

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

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Introduction

Unlike most genera of the spider family Salticidae, *Hispo* Simon, 1886 can be easily recognized by the characteristic form of the carapace and the presence of a constriction behind the posterior median eyes. The genus is represented in both the Oriental and Ethiopian regions and at present includes 11 known species. Several of these were originally described in the genera *Astaenochestes* Simon, 1900 or *Pseudomarengo* Caporiacco, 1947. The later genus was revised by Roewer (1965), however, they are here considered to be synonymous with *Hispo*.

In this paper, the species are divided into two species groups which may be readily separated by the presence or absence of a fovea. The species included in both groups are morphologically similar and in most cases they can be distinguished from one another by the structure of the genitalia, particularly the form of the palpal tibial apophyses in males. The presence or absence of white hairs on the clypeus and the occurrence of furrows or striae on the anterior surface of the chelicerae provide useful characters for separating otherwise similar species. The degree of variation cannot be adequately demonstrated for most species as the genus is not well represented in museum collections. The biology is virtually unknown, some species live in woodland or forest litter and could be considered ant-like, but there is no behavioural evidence to suggest a mimetic relationship with ants.

The measurements were made in the manner described by Wanless (1978a).

Genus *HISPO* Simon

Hispo Simon, 1886 : 393. Type species *Hispo cingulata* Simon, by monotypy. Simon, 1901 : 449, 451, 452; 1903a : 1050. Petrunkevitch, 1928 : 186. Roewer, 1954 : 985. Bonnet, 1957 : 2219. Wanless (1981).

Astaenorchestes Simon, 1900 : 397. Type species *Astaenorchestes frenatus* Simon, by original designation and monotypy. Simon, 1901 : 450–452. Petrunkevitch, 1928 : 185. Roewer, 1954 : 985. Bonnet, 1955 : 766. **Syn. n.**

Pseudomarengo Caporiacco, 1947 : 228. Type species *Pseudomarengo inermis* Caporiacco, by original designation. Roewer, 1954 : 951; 1965 : 32. **Syn. n.**

Although Roewer (1954) and Bonnet (1957) give the year 1885 as the publication date for the genus *Hispo*, the date of publication given on the title page is 'avril 1886'. The confusion arose because the part concerned was issued for the year 1885.

DEFINITION. Small to large spiders ranging from about 3.5 to 8 mm in length. Sexual dimorphism not marked. Distinctive colour markings sometimes present; not hirsute. **Carapace:** very low to moderately high; constricted behind posterior median eyes and usually with two shallow depressions behind anterior medians; fovea present or absent; microsculpturing variable, cuticle sometimes iridescent. **Eyes:** anteriors contiguous, apices level or slightly procurved; posterior median eyes relatively small, closer to anterior laterals than to posterior laterals; posterior row usually narrower than anterior row with a space between the posterior lateral eyes and the lateral margins of the carapace; quadrangle length between 39 and 50 per cent of carapace length. **Clypeus:** very low to low. **Chelicerae:** small to medium, more or less vertical, anterior surface irregularly strigose or smooth, sometimes

with a 'scooped-out' furrow on each chelicera; promargin with 4–6 contiguous teeth, retromarginal teeth similar, but minute more numerous (4–10) and forming a serrated ridge. *Maxillae*: parallel to subparallel, blades more or less rounded. *Labium*: tongue-shaped, about as long as broad or broader than long. *Sternum*: elongate scutiform, sometimes attenuate anteriorly. *Pedichel*: short. *Abdomen*: elongate; scuta absent; spinnerets subequal in length, anterior and posteriors unequally robust, medians slender; colulus apparently lacking; tracheal system (Fig. 5C) (one species examined), arising from transverse slit immediately in front of anterior spinnerets, apparently simply branched and limited to abdomen. *Legs*: moderately long and slender, I and sometimes II enlarged or elongate; fringes usually lacking, spines weak to moderately strong, usually more numerous on posterior legs; claws generally pectinate (difficult to see in most species), tufts present, usually a stiff curved setae lying between claws on legs I–II; scopulae rarely present. *Female palp*: moderately long and slender. *Male palp* (Fig. 1A, B): with branched tibial apophysis, occasionally with small ventral apophysis; cymbium sometimes depressed and sclerotized basally; embolus (e) usually robust, long and curved originating centrally or subapically; conductor (c) a modified part of the embolic shaft, rarely present (Fig. 11A, B); tegulum (t) pleated, and folded distally, the resulting lobe, when present, resembling an apophysis (l) (Fig. 7F); median apophysis (m) small, slender with a distal hook, often difficult to see in lateral view; subtegulum (st) not pleated, seminal reservoir dark, usually indistinct. *Epigyne* Fig. 5G, J): opening paired, indistinct with sclerotized margins; introductory ducts (f) paired, proximally translucent with glandular 'appendixes' (c), distally dark and coiled around the tube connecting the primary and secondary spermathecae; spermathecae dumb-bell-shaped, primary spermathecae (p) small with leaf-like fertilization ducts; secondary spermathecae (s) small to large and globular, on distal margin a lobe-like structure (r) which resembles the stretcher found in some linyphiid spiders.

REMARKS. The epigyne structure of *Hispo bipartita* Simon clearly differs from that described above, but the vulva has not been examined as only one adult female is available for study. In any event the generic placement of *H. bipartita* will have to be reviewed when the related genera *Massagris* Simon, and *Tomocyrra* Simon are revised.

AFFINITIES. *Hispo* is closely related to the genera *Massagris* and *Tomocyrra*, both of which have foveae and a constriction behind the posterior median eyes which are positioned much closer to the anterior laterals than to the posterior laterals. The male palps of *Hispo* although distinctive, show morphological similarities to these genera in the form of the tegulum and median apophysis. It is possible that the *bipartita*-group of *Hispo* may have to be transferred into *Massagris* as the genitalia would appear to be rather similar.

It will also be necessary to re-examine some of the amber salticids described by Petrunkevitch (1942, 1958). The fossil genus *Gorgopsina* Petrunkevitch, is evidently close to *Tomocyrra* and the type species of *Gorgopsina*, *G. frenata* (Koch & Berendt) may well prove to be synonymous with recent *Tomocyrra*.

Wanless (1978b) suggested that the simple tracheal system found in species of *Portia* Karsch indicated a relationship with lyssomanid spiders. However, as *Hispo* does not appear to have any close affinities with known lyssomanid spiders, while possessing a simple tracheal system (Fig. 5C), this proposition will need to be reconsidered when more genera have been examined.

DIAGNOSIS. The *cingulata*-group of species of *Hispo* can be easily distinguished from the genera *Massagris* and *Tomocyrra* by the absence of a fovea. The *bipartita*-group can be distinguished by the very low carapace.

BIOGEOGRAPHY. The present distribution of *Hispo* can suggest historically different patterns of dispersal depending in which period of geological time the genus evolved and the present species came into being. As most species have been described from Madagascar it seems plausible to suggest that *Hispo* evolved in the Malagasy region. If this happened before the disruption of Gondwanaland then vicariance may be responsible for the occurrence of only

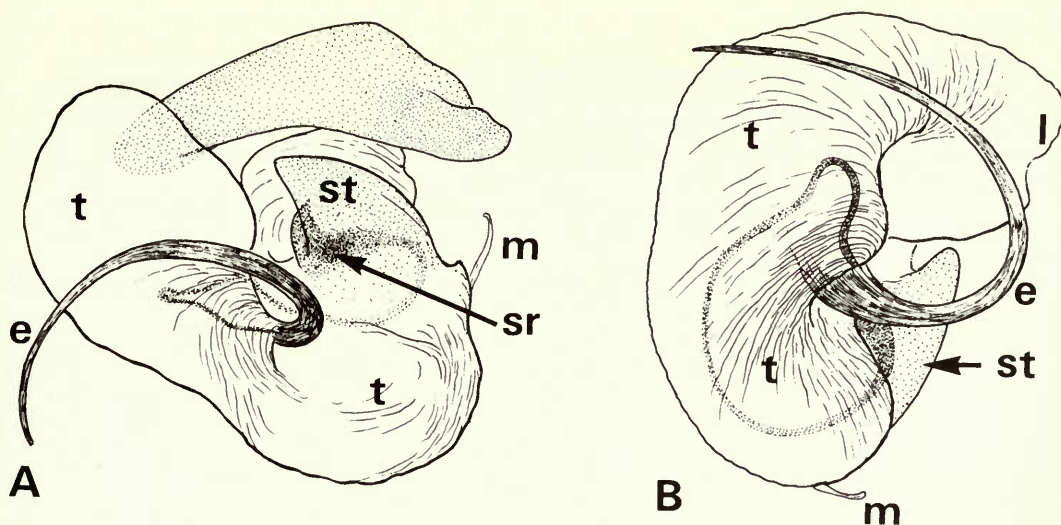


Fig. 1 *Hispo striolata* Simon, ♂, expanded palps: A, lateral view; B, ventral view.

one species in Africa (*H. inermis* (Caporiacco)) and two species in the Seychelles (*H. alboclypea* Wanless and *H. striolata* Simon). It is worth noting that although the Seychellois species are closely related to each other, *H. alboclypea* is evidently closer to *H. inermis*, while *H. striolata*, is closer to *H. pullata* sp. n. from Madagascar. These four species comprise the *striolata*-subgroup which is hopefully of monophyletic origin.

If on the other hand these species reached Africa and the Seychelles after the disruption of Gondwanaland we should not postulate a relict distribution but rather a recent one which may have occurred as a result of aerial dispersal, i.e. ballooning or some other mechanism such as rafting. Platnick (1976) has suggested that vicariance is responsible for most inter-continental distribution patterns in spiders and that the role of ballooning, at least for medium-sized and large ground-dwelling species has been greatly exaggerated. Some salticids are known to balloon as adults, and no doubt, ballooning plays an important role in their distribution particularly at a regional level. However, Platnick is probably correct in his basic hypothesis and we may be sure that some distribution patterns in the Salticidae are the result of vicariance.

If vicariance is responsible for the present distribution patterns in *Hispo* then species can be expected to occur in the Comoro Islands and India. Unfortunately the occurrence of *H. bipartita* in India and Sri Lanka does not fulfil the prediction for as mentioned above, this species may have to be transferred into *Massagris*, and its distribution reconsidered when that genus is revised.

List of species in the genus *Hispo* Simon, 1886

Hispo alboclypea Wanless (1981)

H. alboguttata Simon, 1903

H. bipartita Simon, 1903

H. cingulata Simon, 1886

H. frenata (Simon, 1900)

H. inermis (Caporiacco, 1947)

H. macfarlanei sp. n.

H. pullata sp. n.

H. striolata Simon, 1897

H. sulcata sp. n.

H. tenuis sp. n.

Key to species of *Hispo*

| | | | |
|----|---|--------------------------------------|----|
| 1 | Fovea lacking; sternum truncate anteriorly (Figs 2C, 10D) | <i>cingulata</i> -group | 2 |
| - | Fovea present; sternum attenuate anteriorly (Fig. 12B) | <i>bipartita</i> -group | 15 |
| 2 | Males | | 3 |
| - | Females | | 11 |
| 3 | Palpal conductor present (Fig. 11A, B) (Madagascar) | <i>cingulata</i> Simon (p. 193) | |
| - | Palpal conductor absent | | 4 |
| 4 | Tibial apophysis with backward pointed spur (Fig. 9J, K) (Madagascar) | <i>macfarlanei</i> sp. n. (p. 191) | |
| - | Tibial apophysis without backward pointed spur | | 5 |
| 5 | Clypeus clothed in white hairs | | 6 |
| - | Clypeus not white haired | | 7 |
| 6 | Embolus large and robust (Fig. 2E) (Madagascar) | <i>pullata</i> sp. n. (p. 183) | |
| - | Embolus small and slender (Fig. 4A) (Seychelles) | <i>alboclypea</i> Wanless (p. 185) | |
| 7 | Embolus very robust (Fig. 7F); dorsal prong of tibial apophysis with small prolateral spur (Fig. 7G) (Madagascar) | <i>tenuis</i> sp. n. (p. 189) | |
| - | Embolus otherwise; dorsal prong of tibial apophysis without a prolateral spur | | 8 |
| 8 | Anterior surface of chelicera with a distinct furrow (Fig. 6E, 8F) (Madagascar) | | 9 |
| - | Furrow lacking; anterior surface of chelicerae irregularly strigose | | 10 |
| 9 | Lateral prong of tibial apophysis with a small spur (Fig. 8B, C) | <i>sulcata</i> sp. n. (p. 190) | |
| - | Lateral prong of tibial apophysis without a spur (Fig. 6C) | <i>frenata</i> (Simon) (p. 188) | |
| 10 | Legs I swollen (Fig. 5E); embolus slender (Fig. 5H) (Africa) | <i>inermis</i> (Caporiacco) (p. 186) | |
| - | Legs I elongate (Fig. 3C); embolus robust (Fig. 3A) (Seychelles) | <i>striolata</i> Simon (p. 184) | |
| 11 | Clypeus clothed in white hairs | | 12 |
| - | Clypeus not white haired | | 14 |
| 12 | Epigynal opening with median scape-like projection (Fig. 9C) (Madagascar) | <i>macfarlanei</i> sp. n. (p. 191) | |
| - | Epigynal opening without median scape-like projection | | 13 |
| 13 | Epigynal openings subcontiguous, transversely elongate, lateral margins extending beyond secondary spermathecae (Figs 10F, 11C, D) (Madagascar) | <i>cingulata</i> Simon (p. 193) | |
| - | Epigynal openings separate, obliquely elongate, lateral margins not extending beyond secondary spermathecae (Fig. 4B) (Seychelles) | <i>alboclypea</i> Wanless (p. 185) | |
| 14 | Carapace with depressions behind anterior median eyes; epigynal openings subcontiguous (Fig. 3D) (Seychelles) | <i>striolata</i> Simon (p. 184) | |
| - | Carapace without depressions behind anterior median eyes; epigynal openings separate (Fig. 5F, I) (Africa) | <i>inermis</i> (Caporiacco) (p. 186) | |
| 15 | Abdomen with discoidal white and black markings (Fig. 13A) [species only known from a subadult ♂] (Sumatra) | <i>alboguttata</i> Simon (p. 196) | |
| - | Discoidal markings lacking; epigyne with large openings and tangled fertilization ducts near posterior margin (Fig. 12F) (India, Sri Lanka) | <i>bipartita</i> Simon (p. 195) | |

The *cingulata*-group

The *cingulata*-group is comprised of nine known species, one from Africa, two from the Seychelles and six from Madagascar, which can be readily distinguished from species of the *bipartita*-group by the absence of a fovea.

Within this group two subgroups based on the structure of the male palp can be recognized. In the *striolata*-subgroup (*H. striolata* Simon, *H. alboclypea* Wanless, *H. inermis* (Caporiacco) and *H. pullata* sp. n.), the dorsal prong of the palpal tibial apophysis is relatively small and unmodified. In the *cingulata*-subgroup (*H. cingulata* Simon, *H. frenata* (Simon), *H. tenuis* sp. n., *H. sulcata* sp. n., and *H. macfarlanei* sp. n.), the tibial apophysis is relatively large and often provided with spurs. *H. cingulata* is further distinguished by having a modified embolic shaft.

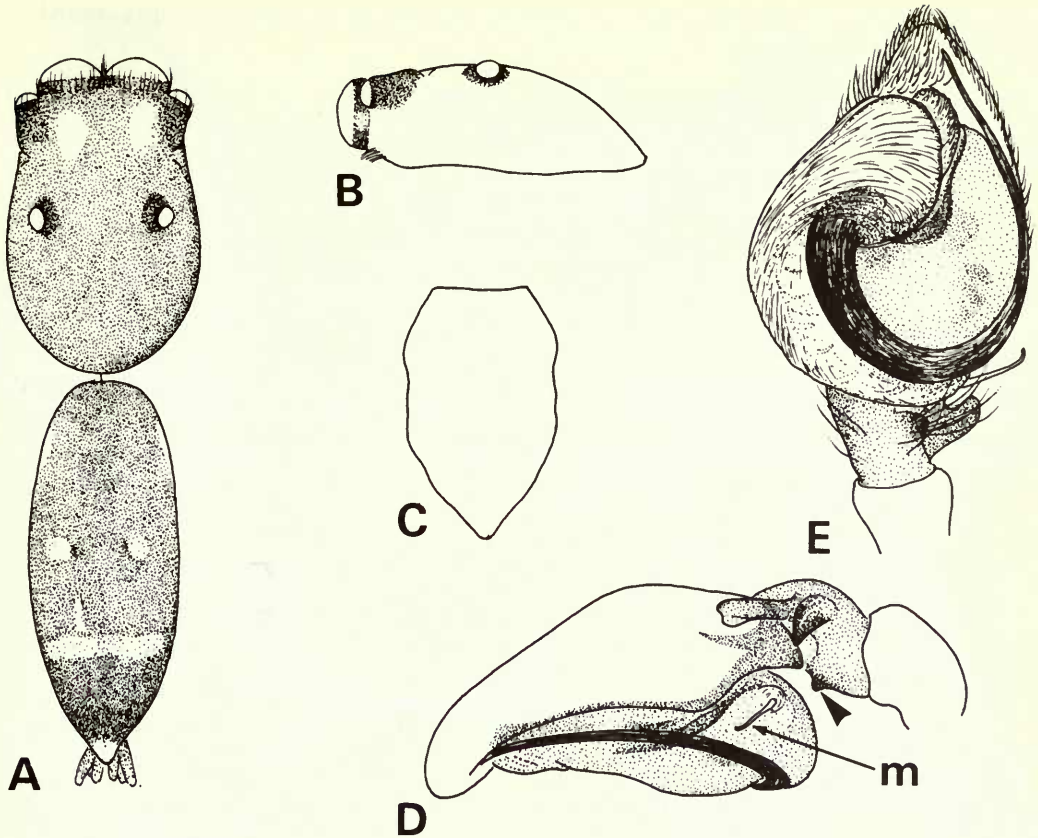


Fig. 2 *Hispo pullata* sp. n., holotype ♂: A, dorsal view; B, carapace, lateral view; C, sternum; D, palp, lateral view; E, palp, ventral view.

Hispo pullata sp. n.
(Fig. 2A-E)

DIAGNOSIS. *Hispo pullata* is closely related to *H. striolata* Simon, but can be separated by the presence of a fringe of white hairs on the clypeus.

FEMALE. Unknown.

MALE HOLOTYPE. *Carapace* (Fig. 2A, B): finely rugose to finely punctate-reticulate within quadrangle; brownish orange, weakly iridescent. *Eyes*: with black surrounds; anteriors contiguous, apices slightly procurved, sparsely fringed in light brown hairs. *Clypeus*: fringed in white hairs. *Chelicerae*: with fine irregular striae; brownish orange, weakly iridescent; teeth not examined. *Maxillae and labium*: brownish orange. *Sternum* (Fig. 2C): light orange, shiny. *Abdomen*: yellow-brown lightly tinged black with indistinct whitish markings clothed in white hairs; anal tubercle whitish. *Legs*: legs I heaviest, dark brown; other legs light brown to yellow-brown. Spination of legs I: metatarsi with 1 proventral spine, tibiae with 1 distal proventral, femora with 3 dorsal and 1 distal prolateral spine; other leg spines weak, but more numerous especially on legs III-IV. *Palp* (Fig. 2D, E): similar to that of *H. striolata*, but the embolus is slightly more robust and the ventral apophysis of the tibia a little more pronounced.

Dimensions (mm): total length 3.84; carapace length 1.76, breadth 1.16, height 0.72; abdomen length 2.12; eyes, anterior row 1.12, middle row 0.88, posterior row 0.92; quadrangle length 0.86. *Ratios*: AM : AL : PM : PL :: 10.5 : 4.5 : 1 : 4, AL-PM-PL :: 5-9.

VARIATION. ♂ total length 3·3 to 4·1 mm, carapace length 1·56–1·88 mm (4 specimens).

DISTRIBUTION. Madagascar.

MATERIAL EXAMINED. Madagascar: Beanana, holotype ♂, ii. 1970 (*A. Lambillon*, MT. 142.600) (MRAC, Tervuren). Antongil, paratypes 3 ♂♂, (*A. Mocqueries*) (MNHN, Paris. 12759).

***Hispo striolata* Simon**

(Figs 1A–B; 3A–F)

Hispo striolata Simon, 1897 : 387, ♂, ♀. Lectotype ♂, Seychelles (MNHN, Paris, 11409) [Examined]. Simon, 1901 : 450, 451. Hirst, 1911 : 382. Roewer, 1954 : 985. Bonnet, 1957 : 2220. Prószyński, 1971 : 417. Wanless, (1981) [Lectotype designated].

DIAGNOSIS. *Hispo striolata* is closely allied to *H. pullata* sp. n., but can be distinguished by the absence of a fringe of white hairs on the clypeus. The female of *H. pullata* is unknown.

REMARKS. This species has recently been redescribed in a faunistic study on Salticidae from

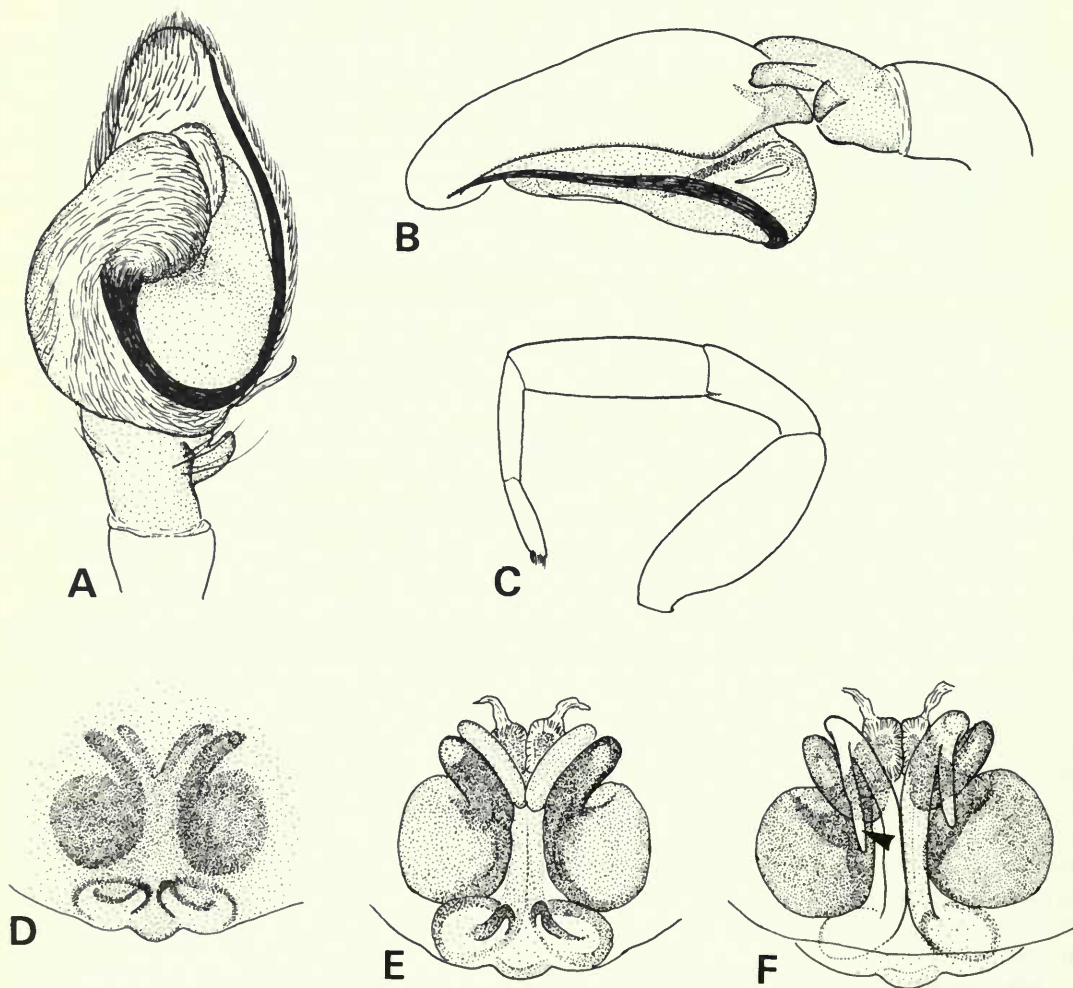


Fig. 3. *Hispo striolata* Simon, ♂: A, palp, ventral view; B, palp, lateral view; C, leg I. ♀: D, epigyne; E, vulva, ventral view; F, vulva, dorsal view.

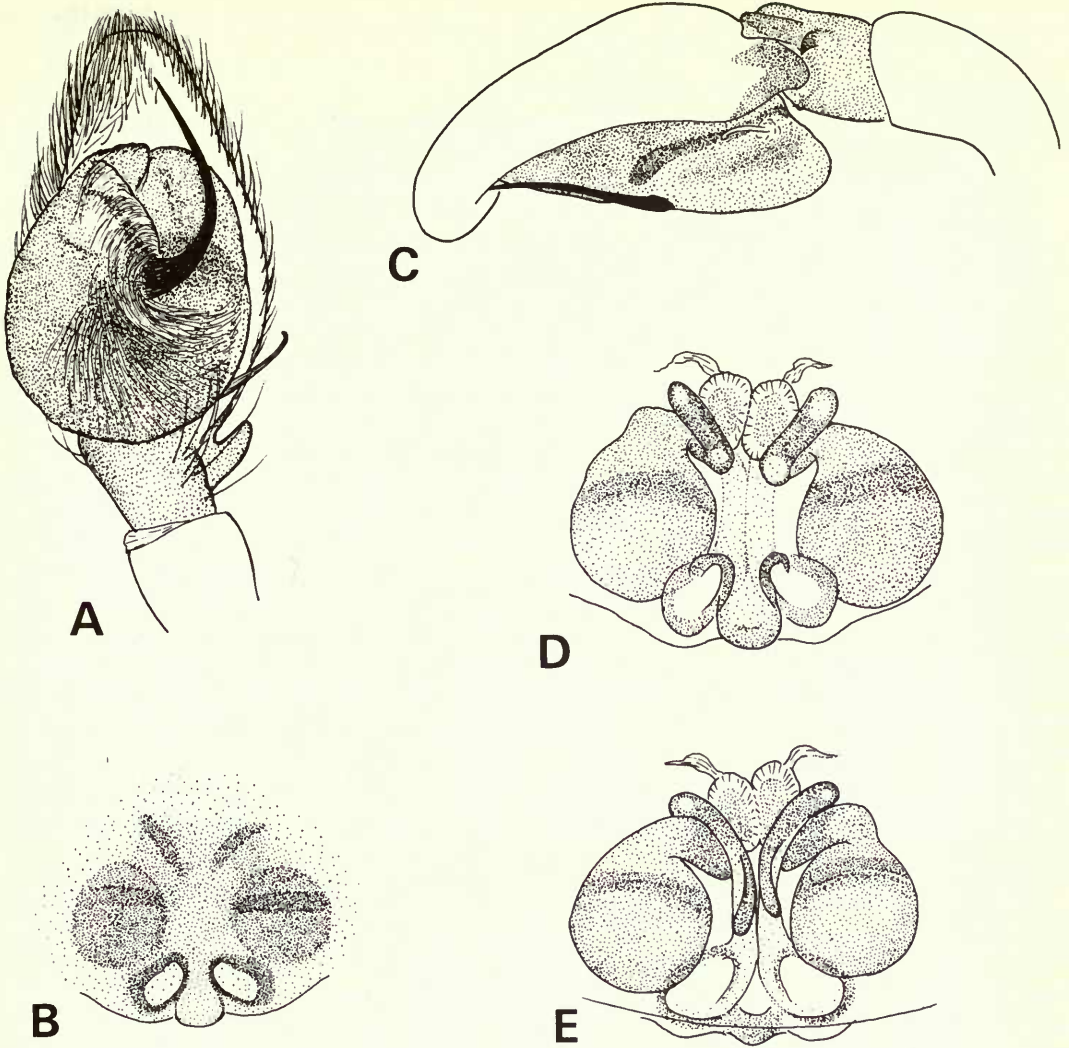


Fig. 4 *Hispo alboclypea* Wanless, ♂: A, palp, ventral view; C, palp, lateral view. ♀: B, epigyne; D, vulva, ventral view; E, vulva, dorsal view.

the Seychelle Islands (Wanless, 1981) but, for completeness, I have provided figures of the genitalia.

DISTRIBUTION. Seychelle Islands: Mahé, Silhouette, Praslin.

MATERIAL EXAMINED. 9 ♂♂, 3 ♀♀, including the lectotype; for data see Wanless (1981).

***Hispo alboclypea* Wanless**
(Fig. 4A–E)

Hispo alboclypea Wanless (1981), ♂, ♀. Holotype ♂, allotype ♀, Seychelles, Silhouette, (BMNH. 1952.12.17.210–214) [Examined].

DIAGNOSIS. *H. alboclypea* is closely related to *H. inermis* (Caporiacco) but can be readily distinguished by the presence of a fringe of white hairs on the clypeus and the structure of the genitalia (Fig. 4A–E).

REMARKS. This species has only recently been described (Wanless, 1981) and as in the case of *H. striolata*, only figures of the genitalia are provided.

DISTRIBUTION. Seychelle Islands: Mahé, Silhouette.

MATERIAL EXAMINED. 4 ♂♂, 2♀♀, including the holotype; for data see Wanless (1981).

***Hispo inermis* (Caporiacco) comb. nov.**
(Fig. 5A–J)

Pseudomarengo inermis Caporiacco, 1947: 228, ♂. Holotype ♂, Kenya, Lac Dijpe (TM, Budapest) [Examined]. Roewer, 1954: 951: 1965: 33.

Pseudomarengo rufescens Caporiacco, 1947: 229, ♀. Holotype ♀, Kenya, Moshi (TM, Budapest) [Examined]. Roewer, 1954: 951; 1965: 33 [= *P. inermis*].

DIAGNOSIS. *Hispo inermis* is closely related to *H. alboclypea* Wanless, but can be readily separated by the absence of a fringe of white hairs on the clypeus and the structure of the genitalia (Fig. 5D, F–J).

MALE FROM ANGOLA. *Carapace* (Fig. 5A, B): punctured-reticulate, weakly iridescent especially within quadrangle; depressions behind AM hardly apparent; dark orange-brown with faint sooty markings; thinly clothed in fine pale brown hairs. *Eyes*: with black surrounds; anteriors contiguous, apices slightly procurved, sparsely fringed in whitish hairs. *Clypeus*: edged black with scattered pale brown hairs. *Chelicerae*: with fine irregular striae; dark brown, shiny; teeth not examined. *Maxillae*: orange-brown, inner distal margins whitish. *Labium*: slightly broader than long; orange-brown. *Sternum*: elongate scutiform; orange tinged black, shiny. *Abdomen*: mottled yellow-brown and black with vague transverse bands of whitish lanceolate hairs; spinnerets blackish. *Legs*: legs I (Fig. 5E) and II robust; legs I dark orange-brown with tarsi yellow-brown, shiny with a violet tinge under some angles of illumination; venter of tibiae and patellae scantily fringed in brown hairs; other legs brownish yellow lightly tinged black. Spines few and weak, apparently lacking on legs I–I. *Palp* (Fig. 5D, H): ventral tibial setae relatively stout; embolus slender partly hidden by the subtegulum in ventral view.

Dimensions (mm): total length 3.08; carapace length 1.56, breadth 1.03, height 0.47; abdomen 1.56; eyes, anterior row 0.84, middle row 0.8, posterior row 0.82; quadrangle length 0.64. *Ratios*: AM : AL : PM : PL :: 8 : 3.5 : 1 : 3.5, AL–PM–PL :: 3.2–6.5.

FEMALE FROM ANGOLA. Similar to ♂ except for the following. *Carapace*: finely punctate-reticulate, weakly iridescent especially in eye region; dark orange, thinly clothed in fine pale orange hairs. *Chelicerae*: small, light orange, shiny; promargin with 3 teeth, retromargin with 5 or 6 forming a serrated ridge. *Sternum*: pale yellow-orange with darker margins. *Abdomen*: whitish yellow clothed in fine pale brown hairs. *Legs*: more or less as in ♂, but pale yellow orange with scanty scopulae on tarsi IV (♂ similar, but scopulae less noticeable). *Epigyne* (Fig. 5G, I, J): in this specimen the broken off embolus tip (e) can be seen in the left opening.

Dimensions (mm): total length 4.56; carapace length 1.88, breadth 1.26, height 0.60; abdomen length 2.84; eyes, anterior row 1.04, middle row 0.94, posterior row 1.04; quadrangle length 0.8. *Ratios*: AM : AL : PM : PL :: 9.2 : 4.2 : 1 : 4, AL–PM–PL :: 4.5–8.5.

VARIATION. ♂ total length 3.0 to 4.2 mm, carapace length 1.36–1.88 mm (8 specimens). ♀ total length 3.9 to 5.2 mm, carapace length 1.64–1.88 mm (9 specimens). Depth of colour varies from yellow-brown to brown-black, but this could be the effects of preservation. The epigynes are sometimes plugged and the number of coils visible through the integument varies; there are usually three on each side (Fig. 5F), but evidently the coils can overlap so that in some specimens only two are apparent (Fig. 5I).

DISTRIBUTION. Angola, Botswana, Kenya, Zaire.

MATERIAL EXAMINED. Angola: Dundo, R. Luachimo, 1 ♂, 25.11.1948 (*A. de Barros Machado*, Ang. 400.26); Dundo, in house, 1 ♂, v.1960 (*A. de Barros Machado*, Ang. 14938);

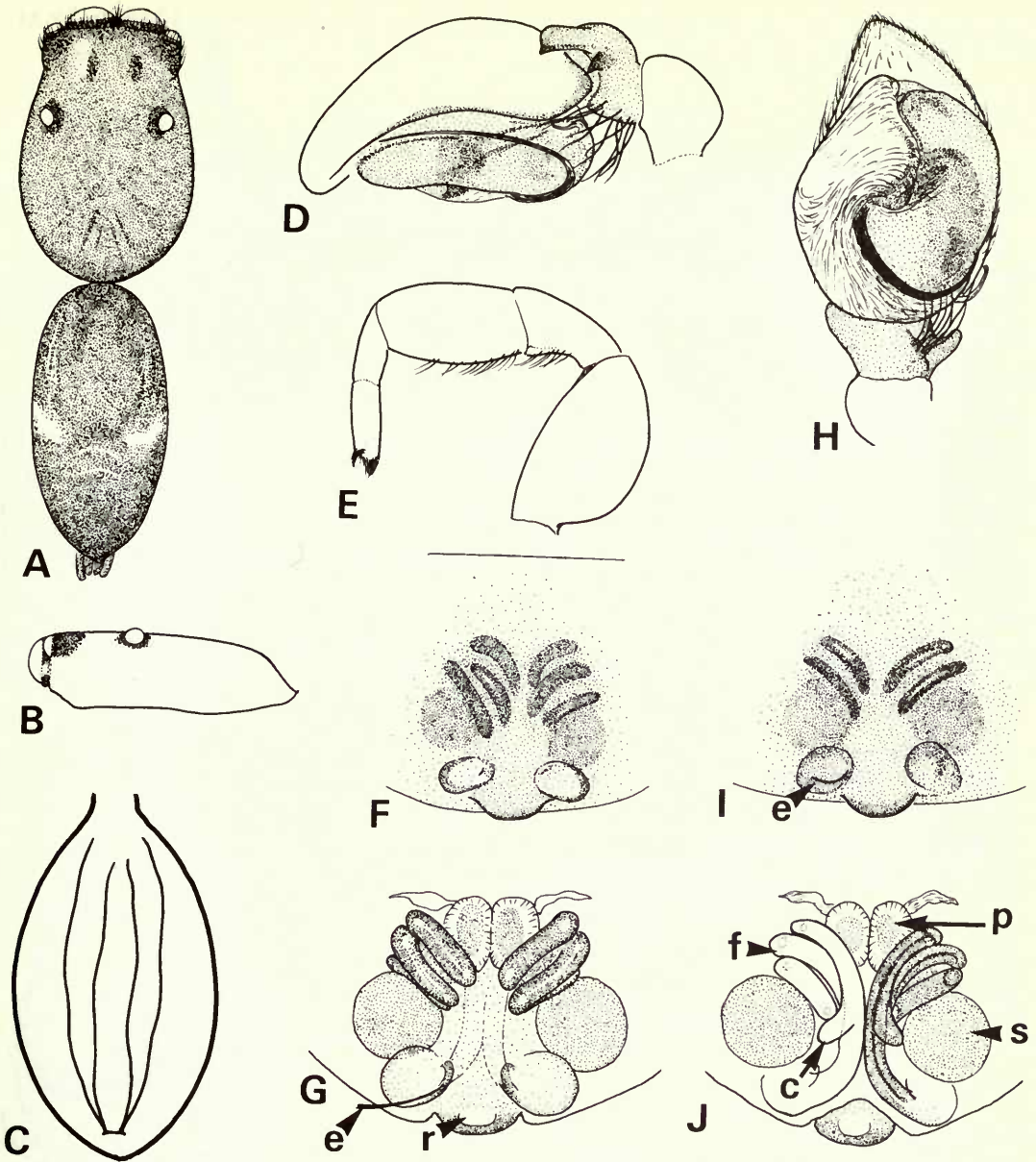


Fig. 5 *Hispo inermis* (Caporiacco), ♂: A, dorsal view; B, carapace, lateral view; D, palp, lateral view; E, leg I; H, palp, ventral view. ♀: C, tracheal system, schematic; F, epigyne; G, vulva, ventral view; I, epigyne, another specimen; J, vulva, dorsal view.

Dundo, forest gallery nr. museum, 2 ♂♂, 8 ♀♀, iii.1948 (*A. de Barros Machado*, Ang. 414.5); Tchivinguiro, forest litter, 1 ♂, 27.ix.1949 (*A. de Barros Machado*, Ang. 1877.21). Botswana: Maqwee, Mopane woodland, pitfall trap, 1 ♂, 12.xii.1975 (*A. Russel-Smith*) (BMNH). Kenya: Lac Djipe, holotype ♂ [*Pseudomarengo inermis*], x.1904 (*K. Kittenberger*, 1228/1905) (TM, Budapest); Moshi, holotype ♀ [*P. rufescens*], ix.1903 (*K. Kittenberger*, 1228/1906) (TM, Budapest). Zaire: lac Tanganika, Ile de Mboko, humus, 1 ♀, 6.ii.1957 (*N. Leleup*, MT. 91383); Kivu, Terr. Uvira, massif de l'Itombwejtête de source riv. Kalimabenge, forêt de montagne avec bambous, 2900 m, 1 ♀, xii.1958 (*N. Leleup*, MT. 113194); Kwango, Terr. Feshi, forêt de tete de la source Sengi, dans humus, 1 ♀, iii.1959 (*N.*

Leleup, MT. 113785); Tshuapa, Bamanian, 1 ♂, xii.1954 (*P. Hulstaert*, MT. 84034) (MRAC. Tervuren).

***Hispo frenata* (Simon) comb. nov.**

(Fig. 6A–G)

Astaenorches frenatus Simon, 1900:397, ♂. LECTOTYPE ♂ (here designated) Madagascar (MNHN, Paris, 13127) [Examined]. Simon, 1901:450–452. Roewer, 1954:985. Bonnet, 1955:766. Prószyński, 1971:379.

DIAGNOSIS. *Hispo frenata* is closely related to *H. tenuis* sp. n., *H. sulcata* sp. n., and *H. macfarlanei* sp. n., but can be separated by the absence of spurs on the palpal tibial apophyses (Fig. 6C).

FEMALE. Unknown.

MALE LECTOTYPE (in poor condition). *Carapace* (Fig. 6A, D): brown-black, an iridescent sheen within quadrangle; scattered white hairs below lateral eyes (badly rubbed). *Eyes*: with black surrounds; anteriors more or less contiguous, apices slightly procurved, sparsely fringed in white hairs. *Clypeus*: rubbed, but probably sparsely fringed in light brown hairs. *Chelicerae* (Fig. 6E): smooth with deep cross furrows; brown-black, rather shiny; promargin with 4 teeth, retromargin with 6 or 7 forming a serrated ridge. *Maxillae and labium*: brown-black. *Sternum* (Fig. 6F): grey-yellow, shiny. *Abdomen*: moderately elongate; brown tinged black, original pattern lost, but irregular spots of whitish hair present. *Legs*: legs I longest, brown-black with yellow-brown tarsi, thinly clothed in fine pale orange hairs; other legs yellow-brown tinged black. *Spination of legs I*: tibiae with 2 distal ventral spines;

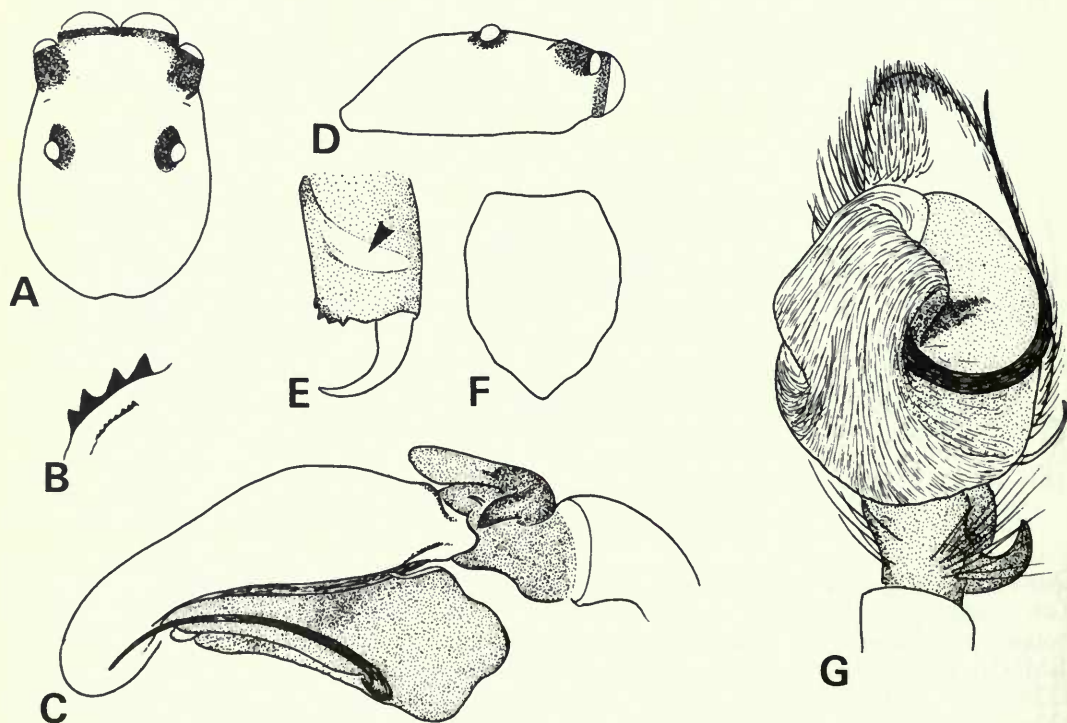


Fig. 6 *Hispo frenata* (Simon), lectotype ♂: A, carapace, dorsal view; B, cheliceral teeth; C, palp, lateral view; D, carapace, lateral view; E, chelicera, showing furrow; F, sternum; G, palp, ventral view.

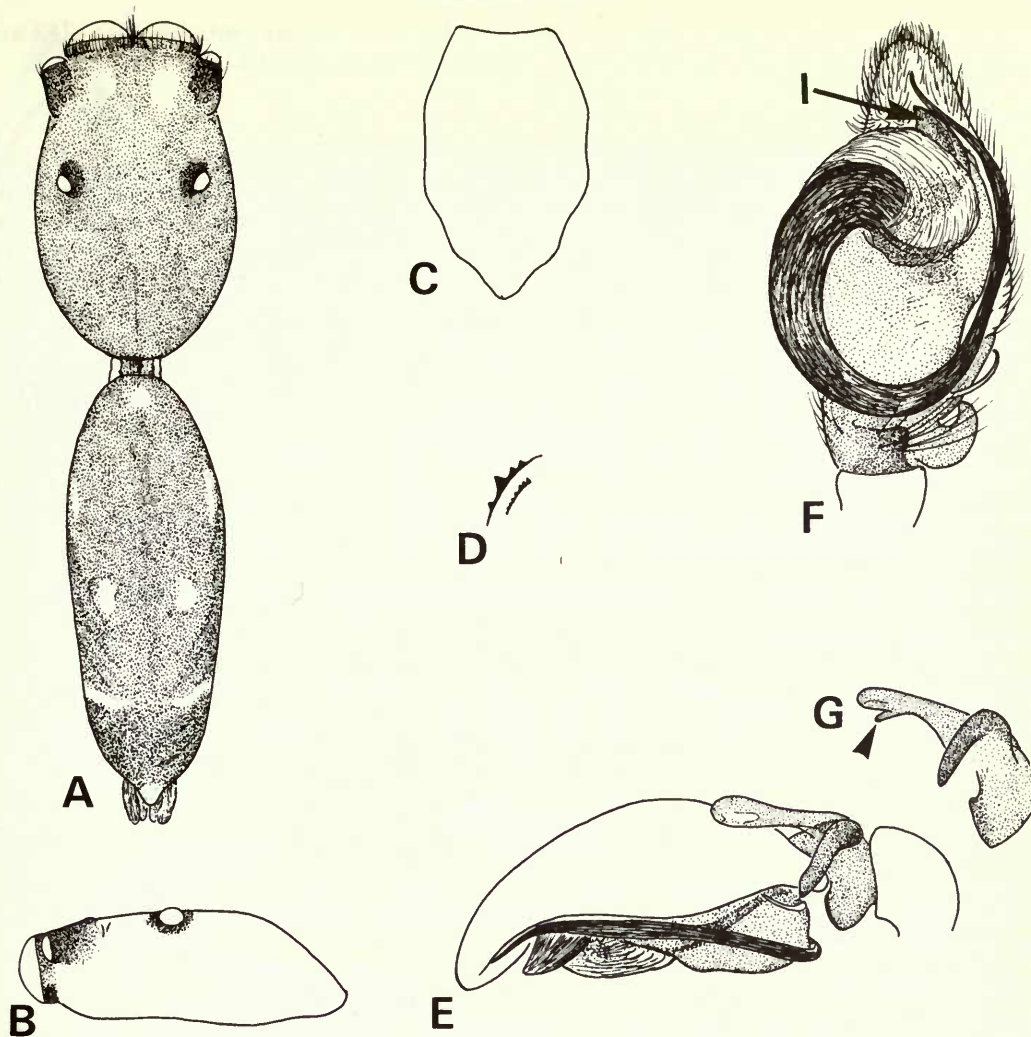


Fig. 7 *Hispo tenuis* sp. n., holotype ♂: A, dorsal view; B, carapace, lateral view; C, sternum; D, cheliceral teeth; E, palp, lateral view; F, palp, ventral view; G, tibial apophysis, lateral aspect, viewed slightly from below.

other leg spines few and moderately weak. *Palp* (Fig. 6C, G): additional spurs on the tibial apophyses are lacking in this species.

Dimensions (mm): total length 4.32; carapace length 2.04, breadth 1.52, height 0.84; abdomen length 2.2; eyes, anterior row 1.36, middle row 1.08, posterior row 1.10; quadrangle length 1.0. *Ratios*: AM : AL : PM : PL :: 12 : 5.5 : 1 : 4, AL-PM-PL :: 5.5-11.

DISTRIBUTION. Madagascar.

MATERIAL EXAMINED. Madagascar: Imerina, Lectotype ♂ (*Camboué*) (MNHN, Paris. 13127).

Hispo tenuis sp. n.
(Fig. 7A-F)

DIAGNOSIS. *Hispo tenuis* is closely related to *H. frenata* (Simon), *H. sulcata* sp. n., and *H.*

macfarlanei sp. n., but may be distinguished by the more robust embolus (Fig. 7F) and presence of a prolateral spur on the dorsal prong of the tibial apophysis (Fig. 7G).

FEMALE. Unknown.

MALE HOLOTYPE. *Carapace* (Fig. 7A, B): finely rugose to finely punctate-reticulate within eye region; brownish orange, weakly iridescent. *Eyes*: with black surrounds; anteriors contiguous, apices slightly procurved, fringed in whitish hairs. *Clypeus*: with scattered long pale brown hairs. *Chelicerae*: finely rugose; dark brown, weakly iridescent; promargin with 4 teeth, retromargin with 6 or 7 forming a serrated ridge. *Maxillae and labium*: brownish orange, inner distal margin of maxillae whitish. *Sternum* (Fig. 7C): brownish orange lightly tinged black. *Abdomen*: mottled yellow-brown and black with whitish markings; anal tubercle whitish. *Legs*: legs I longest, brownish orange to light brown; other legs yellow-brown to whitish yellow with blackish femora. Spination of legs I: metatarsi with 1 prolateral spine; other leg spines few and weak. *Palp* (Fig. 7E-G): embolus robust, prolateral spur on tibial apophysis can only be seen when palp is viewed slightly from below (Fig. 7G).

Dimensions (mm): total length 4.08; carapace length 1.68, breadth 1.05, height 0.6; abdomen length 2.12; eyes, anterior row 0.96, middle row 0.78, posterior row 0.84; quadrangle length 0.8. *Ratios*: AM : AL : PM : PL :: 9 : 4 : 1 : 3.5, AL-PM-PL :: 5-9.

VARIATION. ♂ total length 3.6 to 4.08 mm, carapace length 1.48-1.68 mm (3 specimens).

DISTRIBUTION. Madagascar.

MATERIAL EXAMINED. Sri Lanka: Kandy, lectotype juvenile, (*E. Simon*) (MNHN Paris paratypes 2 ♂♂, x.1971 (*B. Ranson*, MT. 142.876) (MRAC, Tervuren).

Hispo sulcata sp. n.

(Fig. 8A-I)

DIAGNOSIS. *Hispo sulcata* is closely related to *H. frenata* (Simon), *H. tenuis* sp. n., and *H. macfarlanei* sp. n., but can be distinguished by the presence of a spur on the lateral prong of the tibial apophysis (Fig. 8B, C).

FEMALE. Unknown.

MALE HOLOTYPE. *Carapace* (Fig. 8H): finely rugose to aciculate in eye region; dark brown, quadrangle paler, shiny with a greenish iridescent tinge on thoracic part under some angles of illumination. *Eyes*: with black surrounds; anteriors more or less contiguous, apices level, sparsely fringed in whitish hairs. *Clypeus*: sparsely fringed in fine whitish hairs. *Chelicerae* (Fig. 8F, G): smooth with deep cross furrows; orange-brown, shiny; promargin with 5 teeth, retromargin with 6 or 7 forming a serrated ridge. *Maxillae* (Fig. 8E, H): blades more or less rounded, but with a broad groove laterally; orange-brown. *Labium*: orange-brown. *Sternum* (Fig. 8D): yellow-brown, shiny. *Abdomen*: as in *H. pullata*, but whitish markings less distinct. *Legs*: legs I longest, dark brownish orange; other legs yellow-brown to orange-brown. Spination of legs I: tibiae with 1 distal ventral spine, femora with 2 dorsal and 1 distal proventral; other spines weak, but more numerous especially on legs III-IV. *Palp* (Fig. 8A-C): the spur on the lateral prong of the tibial apophysis is best seen when viewed from slightly below.

Dimensions (mm): total length 4.9; carapace length 2.1, breadth 1.64, height 0.23; abdomen length 2.68; eyes, anterior row 1.4, middle row 1.12, posterior row 1.16; quadrangle length 1.04. *Ratios*: AM : AL : PM : PL :: 12 : 6 : 1 : 5, AL-PM-PL :: 6-12.

DISTRIBUTION. Madagascar.

MATERIAL EXAMINED. Madagascar: holotype ♂, no other data, (MCZ, Harvard).

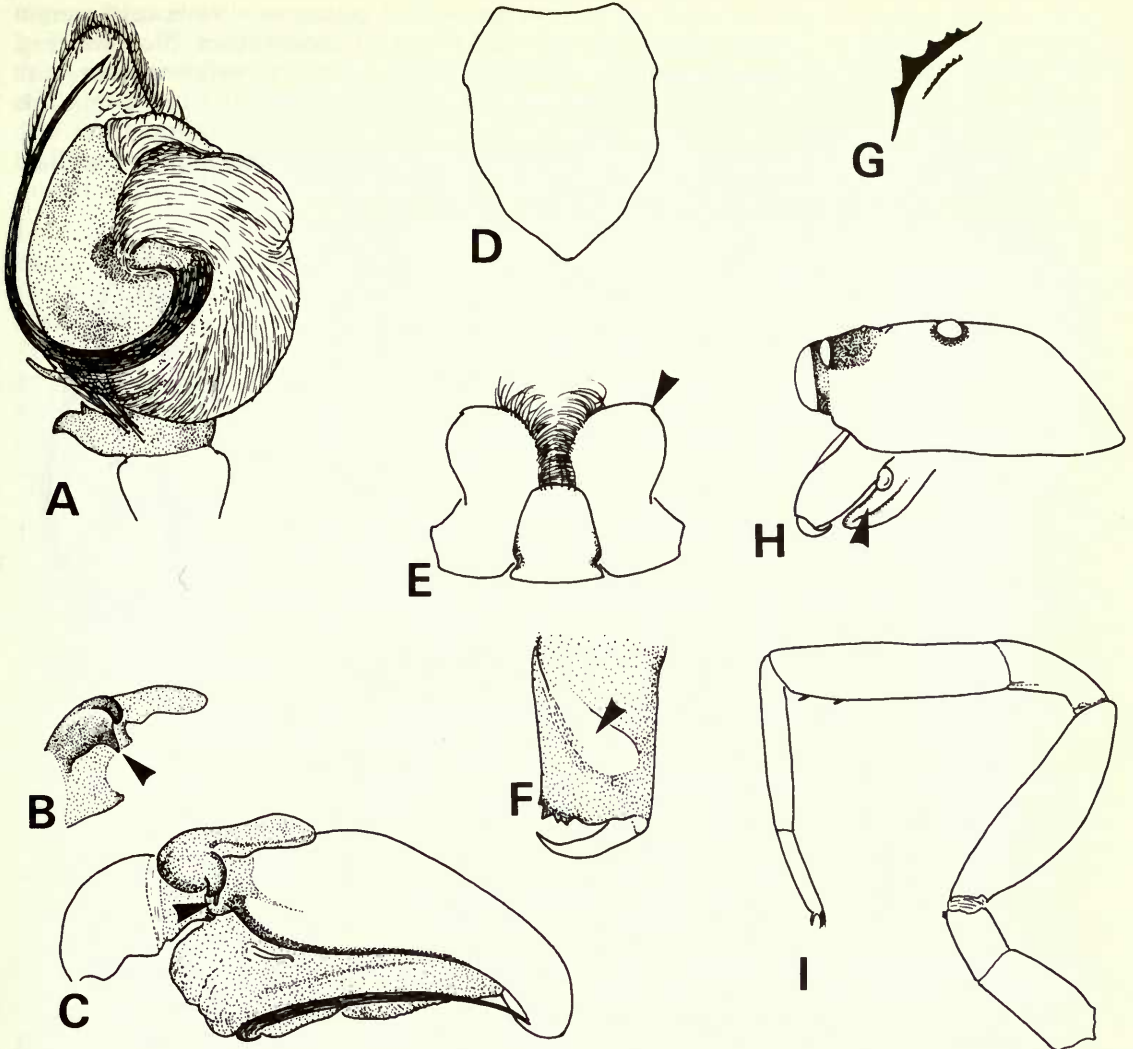


Fig. 8 *Hispo sulcata* sp. n., holotype ♂: A, palp, ventral view; B, tibial apophysis, lateral aspect, viewed from below; C, palp, lateral view; D, sternum; E, maxillae and labium; F, chelicera, showing furrow; G, cheliceral teeth; H, carapace, lateral view; I, leg I.

***Hispo macfarlanei* sp. n.**
(Fig. 9A–M)

DIAGNOSIS. *Hispo macfarlanei* is closely related to *H. frenata* (Simon), *H. tenuis* sp. n., and *H. sulcata* sp. n., but may be distinguished by the backward pointed spur on the dorsal prong of the tibial apophysis (Fig. 9J, K) and the presence of a small epigynal scape (Fig. 9C). It is not known if the scape is diagnostic for females, as females of *frenata*, *tenuis* and *sulcata* are unknown.

MALE HOLOTYPE. *Carapace* (Fig. 9A, B): finely rugose, shiny in eye region; dark reddish brown with light orange guanin within quadrangle and yellow-brown patch behind posterior lateral eyes; below posterior eyes and on thoracic sides narrow stripes of short white hairs. *Eyes*: with black surrounds; anteriors contiguous, apices level, sparsely fringed in fine shiny hairs. *Clypeus*: thinly clothed in fine shiny hairs. *Chelicerae* (Fig. 9F, I): smooth with shallow

cross furrows; dark reddish brown, shiny; promargin with 4 contiguous teeth, retromargin with 9 or 10 forming a serrated ridge. *Maxillae and labium*: orange-brown. *Sternum* (Fig. 9H): yellow with darker margins, shiny. *Abdomen*: pale yellow to yellow-brown with blackish markings and spots of short white hairs; anal tubercle sparsely fringed in white hairs. *Legs*: legs I elongate (Fig. 9D), orange-brown, thinly clothed in light orange hairs with white haired patches on femora and upper parts of trochanters and coxae; other legs light

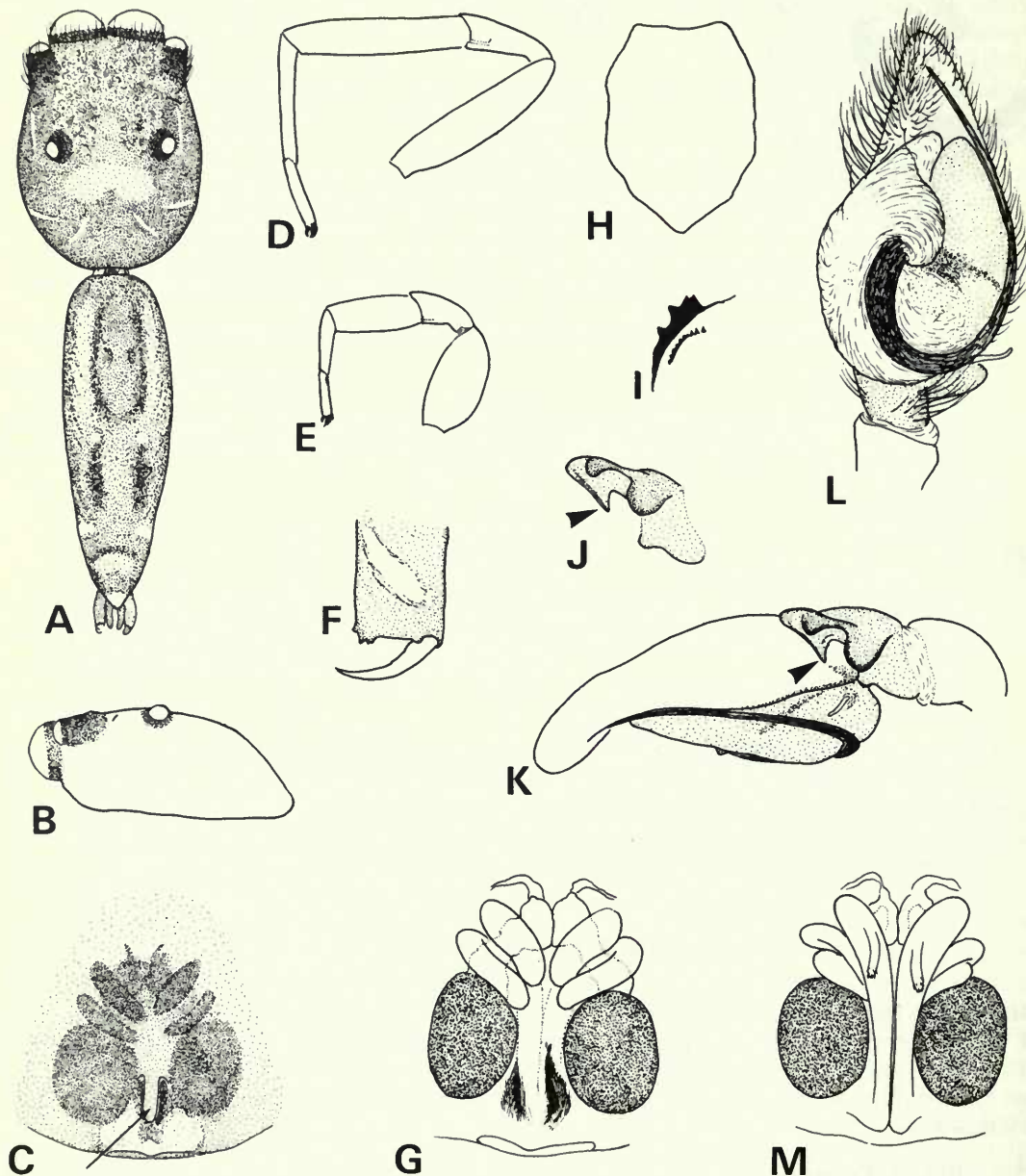


Fig. 9 *Hispo macfarlanei* sp. n., holotype ♂: A, dorsal view; B, carapace, lateral view; D, leg I; F, chelicera, showing furrow; H, sternum; I, cheliceral teeth; J, tibial apophysis, lateral aspect, viewed slightly from below; K, palp, lateral view; L, palp, ventral view. Paratype ♀: C, epigyne; E, leg I; G, vulva, ventral view; M, vulva, dorsal view.

orange-brown with yellowish trochanters and coxae, thinly clothed in fine pale yellowish hairs and with scattered white hairs on femora. Spination of legs I-II: femora with 3 dorsal spines; other leg spines moderately strong and numerous. *Palp* (Fig. 9J-L): tibial apophysis distinctive, unlikely to be confused with other known species of *Hispo*.

Dimensions (mm): total length 6.56; carapace length 2.84, breadth 2.16, height 1.24; abdomen length 3.68; eyes, anterior row 1.18, middle row 1.56 posterior row 1.58; quadrangle length 1.4. *Ratios*: AM : AL : PM : PL :: 17 : 7.5 : 1.4 : 6.5, AL-PM-PL :: 8-17.

FEMALE PARATYPE. Similar to ♂ except for the following. *Clypeus*: densely clothed in white hairs. *Chelicerae*: more bulbous anteriorly, furrow hardly apparent; dark orange, shiny; sparsely clothed in fine light brownish hairs. *Legs*: legs I (Fig. 9E) and II slightly more robust than in the ♂; legs I dark orange; other legs pale yellow-orange to dark orange. *Epigyne* (Fig. 9C, G, M): the small finger-like scape which arises from the anterior margin of the indistinct opening is surrounded by a dark red-brown substance, (?plugged) in the two epigynes available for study. Unfortunately it has not been possible to determine the precise nature of the scape, furthermore the spermathecae, which are blackish, may have altered during preservation.

Dimensions (mm): total length 7.92; carapace length 2.84, breadth 2.08, height 1.24; abdomen length 4.6; eyes, anterior row 1.87, middle row 1.48, posterior row 1.52; quadrangle length 1.4. *Ratios*: AM : AL : PM : PL :: 17 : 7.5 : 1.3 : 7, AL-PM-PL :: 8-16.

VARIATION. ♂ total length 4.88 to 6.84 mm, carapace length 2.44-2.84 mm (8 specimens). A second ♀ measures 6.36 mm total length, 2.72 mm carapace length.

DISTRIBUTION. Madagascar.

MATERIAL EXAMINED. Madagascar: Antongil, holotype ♂, paratypes 7 ♂♂, 2 ♀♀, (*A. Mocqueries*) (MNHN, Paris, 19541).

ETYMOLOGY. This species is named after Mr D. Macfarlane of the Commonwealth Institute of Entomology, London.

Hispo cingulata Simon (Figs 10A-F; 11A-D)

Hispo cingulata Simon, 1886 : 394, ♀. LECTOTYPE ♀ (here designated) Madagascar, (MNHN, Paris, 5.487) [Examined]. Simon, 1901 : 450-452. Petrunkevitch, 1928 : 186. Bonnet, 1957 : 2220. Prószyński, 1971 : 417.

H. cingulatus: Roewer, 1954 : 985 [unjustified emendation].

DIAGNOSIS. *Hispo cingulata* is a distinctive species readily separated from other known species of *Hispo* by the presence of a 'conductor' (c) at the base of the embolus (Fig. 11A, B), and the structure of the epigyne (Figs 10F, 11C, D).

MALE FROM ANTONGIL. *Carapace*: finely rugose within eye region especially in depressions behind anterior median eyes; dark reddish, weakly iridescent; below posterior lateral eyes a narrow white haired stripe. *Eyes*: with black surrounds; anteriors contiguous, apices level, sparsely fringed in fine brown hairs. *Clypeus*: white haired. *Chelicerae*: irregularly strigose with shallow vertical furrows; dark reddish, weakly iridescent; promargin with 4 contiguous teeth, retromargin with 8-10 forming a serrated ridge. *Maxillae and labium*: orange-brown. *Sternum*: elongate scutiform; orange-brown, shiny; slightly depressed opposite coxae I. *Abdomen*: yellow-brown tinged black with transverse bands of short white hairs; anal tubercle white haired. *Legs*: legs I-II robust, dark orange-brown clothed in stiff fine brownish hairs; other legs orange-brown lightly tinged black, slightly less hirsute. Spination of legs I-II: metatarsi with 1 proventral spine, tibiae with 2 ventral spines and 1 prolateral, femora with 3 dorsals and 2 prolaterals; other leg spines more numerous. *Palp* (Fig. 11A, B): the conductor (c) appears to be diagnostic for this species.

Dimensions (mm): total length 7.52; carapace length 2.4, breadth 2.2, height 1.2; abdomen

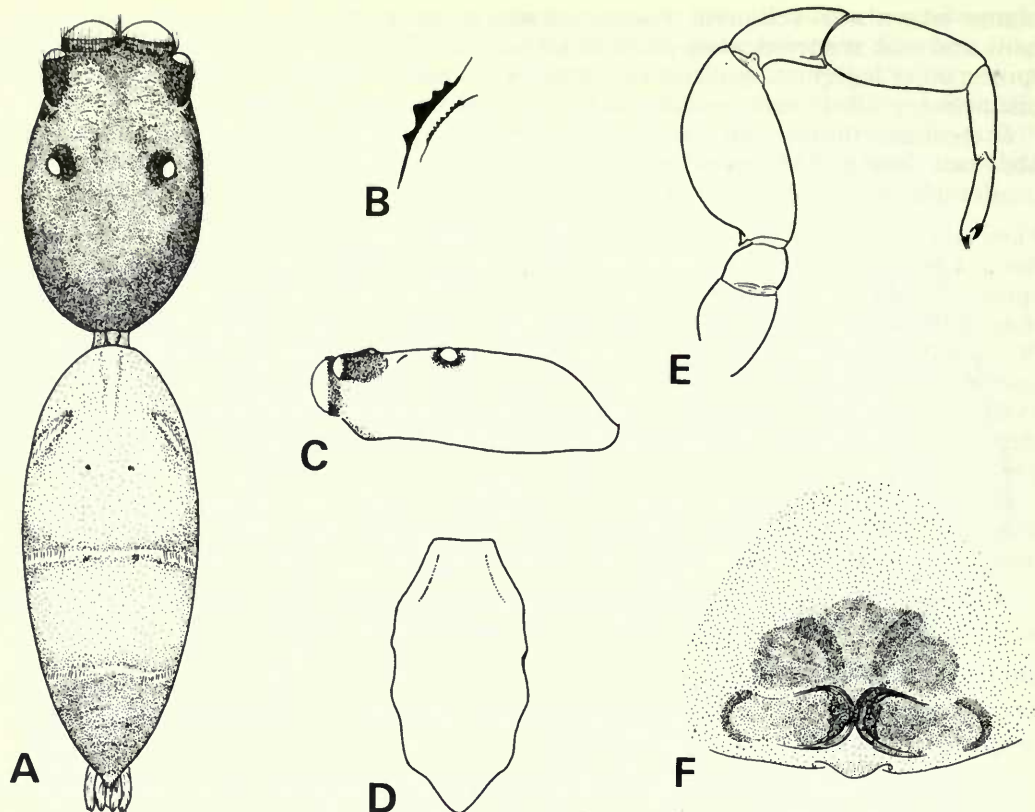


Fig. 10 *Hispo cingulata* Simon, lectotype ♀: A, dorsal view; B, cheliceral teeth; C, carapace, lateral view; D, sternum; E, leg I; F, epigyne.

length 4.0; eyes, anterior row 1.84, middle row 1.44, posterior row 1.56; quadrangle length 1.52. Ratios: AM : AL : PM : PL :: 17 : 7.5 : 2 : 7, AL-PM-PL :: 8-18.

FEMALE LECTOTYPE (Fig. 10A-F): similar to ♂ except for the following. *Chelicerae* (Fig. 10B): slightly more bulbous anteriorly, furrow not apparent, irregularly strigose; dark reddish, shiny. *Epigyne* (Fig. 10F): vulva of another specimen (Fig. 11C, D).

Dimensions (mm): total length 8.5; carapace length 3.32, breadth 2.02, height 1.16; abdomen length 4.8; eyes, anterior row 1.7, middle row 1.36, posterior row 1.46; quadrangle length 1.46. Ratios: AM : AL : PM : PL :: 16 : 7 : 1.5 : 5.5, AL-PM-PL :: 8-18.

VARIATION. ♂ total length 5.84 to 7.52 mm, carapace length 2.4-3.36 mm (4 specimens). A ♀ in poor condition measures about 5.8 mm total length, 3.08 mm carapace length. The vertical cheliceral furrow is less evident in the smaller male and it is probably an allometric growth character.

DISTRIBUTION. Madagascar.

MATERIAL EXAMINED. Madagascar: lectotype ♀, (MNHN, Paris. 5.487); Antongil, 2 ♂♂, (*A. Mocqueries*) (MNHN, Paris. 19541); Ste Marie Island, 2 ♂♂, 1 ♀, (*A. Mocqueries*) (MNHN, Paris. 19944).

The *bipartita*-group

This group is comprised of two species characterized by the presence of a fovea. *H. bipartita* Simon, is only known from the female, while *H. alboguttata* Simon is known from one subadult specimen.

***Hispo bipartita* Simon**
(Fig. 12A–F)

Hispo bipartita Simon, 1903a : 1050. LECTOTYPE juvenile, (here designated) Sri Lanka (MNHN, Paris, 20406) [Examined]. Bonnet, 1957 : 2219 [*nomen nudum*]. Prószyński, 1971 : 417.

REMARKS. Bonnet, 1957 was mistaken in regarding the name *H. bipartita* as a *nomen nudum*. Simon (1903a) provided the briefest diagnosis and the name is therefore available. Furthermore an adult female in the collections of the British Museum (Natural History) is considered to be conspecific with the lectotype, a juvenile specimen.

DIAGNOSIS. *H. bipartita* seems to be closely related to *H. alboguttata* Simon, which is only known from a single subadult female. They are separated by their colour markings (Figs 12A, 13A), although this may or may not hold good for adults.

MALE. Unknown.

FEMALE FROM INDIA. *Carapace* (Fig. 12A, D): finely rugose in eye region to very finely papillate on thoracic part; orange-brown, sparsely clothed in short white lanceolate hairs. *Eyes*: with black surrounds; anteriors contiguous, apices slightly procurved, fringed in pale brown hairs with tufts outside the anterior lateral eyes. *Clypeus*: sparsely fringed in long whitish hairs. *Chelicerae* (Fig. 12C): irregularly strigose; lateral condyle prominent; orange-brown, weakly iridescent; promargin with 4 contiguous teeth, retromargin with 5 or 6 forming a serrated ridge. *Maxillae and labium*: pale orange to light yellow. *Sternum* (Fig. 12B): pale orange with darker margins. *Abdomen*: mottled yellow-brown and black with oblique fringes of short white hairs. *Legs*: legs I (Fig. 12E) and II enlarged; legs I pale orange, thinly clothed in pale orange hairs that arise from small circular pits (best seen on the tibiae); other legs yellow-brown to pale yellow. Spination of legs I: femora with 3 dorsal, almost hair-like spines; other leg spines few and weak. *Epigyne* (Fig. 12F): vulva not examined.

Dimensions (mm): total length 5·6; carapace length 2·4, breadth 1·64, height 0·56; abdomen length 3·12; eyes, anterior row 1·2, middle row 0·96, posterior row 1·2; quadrangle length 1·0. *Ratios*: AM : AL : PM : PL :: 10·5 : 5 : 2 : 5, AL–PM–PL :: 4–13.

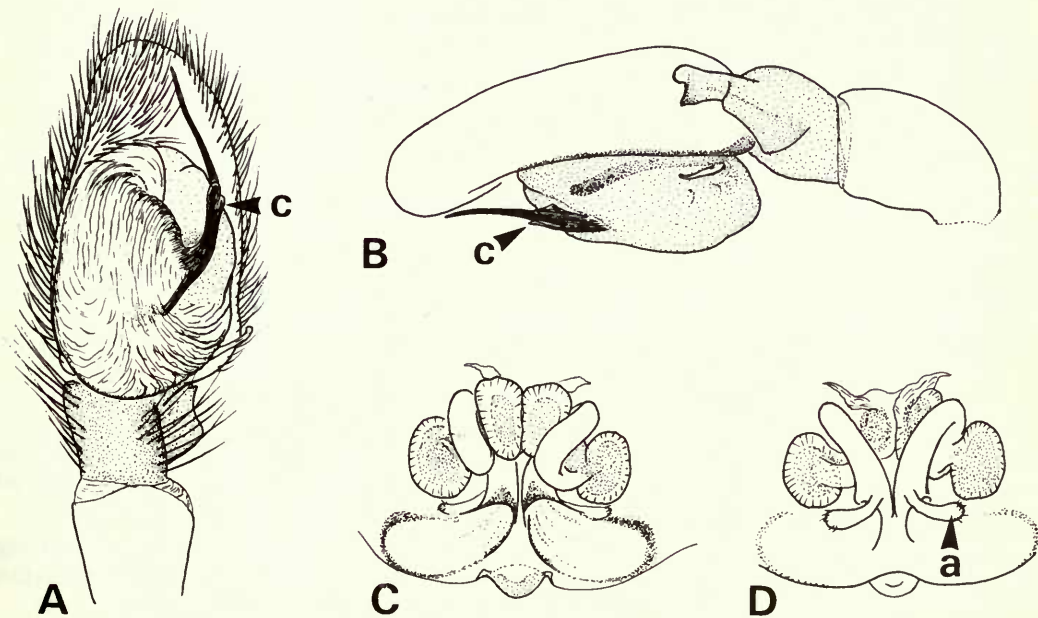


Fig. 11 *Hispo cingulata* Simon, ♂: A, palp, ventral view; B, palp, lateral view. ♀: vulva, ventral view; D, vulva, dorsal view.

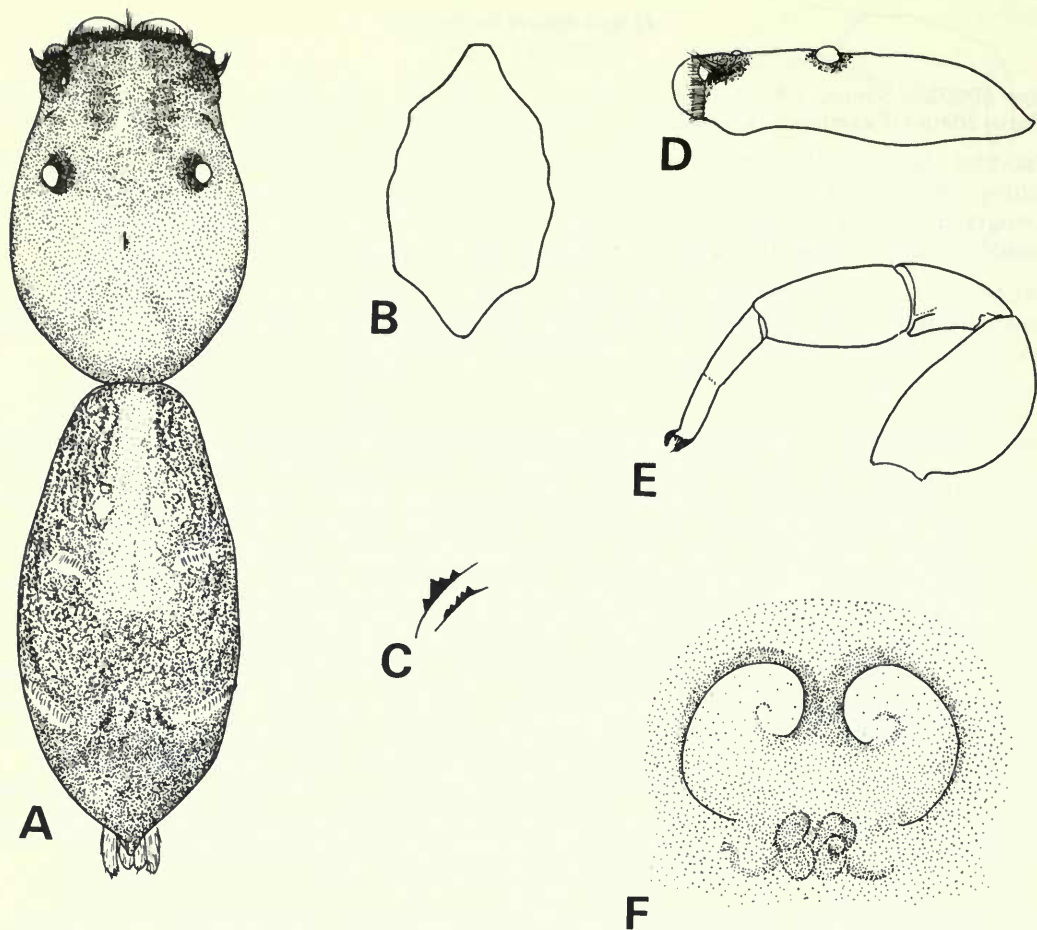


Fig. 12 *Hispo bipartita* Simon, ♀: A, dorsal view; B, sternum; C, cheliceral teeth; D, carapace, lateral view; E, leg I; F, epigyne.

VARIATION. The juvenile has the markings of the adult with a tuft of hairs outside of the anterior lateral eyes; the fovea, although present, is very small.

DISTRIBUTION. India, Sri Lanka.

MATERIAL EXAMINED. Sri Lanka: Kandy, lectotype juvenile, (*E. Simon*) (MNHN, Paris, 20406). India: Madras, 1 ♀, (*N. S. Jambunathan*) (BMNH. 1923.12.21.76).

***Hispo alboguttata* Simon**
(Fig. 13A–B)

Hispo alboguttata Simon, [June] 1903a : 1050. LECTOTYPE subadult ♀ (here designated) Sumatra (MNHN, Paris. 22180) [Examined]. Simon, [September] 1903b : 306. Roewer, 1954 : 985. Bonnet, 1957 : 2219. Prószyński, 1971 : 417.

REMARKS. Although this species is only known from a subadult female the colour markings would appear to be distinctive and adults should be recognizable. The specimen is therefore figured and briefly described below.

DIAGNOSIS. *H. alboguttata* can be distinguished from *H. bipartita* by the discoidal colour markings (Fig. 13A).

MALE. Unknown.

FEMALE LECTOTYPE (subadult). *Carapace* (Fig. 13A, B): orange with black markings in eye region; very sparsely clothed in fine orange and whitish hairs. *Eyes*: with black surrounds, anteriors contiguous, apices slightly procurved, fringed in whitish hairs with light orange hair tufts outside anterior lateral eyes. *Clypeus*: sparsely fringed in long whitish hairs. *Chelicerae*: pale yellow. *Maxillae, labium & sternum*: pale yellow, shiny. *Abdomen*: yellow-brown with pattern of discoidal white hair tufts and black markings; spinnerets yellow-brown, tinged black and thinly clothed in golden hairs. *Legs*: legs I-II enlarged; pale yellow, but legs I tinged black. Spines few and weak.

Dimensions (mm): total length 7.05; carapace length 3.04.

DISTRIBUTION. Sumatra.

MATERIAL EXAMINED. Sumatra: Palembang, Fôret du Nirou, lectotype subadult ♀, (*M. J. Bouchard*) (MNHN, Paris. 22180).

Species Incertae Sedis

Astaenorcheses continentalis Caporiacco

Astaenorcheses continentalis Caporiacco, 1949:462, ♀ juv. Kenya, Nairobi, 1944. Roewer, 1954:985.

This species was originally described from a juvenile female. I have been unable to examine the type and the species cannot be positively identified from the original description. However, the description is consistent with *Hispo* and the specimen was probably a juvenile of *H. inermis* which Caporiacco himself first described from Kenya.

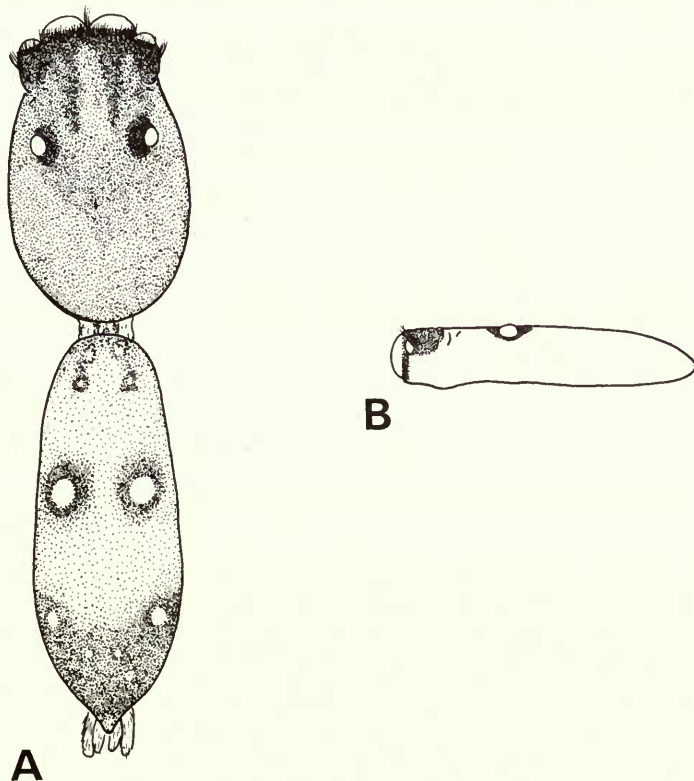


Fig. 13 *Hispo alboguttata* Simon, lectotype, subadult ♀: A, dorsal view; B, carapace, lateral view.

Acknowledgements

I wish to thank the following colleagues who kindly made types and other material available for study: Professor P. L. G. Benoit, Musée Royal d'Afrique Centrale, Tervuren, Belgium (MRAC, Tervuren); M. M. Hubert, Muséum National d'Histoire Naturelle, Paris, France (MNHN, Paris); Professor H. W. Levi, Museum of Comparative Zoology, Harvard, U.S.A. (MCZ, Harvard); Dr S. Mahunka, Termesztudományi Múzeum Allattára, Budapest, Hungary (TM, Budapest).

I am also grateful to Mr D. Macfarlane of the Commonwealth Institute of Entomology, London, for reading the manuscript and for linguistic help.

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