterized by the shiny abdomen and similar, but suppressed markings of the female. A more positive male diagnosis cannot be given as males of *inornata* and *striatipes* are unknown.

MALE FROM SRI LANKA (lectotype of *M. nitida*). *Carapace* (Fig. 4B): eye region raised reticulate with setae (Pl. 1d-f), thoracic part papillate-falsifoveate with setae (Pl. 2a-c); reddish orange, paler in eye region with scanty white haired bands just behind PL and on thorax. *Eyes*: with black surrounds; anteriors contiguous with apices slightly recurved, fringed with whitish hairs. *Clypeus*: sparsely fringed with fine light orange hairs. *Chelicerae*: small, more or less vertical with inner margins excavated; orange-brown; teeth not examined. *Maxillae* (Fig. 4D): blades

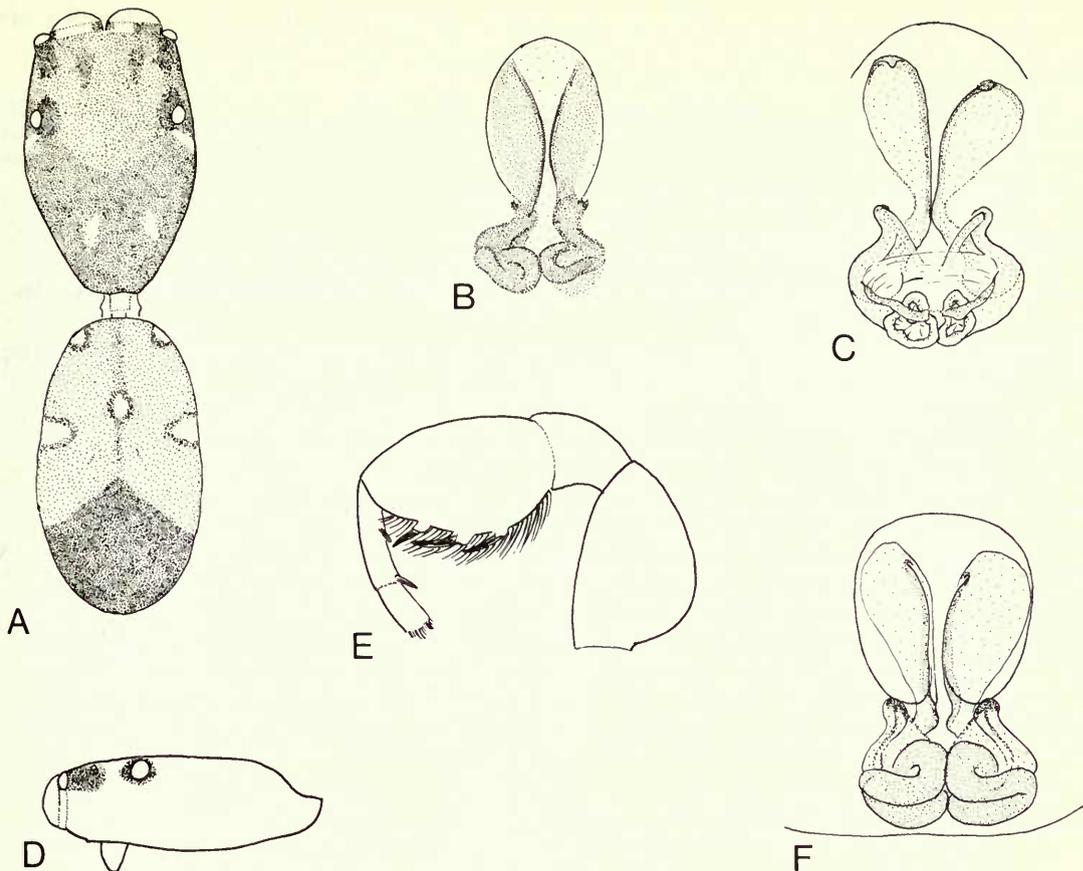


Fig. 3 *Marengo crassipes* Simon, ♀: (A) dorsal view; (B) epigyne; (C) vulva, ventral view; (D) carapace, lateral view; (E) leg I; (F) vulva, ventral view.

angular, light orange. *Labium*: with slight lateral depressions; pale orange. *Sternum* (Fig. 4F): light orange, shiny with shallow depressions opposite coxae I. *Abdomen* (Fig. 4B): scutum glossy orange-brown with faint blackish posterior and two curved impressions; venter light yellowish with blackish mottling; sparsely covered with fine short light orange hairs, and with vague lateral white haired patches; spinnerets pale yellow. *Legs*: legs I massive, coxae, trochanters, femora, patellae and tibiae grossly enlarged; ventral tibial fringe composed of light brownish hairs; spines robust with well-developed socket flanges; generally orange-brown, but distal part of metatarsi and tarsi whitish. Remaining legs light yellow with blackish pro lateral streaks. Spination: femora: I D 0-1-1, II-III D 0-0-2, IV D 0-0-1; tibiae: I V 0-3-1, II V 1-0-0; metatarsi: I V 0-2-2. *Palp* (Fig. 4C, E): femora light yellow-brown, distal segments whitish.

*Dimensions* (mm): total length 3.24; carapace length 1.68, breadth 1.20; abdomen length 1.60; eyes anterior row 0.92, middle row 0.86, posterior row 1.04; quadrangle length 0.61. *Ratios*: AM : AL : PM : PL :: 9 : 4 : 0.75 : 3.5; AL-PM-PL: 4-6.

FEMALE FROM SRI LANKA. Very similar to male but abdominal pattern much more distinctive. *Chelicerae*: small, vertical, inner margins not excavated; orange-brown, shiny; promargin with 2 teeth, retromargin with 3 or 5. *Abdomen* (Fig. 3A): scutum lacking; light yellowish with black posterior, and pattern of shiny, white haired spots bordered with black, also a median sooty band from anterior margin to posterior black region; spinnerets light yellowish. *Legs* more or less as in male. Spination: femora: I D 0-1-0; tibiae: I V 0-3-2, II V 0-1-0; metatarsi: I V 2-0-2. *Palp*: pale yellow. *Epigyne* (Fig. 3B, C, F).

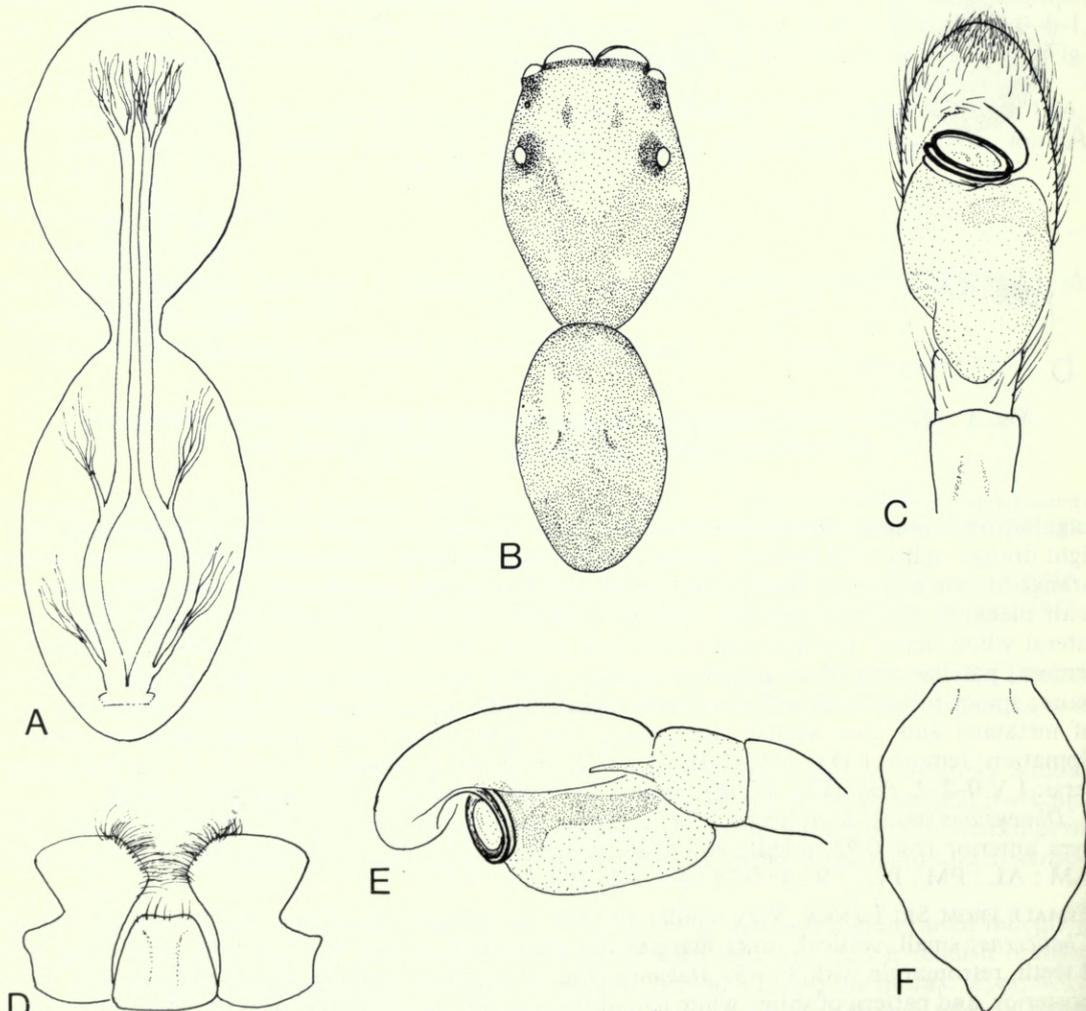
*Dimensions* (mm): total length 3.20; carapace length 1.48; breadth 0.96; abdomen length 1.64; eyes anterior row 0.80, middle row 0.76, posterior row 0.90; quadrangle length 0.56. *Ratios*: AM : AL : PM : PL :: 7.5 : 3 : 0.6 : 3.5; AL-PM-PL: 4-4.5.

**VARIATION.** ♂ total length varies from 3.0 to 3.54 mm, carapace length 1.56-1.76 mm (four specimens). ♀ total length varies from 3.2 to 3.54 mm, carapace length 1.48-1.56 mm (three specimens).

**DISTRIBUTION.** ? India, Sri Lanka.

**MATERIAL EXAMINED.** Type data given in synonymy. SRI LANKA: Galle, 2 ♂♂, (*E. Simon*); Kandy, 2 ♀♀ (*E. Simon*) (MNHN, Paris).

Sherriffs (1931) records this species from Koyencolam, Travancore, Southern India, but the specimen, a male, has not been examined.



**Fig. 4** *Marengo crassipes* Simon, ♂: (A) tracheal system, schematic; (B) dorsal view; (C) palp, ventral view; (D) maxillae; (E) palp, lateral view; (F) sternum. (B-F, lectotype ♂ of *M. nitida* Simon.)

*Marengo striatipes* Simon

(Fig. 5A–D)

*Marengo striatipes* Simon, 1900 : 400, ♀. LECTOTYPE ♀ (here designated) Sri Lanka, Colombo (MNHN, Paris) [Examined]. Simon, 1901 : 488–491. Sherriffs, 1931 : 538. Roewer, 1954 : 938. Bonnet, 1957 : 2714. Prószyński, 1971 : 427.

DIAGNOSIS. *M. striatipes* is a fairly distinctive species readily separated from other *Marengo* in the Oriental region by the shape of the carapace (Fig. 5B) and the more or less slender femora I (Fig. 5C). The affinities are uncertain but the epigyne is similar to those found in *M. crassipes* Simon and *M. inornata* (Simon).

MALE. Unknown.

FEMALE LECTOTYPE. *Carapace* (Fig. 5A, B): eye region finely rugulose with moderately numerous punctures, thoracic part moderately papillate-falsifoveate with setae; orange-brown, shiny. *Eyes*: with black surrounds; anteriors contiguous with apices recurved, fringed with whitish hairs. *Clypeus*: very sparsely fringed with light orange hairs. *Chelicerae*: small, vertical, inner margins not excavated; pale yellow-brown, shiny. *Maxillae*: blades more or less rounded, convergent; light yellow-brown, shiny. *Labium*: about as long as broad; brownish black. *Sternum*: elongate scutiform; orange-brown tinged with blackish, shiny. *Abdomen* (Fig. 5A): orange-brown tinged with blackish with two whitish spots joined by a transverse band; spinnerets pale yellow tinged with black. *Legs*: legs I (Fig. 5C) with patellae and tibiae grossly enlarged; ventral tibial fringe composed of brown-black lanceolate hairs; spines robust with well-developed socket flanges; femora light yellow with black prolateral and dorsal stripes, patellae light yellow with blackish distal prolateral edging, tibiae orange-brown; tarsi and metatarsi light yellow, the latter with short prolateral stripes proximally. Remaining legs light yellow with black prolateral stripes. Spination: tibiae: I V 0–2–4; metatarsi: I V 0–2–2. *Palp*: light yellow. *Epigyne* (Fig. 5D): vulva not examined.

*Dimensions* (mm): total length 2·64; carapace length 1·16, breadth 0·78; abdomen length 1·36; eyes anterior row 0·65, middle row 0·60, posterior row 0·70; quadrangle length 0·46. *Ratios*: AM : AL : PM : PL :: 6 : 2·5 : 0·6 : 2·5; AL–PM–PL: 3–4.

VARIATION. Not observed.

DISTRIBUTION. Sri Lanka.

MATERIAL EXAMINED. Lectotype female.

*Marengo inornata* (Simon) comb. nov.

(Fig. 6A–E)

*Philates inornatus* Simon, 1900 : 403, ♀. LECTOTYPE ♀ (here designated) Sri Lanka, Kandy (MNHN, Paris) [Examined]. Simon, 1901 : 491, 493. Roewer, 1954 : 938. Bonnet, 1958 : 3537. Prószyński, 1971 : 457.

DIAGNOSIS. *M. inornata* is most closely related to *M. crassipes* Simon and *M. striatipes* Simon, but may be distinguished by the shape of the carapace (Fig. 6D), the apparent absence of distinct markings, the short pedicel and enlarged femora I (Fig. 6B).

MALE. Unknown.

FEMALE LECTOTYPE. *Carapace* (Fig. 6A, D): raised reticulate with setae; dark orange-brown with scanty thoracic patches composed of short, fine clear whitish hairs. *Eyes*: with blackish surrounds except AM; anteriors subcontiguous with apices level, fringed with brown and fine white hairs. *Clypeus*: sparsely fringed with fine whitish hairs. *Chelicerae*: small, vertical, inner margins not excavated; light brown; teeth not examined. *Maxillae*: convergent, outer distal corner of blade slightly extended. *Labium*: slightly broader than long; orange-brown. *Sternum* (Fig. 6C): orange-brown, shiny. *Abdomen* (Fig. 6A, D): light brownish orange with small brownish patch and two impressed dots anteriorly; clothed with fine short light orange hairs with an obscure transverse

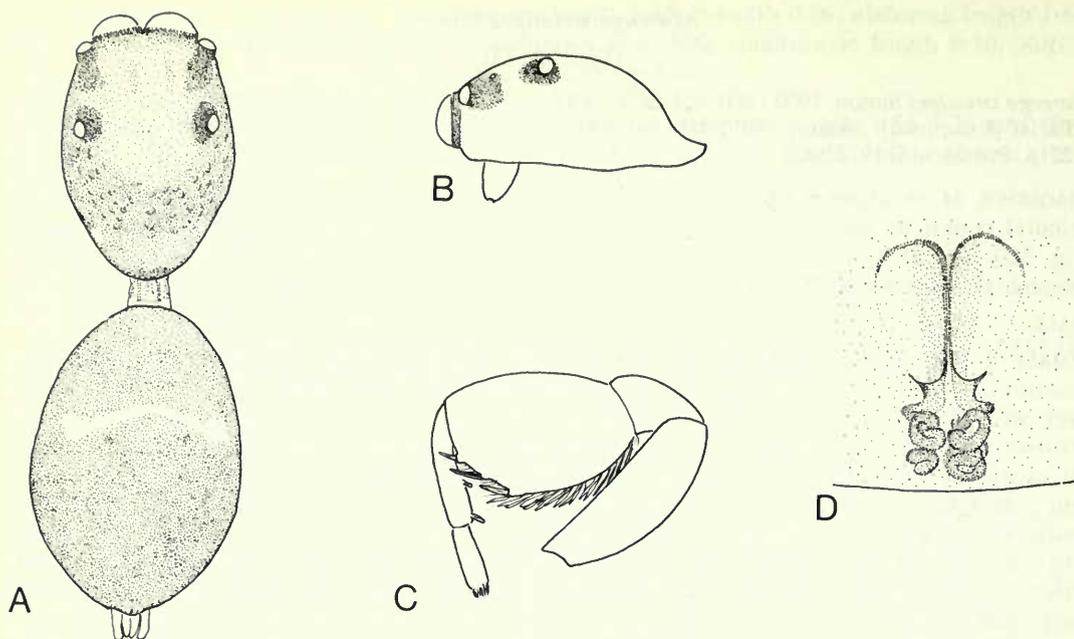


Fig. 5 *Marengo striatipes* Simon, lectotype ♀: (A) dorsal view; (B) carapace, lateral view; (C) leg I; (D) epigyne.

band of fine clear hairs; spinnerets light brownish orange. *Legs*: legs I (Fig. 6B): with coxae, trochanters, femora, patellae and tibiae grossly enlarged; ventral tibial fringe of brown-black hairs; spines robust with moderately well developed socket flanges; orange-brown but metatarsi and tarsi lighter. Remaining legs yellow-brown with blackish brown femora and blackish brown prolateral streaks on patellae and tibiae. Spination: femora: IV D 0-0-1; tibiae: I V 1-1-2, II V 0-1-0. *Palp*: femora and patella brown, tibiae and tarsi yellow. *Epigyne* (Fig. 6E): small and similar to that of *M. crassipes*.

*Dimensions* (mm): total length 3.76; carapace length 1.52, breadth 1.0; abdomen length 2.2; eyes anterior row 0.88, middle row 0.84, posterior row 0.98, quadrangle length 0.60. *Ratios*: AM : AL : PM : PL :: 8 : 3.5 : 0.75 : 3.5; AL-PM-PL; 6-11.

VARIATION. Not observed.

DISTRIBUTION. Sri Lanka.

MATERIAL EXAMINED. Lectotype female.

*Marengo porosa* sp. n.

(Fig. 7A-G; Pls 2e-f; 3a-f)

DIAGNOSIS. *M. porosa* is a very distinctive species readily distinguished from all other *Marengo* by having four eye rows (Fig. 7A) and a perforated thorax (Pls 2f; 3c-e). Its affinities are uncertain.

MALE. Unknown.

FEMALE HOLOTYPE. *Carapace* (Fig. 7A, F; Pls 2e-f; 3a-e): papillate-falsifoveate with setae and scattered papillae (Pl. 3a-b); thoracic part perforated, each cavity with an associated piliferous papilla (Pl. 3c-e); below PL and on the sides of the head the papillae are low or absent, but the setae remain (Pl. 2e-f); dark orange-brown with eye region lighter. *Eyes*: on tubercles; with black surrounds; anteriors contiguous with apices strongly recurved, sparsely fringed with white hairs. *Clypeus*: with several stiff hairs. *Chelicerae*: small, vertical, inner margins not excavated; yellow-

brown suffused with some black, shiny; promargin with 2 teeth, retromargin with 4. *Maxillae*: blades more or less rounded, convergent; light orange tinged with some black. *Labium*: about as long as broad; light orange tinged with some black. *Sternum* (Fig. 7G): orange. *Abdomen* (Fig. 7A, F): brown-black, shiny with white lateral spots and dorsal bands; venter whitish; spinnerets light yellow-brown. *Legs*: legs I (Fig. 7C; Pl. 3f): with coxae, trochanters, femora, patella and tibiae enlarged; ventral tibial fringe composed of stiff black hairs in a line restricted to proventral side of segment; spines robust with well developed socket flanges; yellow-brown to orange-brown with blackish markings. Spination: femora: I D 0-0-1; tibiae: I V 2-4-2, II V 2-2-0; metatarsi: I V 0-2-2, II V 2-0-2. *Palp*: femora distally and patellae brown-black, rest of femora and other segments white. *Epigyne* (Fig. 7B, D, E): rather pale.

*Dimensions* (mm): total length 3.96; carapace length 2.08, breadth 1.20; abdomen length 1.76; eyes anterior row 1.06, middle row 0.89, posterior row 1.14; quadrangle length 0.92. *Ratios*: AM : AL : PM : PL :: 11.5 : 5.6 : 1 : 5.6; AL-PM-PL: 6-7.

*VARIATION*. A paratype ♀ measures 4.20 mm total length, 2.04 mm carapace length.

*DISTRIBUTION*. Malaysia.

*MATERIAL EXAMINED*. Holotype ♀, MALAYSIA, Frasers Hill, Jeriav Waterfall area, on vine, 7.ix.1973 (*A. D. Blest*, vial 21D) (BMNH reg. no. 1977.4.29.8). Paratype: MALAYSIA: Frasers Hill, 1 ♀, 6.ix.1973 (*A. D. Blest*, vial 18B) (BMNH).

*REMARKS*. The four eye rows and unusual sculpturing suggest that *M. porosa* could have been described in a new genus. However, such a proposal cannot be justified at the present time in

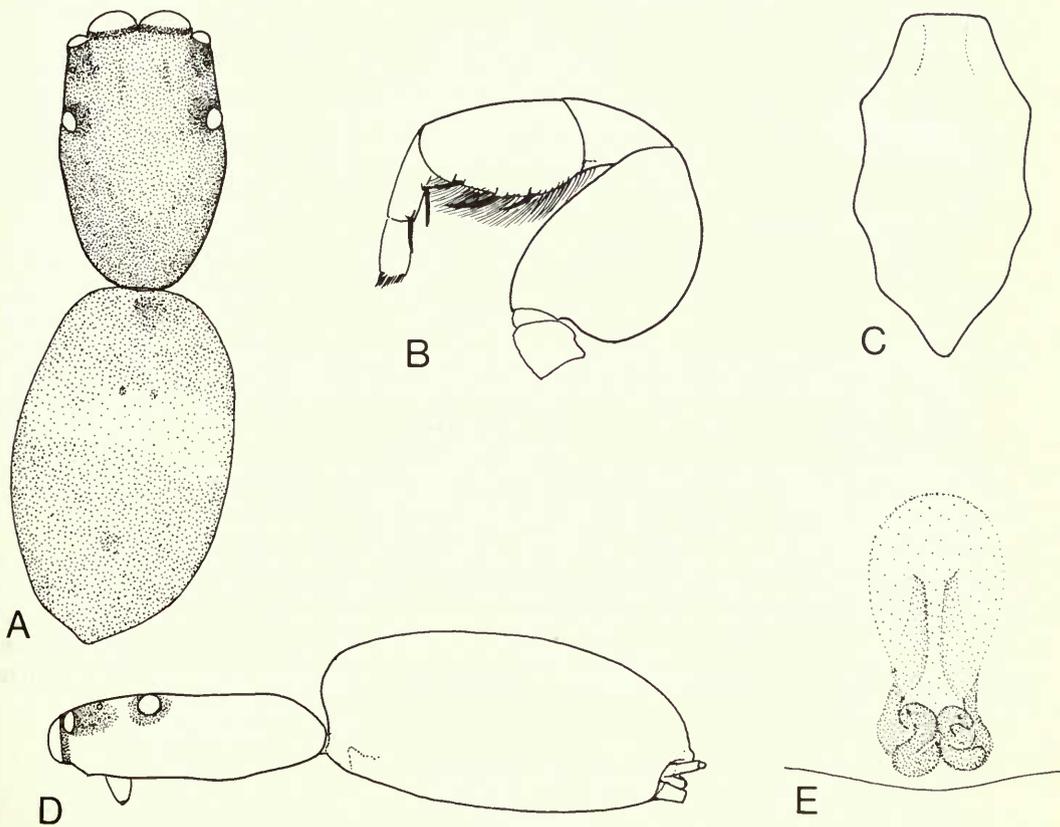


Fig. 6 *Marengo inornata* (Simon), lectotype ♀: (A) dorsal view; (B) leg I; (C) sternum; (D) lateral view; (E) epigyne.

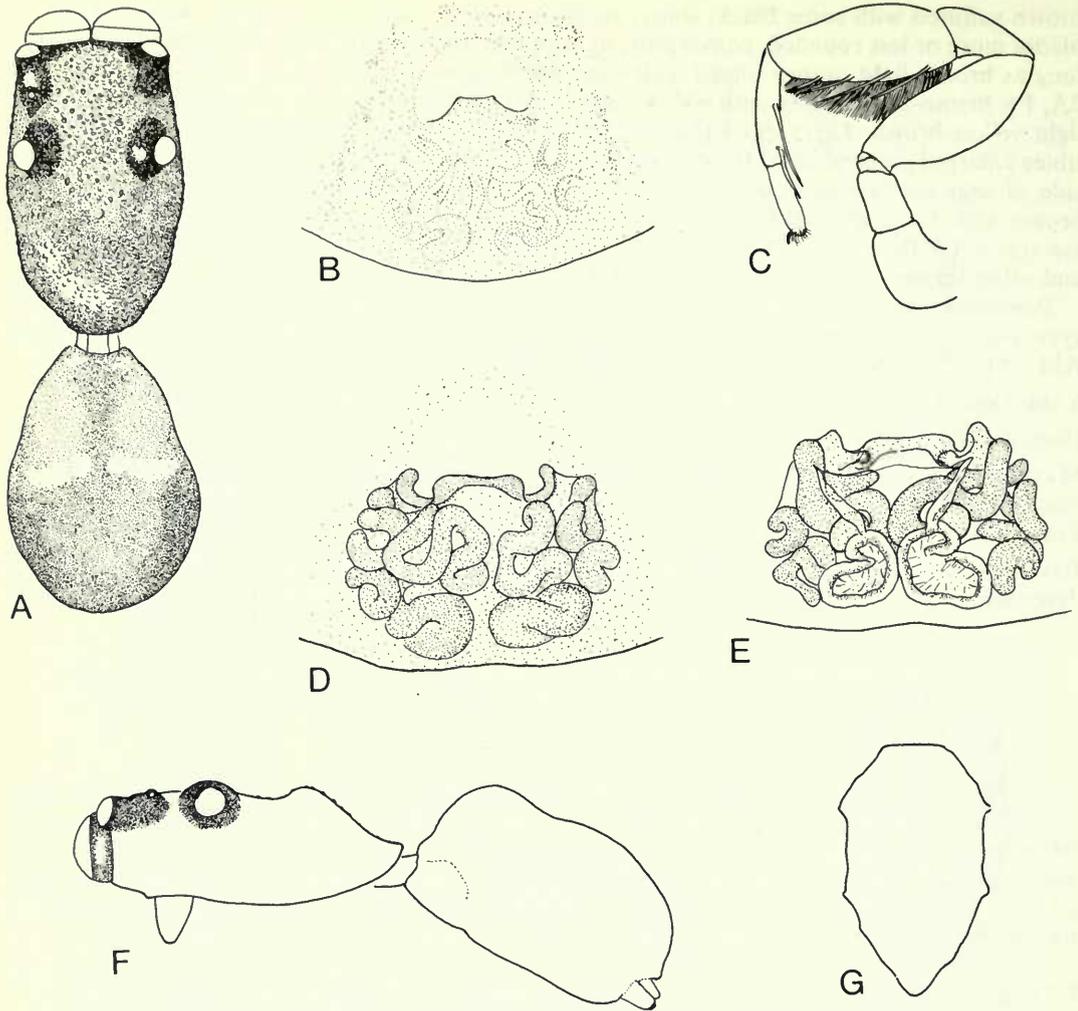


Fig. 7 *Marengo porosa* sp. n., holotype ♀: (A) dorsal view; (B) epigyne; (C) leg I; (D) vulva, ventral view; (E) vulva, dorsal view; (F) lateral view; (G) sternum.

view of the systematic difficulties which occur in the Salticidae. It is always possible that an available genus already exists among the numerous, poorly known, monotypic genera which have been described in this family, e.g. see Wanless (1977/8). Furthermore, the creation of numerous genera tends to obscure relationships which can be more clearly and less formally expressed in terms of 'species groups' or in cases where affinities are unknown as 'species sola'. One has also to consider the fact that in warmer regions of the world there are many new species to be described which will inevitably fill gaps in our knowledge, alter generic concepts and lead to a better understanding of phylogenies so that in time, a more balanced judgement can be brought to bear on the problems found in this family.

*Marengo thomsoni* sp. n.

(Fig. 8A-F)

DIAGNOSIS. *M. thomsoni* is a very distinctive species readily separated from all other species of *Marengo* by the shape of the carapace (Fig. 8A, F). Its affinities are uncertain but the epigyne

(Fig. 8B, D, E) would seem to show some similarities with those of *M. coriacea* Simon and *M. porosa* sp. n.

MALE. Unknown.

FEMALE HOLOTYPE. *Carapace* (Fig. 8A, F): very finely rugulose, shiny; orange-brown with blackish markings, with a series of four white haired spots in thoracic depression and a white haired marginal spot at level of coxae III. *Eyes*: anteriors contiguous with apices procurved, sparsely fringed with fine whitish hairs. *Clypeus*: brown tinged with blackish. *Chelicerae*: small, vertical, inner margins not excavated; yellow-brown; teeth not examined. *Maxillae*: more or less parallel, blades slightly truncate; yellow-brown. *Labium*: about as long as broad; yellow-brown with some blackish. *Sternum* (Fig. 8C): yellow-brown with posterior margins, darker, shiny. *Pedichel*: rather long and stalk like. *Abdomen* (Fig. 8A, F): black with an ill-defined glossy, brown-black scutum, which has a violet sheen under some lights; sparsely clothed with very fine hairs and with three white haired spots; spinnerets light yellow. *Legs*: legs I: coxae, trochanters, femora, patellae and tibiae enlarged; ventral tibial fringe lacking; spines slender, socket flanges apparently lacking;

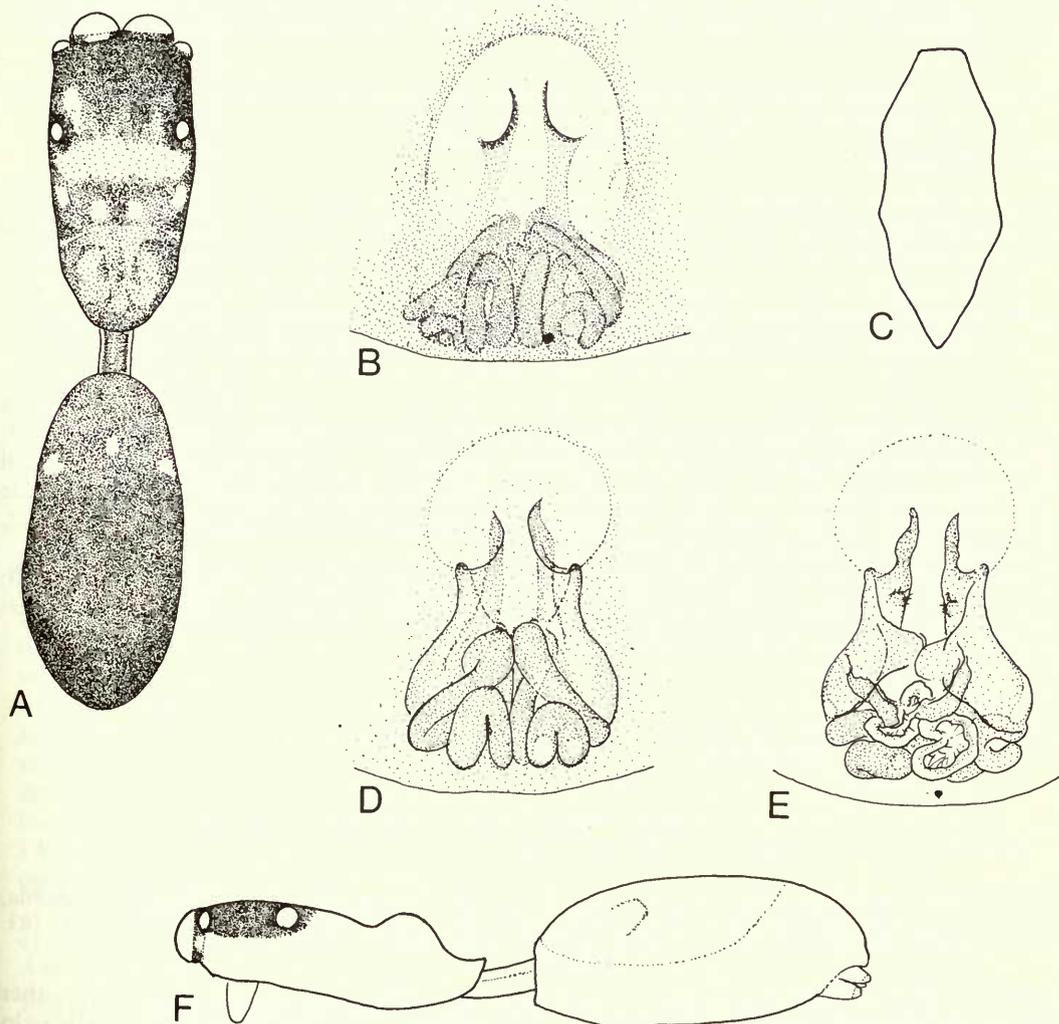


Fig. 8 *Marengo thomsoni* sp. n., holotype ♀: (A) dorsal view; (B) epigyne; (C) sternum; (D) vulva, ventral view; (E) vulva, dorsal view; (F) lateral view.

yellow-brown but prolateral surface of tibiae blackish. Legs II slender, colour as I. Legs III-IV yellow-brown to pale yellow-brown with black markings especially on femora, patellae and tibiae. Spination: tibiae: I V 2-1-2, II V 0-1-0; metatarsi I V 0-2-2. *Palp*: pale yellow. *Epigyne* (Fig. 8B, D, E).

*Dimensions* (mm): total length 2.48; carapace length 1.08, breadth 0.54; abdomen length 1.24; eyes anterior row 0.53, middle row 0.48, posterior row 0.54; quadrangle length 0.36. *Ratios*: AM : AL : PM : PL :: 5.5 : 2.4 : 0.5 : 2.5; AL-PM-PL: 3-3.

VARIATION. Unknown.

DISTRIBUTION. Borneo.

MATERIAL EXAMINED. Holotype ♂, BORNEO, Makunjung, 21.iv.1976 (*R. Thomson*) (BMNH reg. no. 1977.4.29.9).

### *Marengo chelifer* Simon

(Fig. 9A-F)

*Marengo chelifer* Simon, 1900 : 400, ♂. LECTOTYPE ♂ (here designated) Java, Buitenzorg (MNHN, Paris) [Examined]. Simon, 1901 : 488-491. Roewer, 1954 : 938. Bonnet, 1957 : 2714. Prószyński, 1971 : 427.

DIAGNOSIS. *M. chelifer* can be distinguished from other known species by the shape of the carapace (Fig. 9A, C), slender femora I and elongate first legs (Fig. 9D).

FEMALE. Unknown.

MALE LECTOTYPE. *Carapace* (Fig. 9A, C): raised reticulate with setae in eye region to 'radiating' papillate-falsifoveate with setae on thoracic part; reddish orange with very scanty, white haired bands just behind PL and on thoracic part. *Eyes*: with black surrounds; anteriors contiguous with apices more or less level, sparsely fringed with whitish hairs. *Clypeus*: sparsely fringed with light orange hairs. *Chelicerae*: small, vertical, inner margins not excavated; light yellow-brown; teeth not examined. *Maxillae*: blades slightly convergent; light orange. *Labium*: about as long as broad; orange with lighter tip. *Sternum* (Fig. 9F): orange, shiny. *Abdomen* (Fig. 9A): light yellowish with a shiny light orange scutum marked with orange-brown and a pair of scanty white haired spots on the sides. Spinnerets light yellowish. *Legs*: legs I (Fig. 9E): elongate with enlarged tibiae; ventral tibial fringe composed of brown-black lanceolate hairs; spines robust, socket flanges well developed; orange except for light yellowish tarsi. Remaining legs light yellowish with some blackish prolateral stripes. Spination: femora: I P 0-1-0, II-IV D 0-0-1; tibiae: I V 0-4-2, II V 1-0-0; metatarsi I V 0-2-2. *Palp* (Fig. 9B, E).

*Dimensions* (mm): total length 2.80; carapace length 1.30, breadth 0.90; abdomen length 1.50; eyes anterior row 0.72, middle row 0.67, posterior row 0.78; quadrangle length 0.51. *Ratios*: AM : AL : PM : PL :: 6.5 : 3 : 0.75 : 3; AL-PM-PL: 4-3.5.

VARIATION. Unknown.

DISTRIBUTION. Java.

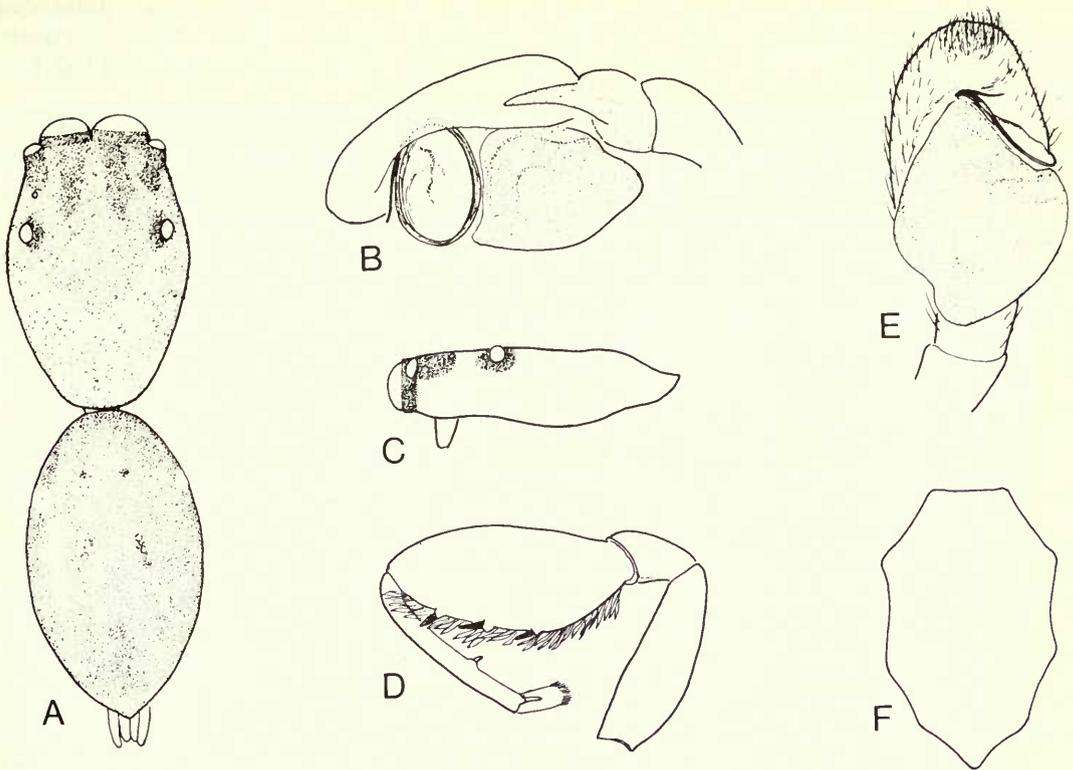
MATERIAL EXAMINED. Lectotype ♂.

### *Marengo grammica* (Simon) comb. nov.

(Fig. 10A-J)

*Philates grammicus* Simon, 1900 : 402, ♂, ♀. LECTOTYPE ♂ (here designated) Philippines, Manila, Quingua, Antipolo (MNHN, Paris) [Examined] Simon, 1901 : 488, 491, 493. Petrunkevitch, 1928 : 183. Roewer, 1954 : 938. Bonnet, 1958 : 3537. Prószyński, 1971 : 457.

DIAGNOSIS. *M. grammica* is a fairly distinctive species, which can be separated from other *Marengo* by the female abdominal stripes (Fig. 10B), epigyne (Fig. 10D, H, I) and the male palp (Fig. 10C, J). It resembles *M. inornata* (Simon) by having a short pedicel, but in other respects its affinities are uncertain.



**Fig. 9** *Marengo chelifer* Simon, lectotype ♂: (A) dorsal view; (B) palp, lateral view; (C) carapace, lateral view; (D) leg I; (E) palp, ventral view; (F) sternum.

**MALE LECTOTYPE.** *Carapace* (Fig. 10A, I): eye region raised reticulate with setae grading to papillate-falsifoveate with setae on thoracic part; reddish brown with fine whitish setae and scanty white haired bands behind PL and on thoracic slope. *Eyes*: with black surrounds; anteriors contiguous with apices very slightly procurved, fringed with whitish hairs. *Clypeus*: very scantily fringed with fine whitish hairs. *Chelicerae*: small, more or less vertical, inner margins, slightly excavated; orange-brown; promargin with 3 teeth, retromargin with 4. *Maxillae*: blades convergent, more or less rounded with depressions (to accommodate swollen coxae); light orange-brown. *Labium*: slightly broader than long; dark orange-brown. *Pedicel*: short. *Abdomen*: yellow-brown lightly suffused with black, with entire dorsal scuta orange to dark orange, clothed with fine, clear whitish hairs. Spinnerets: posteriors black, medians and anteriors light yellow. *Legs*: legs I (Fig. 10E): massive, coxae, trochanters, femora, patellae and tibiae grossly enlarged; ventral tibial fringe composed of stiff brown-black hairs; spines slender, socket flanges not well developed; orange-brown, but tarsi and metatarsi lighter. Legs II–III light yellow, with blackish femoral markings. Legs IV as III but distal half of femora orange-brown. Spination: tibiae: I V 0–1–4, II V 0–1–0; metatarsi: I V 0–2–2. *Palp* (Fig. 10C, J): orange-brown with whitish yellow cymbium.

*Dimensions* (mm): total length 3.6; carapace length 1.78, breadth 1.22; abdomen length 1.82; eyes anterior row 1.08, middle row 0.96, posterior row 1.12; quadrangle length 0.74. *Ratios*: AM : AL : PM : PL :: 9.5 : 4.5 : 0.75 : 5; AL–PM–PL: 5–6.

**FEMALE PARALECTOTYPE.** Similar to male except for the following. *Carapace* (Fig. 10B): broader posteriorly. *Eyes*: anteriors more strongly procurved. *Chelicerae*: not excavated; promargin with 1 tooth retromargin with 3 or 4. *Abdomen* (Fig. 10B): scuta lacking; orange-brown with light yellowish stripes from mid region to spinnerets; clothed with fine short light orange hairs. *Legs*:

legs I enlarged; light yellowish orange with darker markings on tibiae and femora. Remaining legs light yellow-orange with prolateral stripes on all femora and patellae, and tibiae III-IV. Spination: femora: I D 0-0-2, II-IV D 0-0-1; tibiae: I V 1-2-2, II V 0-1-0; metatarsi: I V 0-1-0. Epigyne (Fig. 10D, G, H).

*Dimensions* (mm): total length 3.70; carapace length 1.68, breadth 1.10; abdomen length 2.10; eyes anterior row 1.0, middle row 0.90, posterior row 1.07; quadrangle length 0.70. *Ratios*: AM : AL : PM : PL :: 9 : 4 : 0.75 : 3.5; AL-PM-PL: 5-6.5.

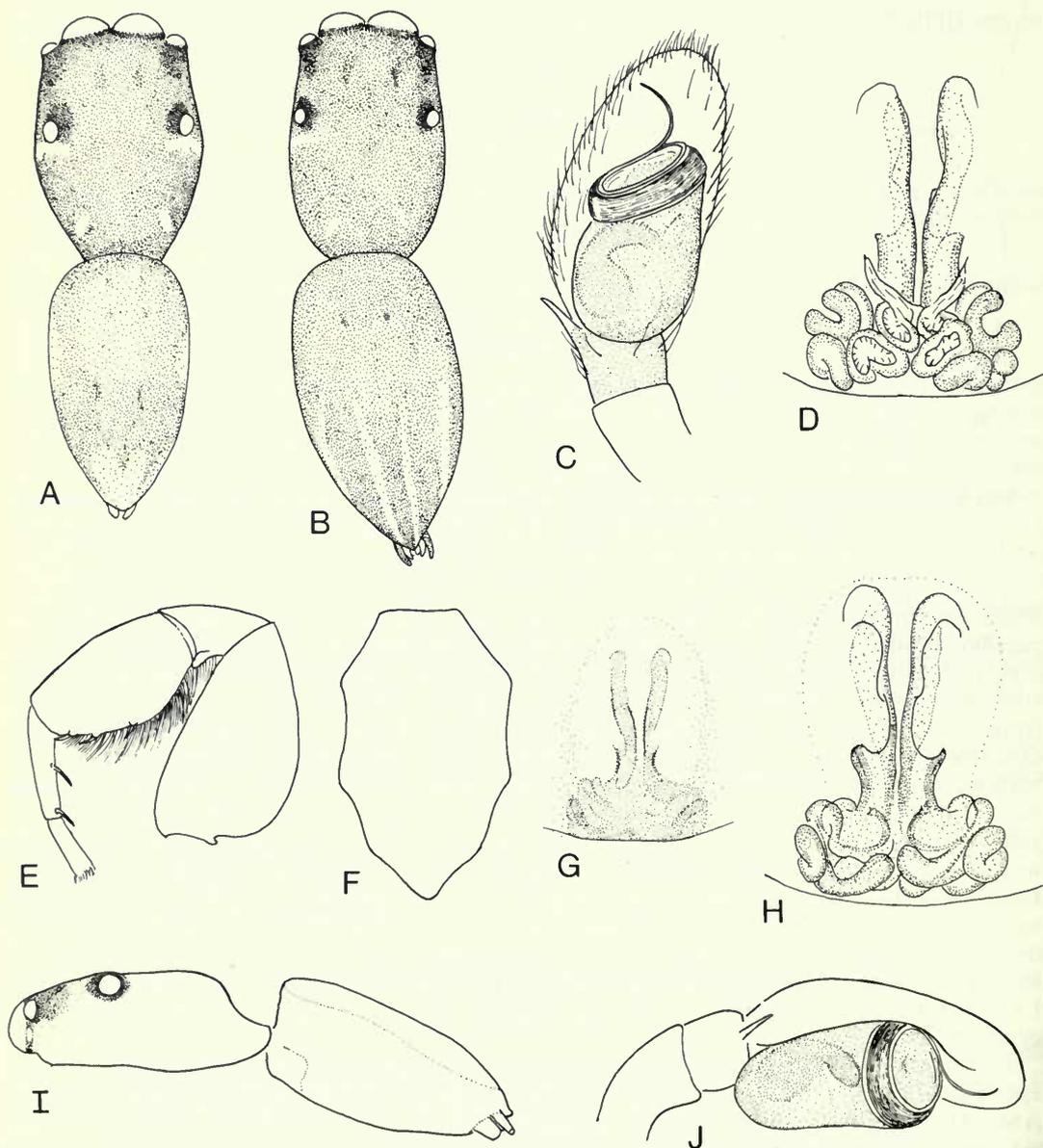


Fig. 10 *Marengo grammica* (Simon), lectotype ♂: (A) dorsal view; (C) palp, ventral view; (E) leg I; (F) sternum; (I) lateral view; (J) palp, lateral view. ♀: (B) dorsal view; (D) vulva, dorsal view; (G) epigyne; (H) vulva, ventral view.

VARIATION. Total length varies from 3.5 to 4.2 mm, carapace length 1.62–1.78 mm (three specimens). The outer abdominal stripes sometimes extend to anterior margin.

DISTRIBUTION. Philippines.

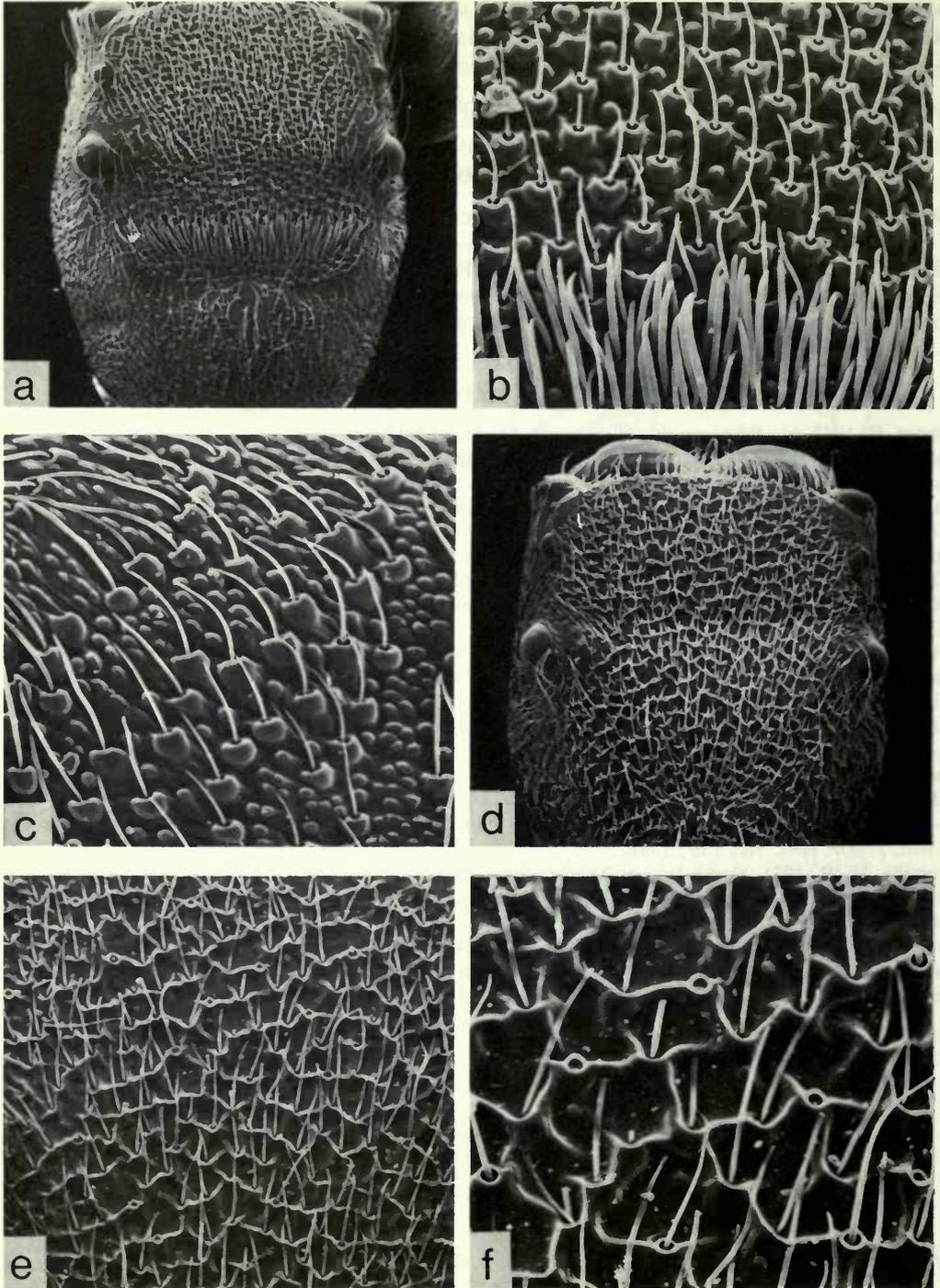
MATERIAL EXAMINED. Lectotype ♂ and three ♀ paralectotypes.

### Acknowledgements

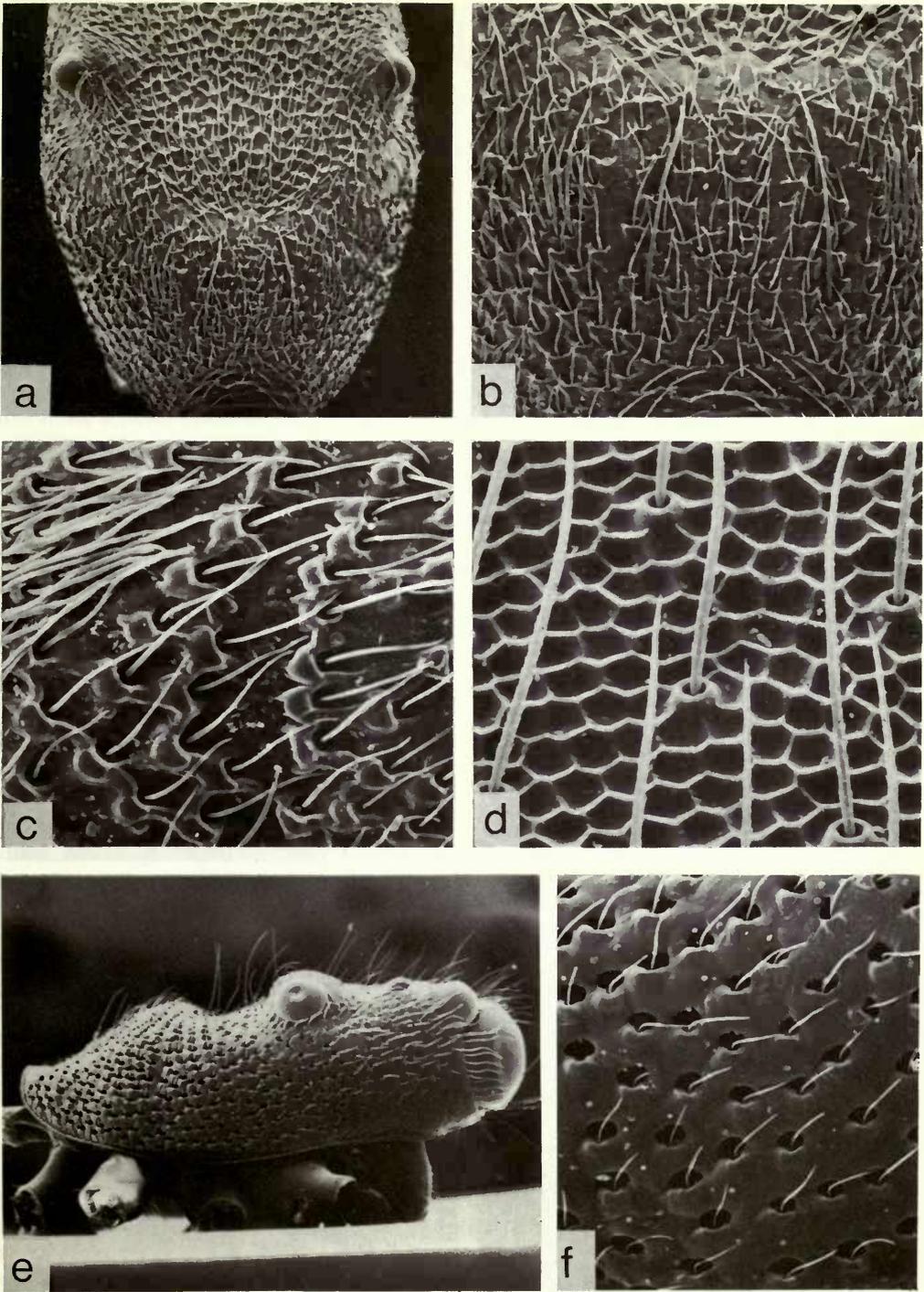
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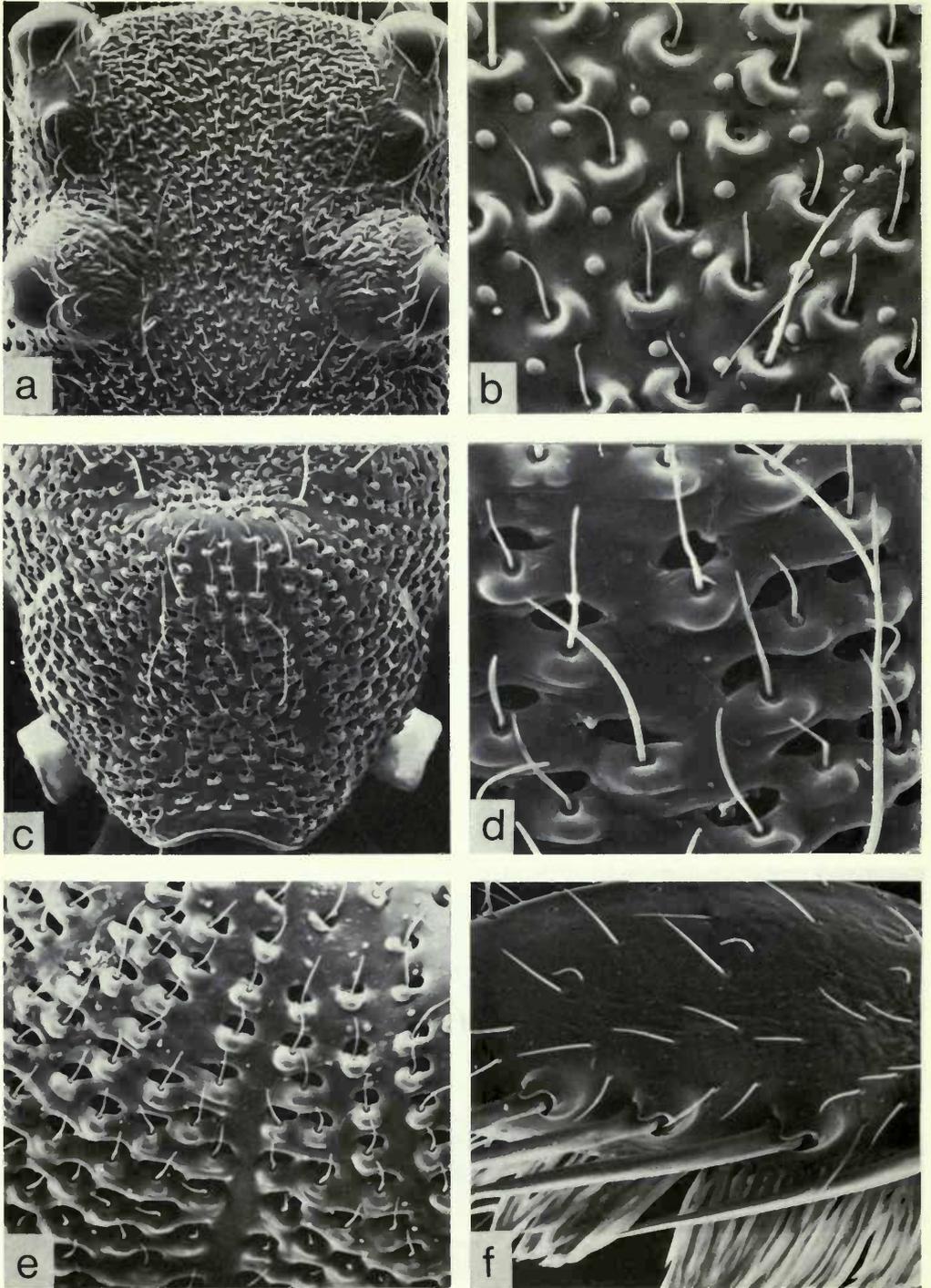
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**Plate 1** Scanning electron micrographs of cuticular sculpture. (a) *Marengo coriacea*, carapace.  $\times 100$ . (b, c) *M. coriacea*, eye region and thoracic sides showing small papillae and larger piliferous papillae.  $\times 500$ . (d) *Marengo crassipes*, carapace.  $\times 100$ . (e, f) *M. crassipes*, eye region showing raised reticulate surface with setae.  $\times 200$  &  $\times 500$ .



**Plate 2** Scanning electron micrographs of cuticular sculpture. (a) *Marengo crassipes*, thoracic part.  $\times 100$ . (b) *M. crassipes* thorax dorsal view, papillate-falsifoveate with setae.  $\times 200$ . (c) *M. crassipes* thorax lateral view, papillate-falsifoveate with setae.  $\times 500$ . (d) Example of punctured-reticulate sculpturing (*Myrmarachne marshalli* Peckham & Peckham).  $\times 500$ . (e) *Marengo porosa* carapace, lateral view.  $\times 50$ . (f) *M. porosa* cephalic area below PL showing perforations and setae.  $\times 200$ .



**Plate 3** Scanning electron micrographs of *Marengo porosa*. (a, b) Eye region, dorsal view; papillate-falsifoveate with setae and scattered papillae.  $\times 100$  &  $\times 500$ . (c-e) Thoracic part, dorsal view showing perforations and associated piliferous papillae.  $\times 50$ ,  $\times 500$  &  $\times 200$ . (f) Leg I showing sockets with well-developed flanges.  $\times 200$ .