

# A revision of the spider genus *Cyrba* (Araneae: Salticidae) with the description of a new presumptive pheromone dispersing organ

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## Introduction

*Cyrba* Simon, 1879 is a small old world genus comprised of seven species presently classified in the Spartaeinae (Wanless, 1984) and the present work completes a preliminary revision of the entire subfamily. Four additional taxa originally described in *Cyrba*, two of which are described below, are treated here as *species incertae sedis* and have not been taken into account when defining or discussing any characters of the genus.

The species comprising *Cyrba* seem to form a good monophyletic group, which however, cannot as yet be clearly defined by uniquely derived characters. The form of the bilobed caudal plate of the epigyne represents a possible synapomorphy, but for the present the genus is supported by a combination of characters which together separate *Cyrba* from other spartaeine genera (see below). The genus is best known from *C. algerina* (Lucas) a brightly coloured species frequently found under stones throughout the Mediterranean Region. Yet, in spite of an extensive bibliography (Bonnet, 1956), little is known of the biology of that species; studies on the mating behaviour of *C. algerina* (Legendre & Llinares, 1970) representing virtually all that can be found on *Cyrba* behaviour (Jackson, pers. comm.). Fortunately, through the courtesy of Mr and Mrs J. Murphy, London and Mr P. D. Hillyard, BM(NH), it was possible to send live continental specimens of *C. algerina* to Dr R. R. Jackson, University of Canterbury, New Zealand who will report on his studies in a separate paper.

Wanless (1984) suggested that on the basis of certain behavioural and morphological characters the subfamily Spartaeinae belonged in one of the most primitive branches of the Salticidae. Thus, the pervasive use of webs by *Portia* (Jackson & Blest, 1982) and presence of large posterior median eyes in most spartaeine genera (see also Blest, 1983) were considered to be primitive characters which have been lost by the advanced salticids. The occurrence of secretory organs on the femora of legs I in adult males which are arguably producing sex pheromones (Wanless, 1984) and behavioural evidence of pheromonal detection in *Cyrba* (Legendre & Llinares, 1970; Jackson, in press), *Brettus* Thorell and *Portia* (Jackson, in press) gives further support to the 'primitive' hypothesis, since pheromonal activity might reasonably be viewed as a primitive trait in a group of animals which are invariably described as predators almost wholly dependent on vision. The discovery in certain spartaeine genera and in *Holcolaetis* Simon (a member of the *Cocalodes*-group, sensu Wanless, 1984) of abdominal 'secretory' organs which are possibly associated with the dispersal of pheromones is of special interest. In both groups they occur in subadults and adults of both sexes, but their structure and assumed mode of function is markedly different.

## Abdominal 'secretory' organs

Fields or patches of abdominal 'secretory' organs (Fig. 3A, B) are only known to occur in certain groups of 'primitive' salticids (see below). At low magnifications they are usually obscure and easily overlooked, but when evident especially in freshly preserved or living

spiders they sometimes appear as a greyish patch situated on the dorsum of the abdomen, between or immediately in front of the anterior apodemes (Figs 1; 5A, D). The patch is normally surrounded by abdominal setae (Figs 16A, B; 17A, C) and when examined in fresh material is often seen to contain minute lightly sclerotised spots (the individual 'secretory' organs) and a few scattered microsetae. SEM studies have shown that there are evidently two basic types of 'secretory' organ, i.e. mytiliform in the Spartaeinae and pustuliform in *Holcolaetis*, a member of the *Cocalodes*-group (Fig. 3A, B).

Mytiliform fields are comprised of 35 to 50 irregularly spaced mytiliform organs which are usually characterised by their resemblance to a mussel shell valve. Examples of mytiliform organs from *Cyrba*, *Portia* and *Gelotia* Thorell are given in Figs 16A–F; 17A–F; 18A–F; 19A–F. The mytiliform profile is for the most part retained in *Cyrba* and *Portia*, but is less evident in *G. syringopalpis* Wanless (Fig. 18D–F). Unfortunately the full extent and development of mytiliform fields within spartaeine groups has not been fully established for they are difficult to detect in bleached or rubbed specimens and it has not been possible to examine every species concerned. Nevertheless mytiliform fields undoubtedly occur in the following:

- (a) *Cyrba*: both sexes of all species; subadults of *C. algerina*.
- (b) *Portia*: all males, excluding *P. albimana* (Simon); all females; subadults of *P. labiata* (Thorell) and juveniles of *P. fimbriata* (ca. instars 3 to 5).
- (c) *Gelotia syringopalpis*: males and females.
- (d) *Cocalus* sp. undescribed female, not examined by SEM.
- (e) *Mintonia* sp. undescribed female, not examined by SEM.

Pustuliform fields are relatively more extensive and are each comprised of about 160 closely spaced pustuliform organs (Figs 3B; 20A, B) which differ from mytiliform organs in shape and by having the margins of each pustule surrounded by a thick rim of cuticular pleating (Fig. 20C). They occur in most species of *Holcolaetis* Simon and in subadult females of *H. vellerea* Simon, but are evidently lacking in other genera of the *Cocalodes*-group.

The presence of relatively large pores in both types of organ suggests that they are either secretory or sensory in function and that they may be homologous with slit sensilla (strain or stress receptors), which also appear to possess minute pores. These pores are, however, the attachment sites of dendrites (Foelix, 1983) and do not seem to correspond with the pores found in abdominal 'secretory' organs. Furthermore, the majority of slit sensilla occur on the legs in areas of particular mechanical stress or 'interest' (Barth in Witt & Rovner, 1982), whereas the abdominal 'secretory' fields occur in soft cuticle away from areas of stress; homology with slit sense organs is therefore unlikely. In spartaeine genera the shape of the organs, the occasional presence of shallow gullies (Figs 18E; 21B) and the presence of an amorphous substance in two specimens (Fig. 19B, E) appears to indicate that a secretion is produced, possibly a pheromone which fills the bowl of the mytiliform organ to evaporate slowly. Pustuliform organs could function in a similar manner and produce a secretion which collects around the margins of the pustule. However, it is possible that spherical bodies found in association with the organs (one specimen) and lodged in their pores (Fig. 20A–E) have been secreted by them, for their diameters (ca. 1.3  $\mu\text{m}$ ) correspond closely with one another—unlike that of certain fungal contaminants referred to below. The spheres are apparently covered in minute pits or pores which are unfortunately difficult to resolve as they become distorted at high SEM magnifications (Fig. 20F); evidence of clumping (Fig. 20B) suggests that they may well possess adhesive properties. The purpose of the spheres, if any, is of course unknown, but it is not inconceivable that they evaporate and are in themselves pheromones or alternatively packets that slowly release pheromones through surface pores.

Although the present study clearly favours a secretory function the entire hypothesis could be based on a set of artifacts, the secretions and spheres may be contaminants as none of the specimens were cleaned prior to examination by SEM. They may also have arisen as



Fig. 3 A, *Portia labiata* Thorell, ♂, mytiliform field,  $\times 730$ . B, *Holcolaetis vidua* Lessert, subadult ♀, pustuliform field,  $\times 1350$ .

a result of coagulation in 75% alcohol, a fixative routinely used for both killing and preserving spiders. In fact there is evidence of fungal contamination in one specimen of *P. labiata* (Fig. 21A–E) which at first sight seems to possess a scattering of spheres similar to those found in *Holcolaetis*. The bodies, however, are reminiscent of conidia seen in some species of *Penicillium* and *Aspergillus* (Dr A. H. S. Onions, pers. comm.) which could have infected the specimen in life or while it was being prepared for SEM.

The presence of abdominal 'secretory' organs, which have conceivably evolved from pores or setal sockets, could provide a useful synapomorphy linking both Spartaeinae and the *Cocalodes*-group, since the latter, as suggested by Wanless (1984), probably merits subfamilial rank. However, the proposal is possibly unsound as Kullman & Stern (1975) have illustrated an isolated pustuliform organ in the abdominal cuticle of the water spider *Argyroneta aquatica* (Clerck) (Family Argyronetidae) which is indistinguishable from and probably homologous with those of *Holcolaetis*. Isolated organs and even 'secretory' fields may therefore occur in other spider families.

Preliminary experiments performed by Dr R. R. Jackson implicate *Portia* mytiliform structures as pheromone sources. If this is confirmed and current histological studies by Professor R. Legendre and Dr A. Lopez reveal the presence of exocrine glands in the integument, a more appropriate name for these organs can be proposed. Although care will be needed since the function of these fields is possibly more complex than has been suggested, for the microsetae referred to above possess minute basal openings, paired in *Holcolaetis* (Fig. 22B, D, F), single in *Cyrba* (Fig. 22E) and *Portia* (Fig. 22C). The raised rim of the openings (Fig. 22C) bear a superficial resemblance to those found in slit sensilla (Foelix, 1982) so presumably, they too could be sites of dendrite attachment and thus sensory in function.

It is perhaps worth noting that the practice of marking the abdomens of live spiders with fluorescent paint, to facilitate the identification of individuals in field experiments is not to be recommended, at least in so far as this group of salticids is concerned.

### Genus *CYRBA* Simon

*Salticus* [in part]: Lucas, 1846: 136. Pickard-Cambridge, O. 1872: 321.

*Attus* [in part]: Koch, 1867: 874, 876. Simon, 1868: 24, 547, 550; 1871: 219.

*Euophrys* [in part]: Kroneberg, 1875: 48. Pavesi, 1878: 392.

*Cyrba* Simon, 1876: 165. Type species *Salticus algerina* Lucas, by original designation. Simon, 1901: 387, 429, 447, 449 [= *Stasippus*]; 1937: 1146, 1245. Scudder, 1882: 89. Peckham & Peckham, 1886: 269, 318; 1888: 8. Marx, 1890: 574. Kulczyński, 1890: 15. Chyzer & Kulczyński, 1891: 3, 38. Planet, 1905: 271. Franganillo Balboa, 1917: 201. Petrunkevitch, 1928: 186. Berland, 1929: 68, 70. Gerhardt & Kästner, 1938: 636. Neave, 1939, I: 945. Roewer, 1954: 984. Bonnet, 1956: 1337. Prószyński, 1976: 17. Hubert, 1979: 229, 233. Wanless, 1984.

*Stasippus* Thorell, 1887: 374. Type species *Stasippus inornatus* Thorell, by original designation and monotypy. Petrunkevitch, 1928: 247. Neave 1940, IV: 275.

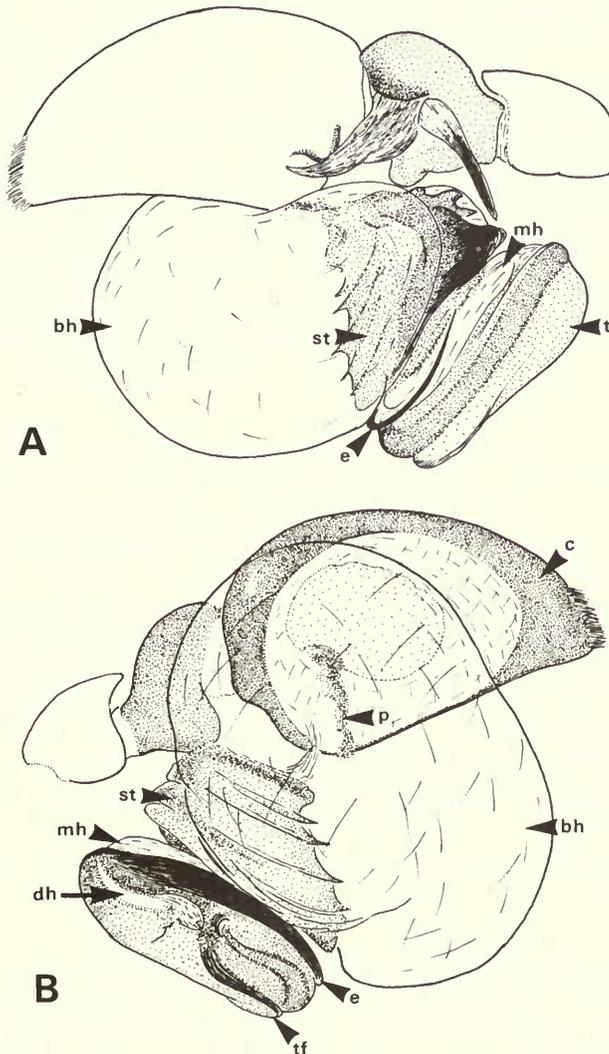
*Vindima* Thorell, 1895: 348. Type species *Vindima maculata* Thorell, by original designation and monotypy. Waterhouse, 1902: 392. Petrunkevitch, 1928: 251. Neave, 1940, IV: 641. Roewer, 1954: 1703. Bonnet, 1955: 768; 1959: 4797.

*Astia* [in part]: Simon, 1901: 436.

**DEFINITION.** Spiders of medium size, i.e. between 4.0 and 8.0 mm long. Sexual dimorphism sometimes evident in colour markings and development of legs I which are slightly enlarged in females. Species often brightly coloured. Males, females and subadults with a usually indistinct mytiliform field situated just anterior to the first pair of abdominal apodemes.

**Carapace:** longer than broad, of medium height and widest about level between coxae II–III; fovea long and sulciform, apex positioned just behind posterior margins of posterior lateral eyes. **Eyes:** with moderately pronounced lenses set on low tubercles; laterals with black surrounds; anteriors subcontiguous with apices more or less level or slightly recurved in frontal view; anterior laterals greater than half diameter of anterior medians; posterior medians relatively small, positioned closer to posterior laterals and just outside optical axis of anterior laterals; posterior laterals about as large as anterior laterals and set inside lateral

margins of carapace when viewed from above; posterior ocular quadrangle broader than long and wider behind; entire quadrangle occupying between 42 and 53% of carapace length. *Clypeus*: between 27–48% diameter of anterior median eyes in males and 10–16% in females. *Chelicerae*: generally vertical and parallel, of medium size, but slightly more robust in female; fang moderately strong; promargin with three teeth, retromargin with three to five. *Maxillae*: of medium length, more or less parallel with rounded apices. *Labium*: slightly longer than broad, about half maxillae length. *Sternum*: generally elongate scutiform. *Pedicel*: short. *Abdomen*: usually elongate ovoid with an obscure mytiliform field; patterns sometimes distinctive especially in living or freshly preserved specimens; spinnerets moderately long and more or less subequal in length, anteriors robust, medians slender, posteriors moderately robust; anal tubercle cone-shaped, sometimes strikingly white haired; position of colulus indicated by scanty group of setae between tracheal slit and base of spinnerets; tracheal slit obscure, positioned just anterior to anterior spinnerets. *Legs*: moderately long



**Fig. 4** *Cyrba algerina* (Lucas), expanded  $\sigma$  palp: A, retrolateral; B, prolateral. Abbreviations: bh, basal haematodocha; c, cymbium; dh, distal haematodocha; e, embolus; mh, median haematodocha; p, petiole of basal haematodocha; st, subtegulum; t, tegulum; tf, tegular furrow.

and slender; tibiae and patellae of front pairs slightly dilated in females; claws usually pectinate; tufts present, scopulae absent, but rows of minute shining setae present on underside of tarsi and metatarsi; spines moderately strong and numerous, but fewer spines on legs I–II in females; basic spination of legs I variable in males, more stable in females—usually metatarsi v 2-0-0, tibiae v 2-2-2, femora d 0-2-2, p 0-0-1. *Female palps*: moderately long with an apical claw, distal segments usually darker than proximal ones. *Epigynes*: Intergenerically fairly distinct, but sometimes similar interspecifically; characterised by a usually bilobed caudal ledge bearing crescent-shaped embolic guides (Fig. 6D) uniting medially and extending anteriorly to fuse with the introductory ducts and form indistinct copulatory openings; lateral slits in epigynal area (Fig. 12E) or pouches in caudal ledge (Fig. 13G, H) rarely present; introductory ducts moderately long, proximally contiguous, but distally separate and curving (see remarks below); spermathecae large, dark and usually rounded bearing leaf-like fertilisation ducts on posterior margin (Fig. 6E, arrowed). *Male palps*: Interspecifically and intergenerically fairly distinct. Complex with variously developed protuberances on anterodorsal margins of patellae, tibiae and basal retrolateral margin of cymbium; femora moderately long; patellae with pronounced anterodorsal protuberance (Fig. 8A, arrowed), retrolateral flange (Fig. 11B, arrowed) rarely present; tibiae with an oblique ventral apophysis and retrolateral apophyses of various forms—simple with hyaline elements, fan-like or with an accessory prong; cymbium with distal scopula and characteristic process on retrolateral basal margin (Fig. 8A, arrowed), also a less conspicuous basal depression opposite the anterodorsal protuberance of the patellae; embolus long, slender and curving, sometimes with a conspicuous basal prong; distal haematodocha evident as a narrow membraneous stripe (Fig. 9E, arrowed) giving rise to a delicate petal-like lobe ( $M_1$  of Wanless, 1984); tegulum rounded to subovoid with peripheral seminal duct becoming sinuous distally, an open tegular furrow bearing along its outer wall and embolic guide or groove (Fig. 10F, arrowed) and an indistinct tegular ledge (Fig. 11C, arrowed;  $M_3$  of Wanless, 1984); median haematodocha small and tube-like in expanded palp; subtegulum cone-shaped with pronounced spiral ledges; basal haematodocha bulbous in expanded palp with petiole arising from basal retrolateral margin of alveolus (Fig. 4B).

REMARKS. (a) Expanded palps have only been examined in *C. algerina*. (b) The precise nature of the introductory ducts is difficult to determine for the distal elements are folded and appear to have fused, one-above the other (Fig. 6C) with the presence in some species of additional lobe-like folds (Figs 8F; 9I, arrowed), which appear as dark patches in uncleared epigynes (Fig. 8E, arrowed).

DIAGNOSIS. *Cyrba* may be distinguished from most genera in the subfamily Spartaecinae by the combined presence of an elongate fovea and small posterior median eyes. The only area where difficulties may arise is with three species of *Gelotia* (*G. argenteolimbata* Simon *G. bimaculata* Thorell and *G. frenata* Thorell) which also possess small posterior median eyes and a moderately long fovea. Confusion, however, is rather unlikely as the secondary genitalia of *Gelotia* species are quite distinct from those of *Cyrba*—males of *Gelotia* possess a cap-like retrolateral tibial apophysis, whereas the epigynes are characterised, at least in the species concerned, by a median ridge (Wanless, 1984).

AFFINITIES. Wanless (1984) suggested that on the basis of palpal morphology the genera *Cyrba*, *Brettus* Thorell, *Neobrettus* Wanless, *Phaeacius* Simon and *Portia* appeared to form a natural group within the Spartaecinae. *Cyrba* was associated with *Brettus* and *Neobrettus* while at the same time showing some affinities with *Portia*. *Portia* however, was tentatively linked with *Phaeacius*, a proposal which should now be reviewed as recent studies (Jackson, in press) have shown that *Phaeacius* species are flattened sit-and-wait predators behaviourally quite different from tested species of *Cyrba*, *Brettus* and *Portia*, which are rapidly moving cursorial predators of insects and specialised web-invading predators of other spiders. If the palpal organs of *Phaeacius* are also taken into account, then the presence of several unique characters (Wanless, 1984) would seem to confirm its somewhat isolated position, and

although an undoubted member of the group it is probably not as close to *Portia* as originally supposed. In fact the closest relative of *Portia* would now seem to be *Cyrba*, for the structure of the epigyne, especially the development of the embolic guides in relation to the openings of the introductory ducts (Fig. 6B, D) and presence of the palpal cymbial flange (Fig. 6A, arrowed), both possible synapomorphies, together with other palpal similarities noticed by Prószyński (1978) support a *Cyrba/Portia* dichotomy in spite of marked differences in habitus and development of palpal retrolateral tibial apophyses.

### Check list, known sex and distribution of species of *Cyrba*

<i>Cyrba algerina</i> (Lucas, 1846)	♂♀	Canary Islands; Guinea Bissau; India, Himalayas; Mediterranean Region; USSR, Tadjikistan.
<i>C. bimaculata</i> Simon, 1886	♂♀	Angola; Burundi; Cameroon; Kenya; Nigeria; Zaire
<i>C. boveyi</i> Lessert, 1933	♂♀	Angola; Kenya; Mozambique
<i>C. legendrei</i> sp. n.	♂♀	Comoro Islands; Madagascar
<i>C. lineata</i> sp. n.	♀	South Africa
<i>C. nigrimana</i> Simon, 1900	♀	South Africa
<i>C. ocellata</i> (Kroneberg, 1875)	♂♀	Australia, Wilson Island; Bhutan; Burma; French Somaliland; India; Java; Kenya; Nepal; Philippines; Singapore; Sri Lanka; Thailand; USSR, Tadjikistan; Vietnam.
Species Incertae Sedis		
<i>Cyrba armillata</i> Peckham & Peckham, 1907	♂♀	Borneo
<i>C. bidentata</i> Strand, 1906	♀	Ethiopia
<i>C. dotata</i> Peckham & Peckham, 1903	♀	South Africa
<i>C. szechenyii</i> Karsch in Lendl, 1897	♀	Hong Kong

### Key to species of *Cyrba*

**Males** (those of *lineata* and *nigrimana* unknown)

- 1 Embolus with pronounced basal prong (Figs 10F; 11C) . . . . . 2
- Embolus without basal prong . . . . . 3
- 2 Retrolateral tibial apophysis large and fan-like (Fig. 11C) Angola, Kenya, Mozambique  
*C. boveyi* Lessert (p. 463)
- Retrolateral tibial apophysis a slender prong (Fig. 10I) Angola, Burundi, Cameroon, Kenya, Nigeria, Zaire . . . . . *C. bimaculata* Simon (p. 461)
- 3 Retrolateral tibial apophysis with accessory blade-like prong (Fig. 5C, I) Canary Isl., Guinea Bissau, Mediterranean Region, Tadjikistan, Indian Himalayas . . . . .  
*C. algerina* (Lucas) (p. 452)
- Retrolateral tibial apophysis without an accessory blade-like prong . . . . . 4
- 4 Basal spur of retrolateral tibial apophysis relatively large and supported by a small angular ledge (Fig. 9D, arrowed) Comoro Isl., Madagascar . . . . . *C. legendrei* sp. n. (p. 458)
- Basal process of retrolateral tibial apophysis relatively small, angular ledge absent (Fig. 8A, B) Ethiopian and Oriental regions . . . . . *C. ocellata* (Kroneberg) (p. 455)

### Females

- 1 Epigynal area with darkened lateral slits (Fig. 12E, arrowed) South Africa . . . . .  
*C. nigrimana* Simon (p. 465)
- Epigynal area without lateral slits . . . . . 2
- 2 Epigynal caudal ledge with transverse suture (Fig. 11D, arrowed) Central and Southern Africa . . . . . *C. boveyi* Lessert (p. 463)
- Epigynal caudal ledge without transverse suture . . . . . 3
- 3 Epigynal caudal ledge with large lateral pouches (Fig. 13G, H, arrowed) and relatively acute posterior lobes (Fig. 13F, arrowed) South Africa . . . . . *C. lineata* sp. n. (p. 465)

- Epigynal caudal ledge without lateral pouches and more or less obtuse posterior lobes . . . . . 4
- 4 Epigynal area hardly if at all wrinkled; lobe of introductory ducts always present (Figs 8E-F; 9H, I; 10J, K) and sometimes visible as a dark patch in uncleared epigynes . . . . . 5
- Epigynal area wrinkled; lobes of introductory ducts never present (Fig. 6B, D) Canary Isl., Guinea Bissau, Mediterranean Region, Tadjikistan, Indian Himalayas . . . . .  
*C. algerina* (Lucas) (p. 452)
- 5 Epigynal caudal ledge with anterior margin of embolic guides extending laterally (Fig. 8C-E, arrowed) Ethiopian and Oriental Regions . . . . . *C. ocellata* (Kroneberg) (p. 455)
- Epigynal caudal ledge with anterior margins of embolic guide extending anteriorly (Figs 9H, 10J, K, arrowed) . . . . . 6
- 6 Epigynal caudal ledge relatively broad with deep median notch and large lobes (Fig. 10J) Angola, Cameroon, Kenya, Nigeria . . . . . *C. bimaculata* Simon (p. 461)
- Epigynal caudal ledge relatively narrow with shallow median notch and slight lobes (Fig. 9H) Comoro Isl., Madagascar . . . . . *C. legendrei* sp. n. (p. 458)

### *Cyrba algerina* (Lucas)

(Figs 2; 4A, B; 5A-I; 6A-E; 16A-F; 17A-D)

*Salticus algerinus* Lucas, 1846: 148, ♂, ♀. [types not examined ? lost].

*Attus leporinus* Koch, 1867: 874, ♀. [type not examined, ? lost].

*Attus armiger* Koch, 1867: 876, ♂. [type not examined, ? lost].

*Attus diversipes* Simon, 1868: 550, ♀. [type not examined, ? lost].

*Salticus cephalotes* (Sim.): O.P.-Cambridge, 1872: 321. [presumably lapsus calami for *Salaticus algerinus* Lucas].

*Cyrba algerina*: Simon, 1876: 167, [= *leporinus*, = *armiger*, = *diversipes*, = *cephalotes*]. Thorell, 1890: 83. Roewer, 1954: 984. Bonnet, 1956: 1338. Andreeva, 1969: 90. Prószyński, 1971: 396; 1978: 18. Schmidt, 1973: 348; 1975: 513; 1976: 315; 1977: 66. Hubert, 1979: 233. Wanless, 1984.

REMARKS. 1. The lost types referred to above have possibly been destroyed or as seems more likely mixed with more recent collections of *C. algerina*, in any event they cannot be found. Since *C. algerina* is the type species of *Cyrba* a female from Algeria is designated neotype. Other neotype designations are however, hardly necessary as the synonymy proposed by Simon (1876) is accepted.

2. A complete bibliography for *C. algerina* may be found in the catalogues of Roewer (1954) and Bonnet (1956).

DIAGNOSIS. Males of *C. algerina* are easily recognised by the form of the retrolateral tibial apophysis (Fig. 5C). Females are more difficult as the epigyne, which may have to be cleared in lactic acid, closely resembles those of *C. bimaculata*, *C. ocellata* and *C. legendrei*. Female *algerina* however, differ by having a noticeably wrinkled epigynal area (Fig. 6D) and by the absence of lobe-like folds at the distal ends of the curved portions of the introductory ducts (Fig. 6B, arrowed).

MALE from Crete, in good condition. *Carapace* (Fig. 5B, D): light orange with blackish quadrangle and margins; clothed in recumbent pale orange hairs with some whitish ones on lower slopes of thoracic part. *Eyes*: with black surrounds, fringed by orange and whitish hairs with scattered bristles above anteriors and below laterals. *Clypeus*: orange suffused black; thinly clothed in stout black hairs with scanty vertical stripes of white hairs centrally and at level of outer edges of anterior median eyes. *Chelicerae*: dull orange with median black markings; clothed in scattered black hairs with few whitish ones basally; promargin with three teeth, retromargin with four. *Maxillae and labium*: yellow-brown faintly tinged black with paler tips. *Sternum*: dull orange suffused with some black, shiny, thinly clothed in stiff brown-black hairs and vague whitish ones. *Coxae*: yellow-brown faintly tinged black, shiny, thinly clothed in fine black and white hairs. *Abdomen*: dull orange-brown suffused and mottled with some black; clothed in black lanceolate hairs and some bristles with conspicuous dorsal markings comprised of whitish and snow-white hairs; venter

also black, but with thin longitudinal stripes on either side; mytiliform field obscure; spinnerets black with greyish tips. *Legs*: legs I tarsi yellow-brown, other segments orange-brown heavily suffused black especially tibiae; remaining legs generally orange-brown with black marks and streaks; clothed in black and white hairs forming more or less distinct patches on tibiae and patellae of legs II and longitudinal stripes on dorsum and sides of

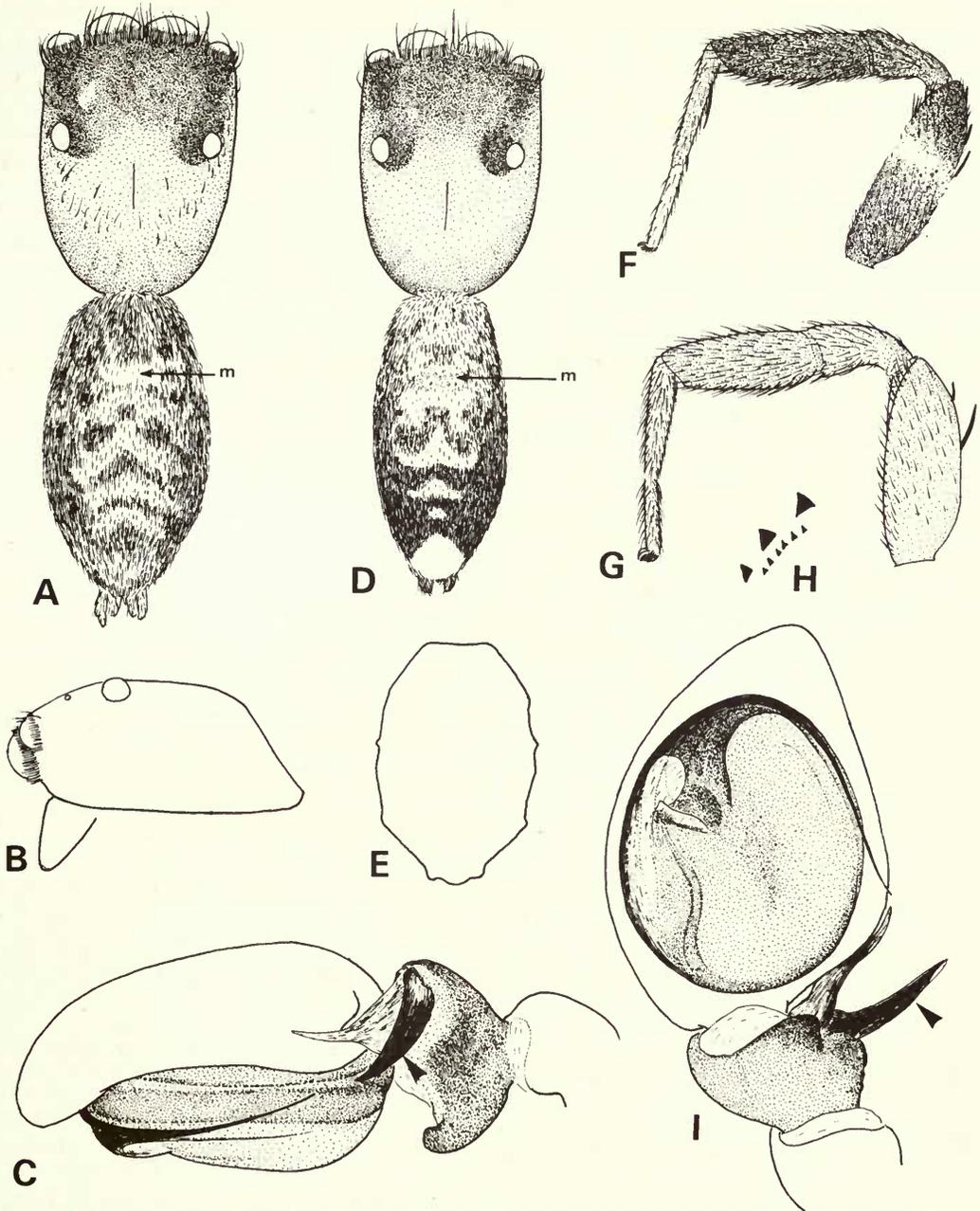


Fig. 5 *Cyrba algerina* (Lucas). ♀: A, dorsal; E, sternum; G, leg I; H, cheliceral teeth. ♂: B, carapace, lateral; C, palp retrolateral; D, dorsal; F, leg I; I, palp, ventral. Abbreviation: m, mytiliform field.

femora. Spination of legs I: metatarsi v 2-0-1, p 0-1-0, r 0-1-1, d 0-0-2; tibia v 2-2-2, p 1-0-1, r 1-0-1; patellae p 0-1-0, r 0-1-0; femora d 0-2-2, p 0-0-1. *Palp* (Figs 5C, I; 6A): femur and patella yellow-brown suffused with some black, tibia and cymbium heavily suffused black, the latter with an iridescent sheen.

*Dimensions* (mm): total length 4.6; carapace length 2.18, breadth 1.52, height 1.07; abdomen length 2.4; eyes, anterior row 1.5, middle row 1.24, posterior row 1.32; quadrangle length 1.04 (47% of carapace length). *Ratios*: AM : AL : PM : PL :: 11.5 : 7 : 1.2 : 6.4; AL-PM-PL :: 9-6; AM : CL :: 11.5 : 3.5.

**FEMALE** from Crete, in good condition, *Carapace* (Fig. 5A): light orange with blackish quadrangle and sooty margins; clothed in whitish/grey hairs and scattered bristles. *Eyes*: with black surrounds; fringed by buff hairs. *Clypeus*: orange suffused black, thinly clothed in rather strong long black hairs. *Chelicerae*: light orange tinged with some black; clothed in scattered black hairs and a few whitish ones basally; promargin with three teeth, retromargin with six. *Maxillae and labium*: orange-brown faintly tinged black with whitish tips. *Sternum and coxae*: pale orange-brown, shiny and thinly clothed in stiff brown-black hairs. *Abdomen*: yellow-brown suffused and mottled with some black; dorsally clothed in scattered bristles with golden and black lanceolate hairs forming a vague pattern of spots and chevrons; venter clothed in fine black and greyish hairs, mytiliform field obscure; spinnerets whitish with anteriors and posteriors suffused black. *Legs* (Fig. 5G): orange-brown except tibiae I which

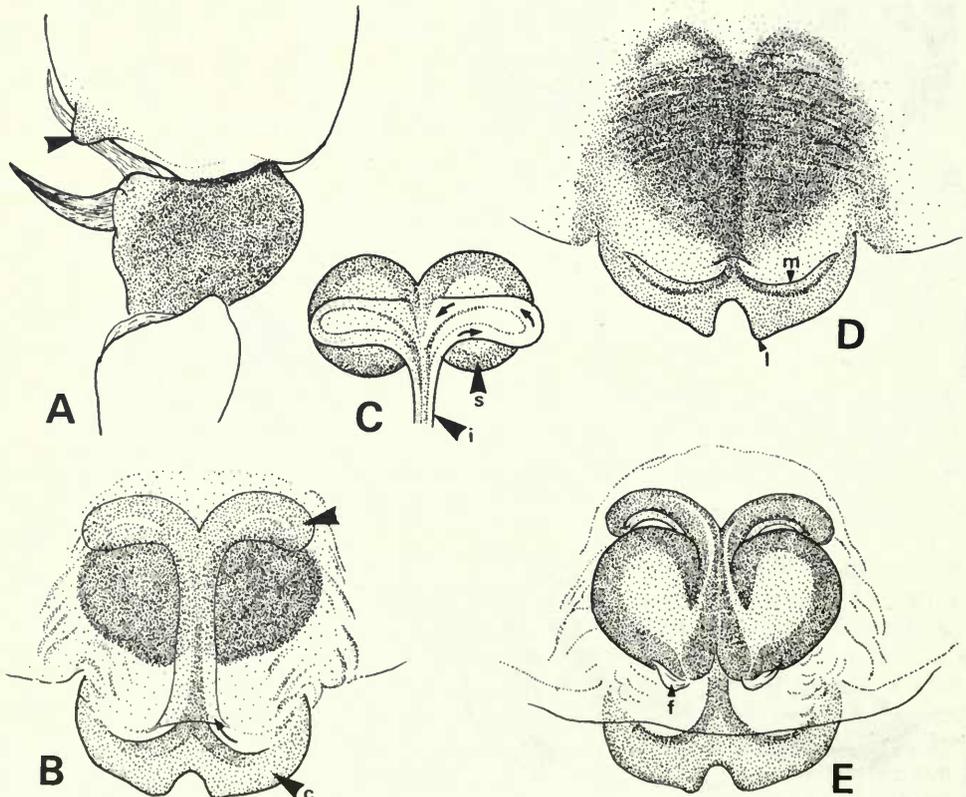


Fig. 6 *Cyrba algerina* (Lucas). ♂: A, palpal tibia, dorsal. ♀: B, vulva, outer view; C, spermathecae and introductory ducts, anterior view; D, epigyne; E, vulva, inner view. Abbreviations: c, caudal ledge; f, fertilisation duct; i, introductory duct; l, lobe of caudal ledge; m, margin of embolic guide; s, spermathecae.

are lightly suffused black and tibiae III–IV which are vaguely annulated; clothed in blackish hairs, especially legs I–II, with scattered white ones. Spination of legs I: metatarsi v 2-0-0; tibia v 2-2-2, femora d 0-2-3. *Palp*: femur and patella yellow-brown suffused black, tibia and tarsus darker; clothed in black hairs with scattered white ones. *Epigyne* (Fig. 6B–E): thinly clothed in black hairs; the distal folds of the introductory ducts characteristic of *C. bimaculata*, *C. legendrei* and *C. ocellata* are lacking in this species and thus never show through the integument as dark patches.

*Dimensions* (mm): total length 5.12; carapace length 2.36, breadth 1.7; height 1.16; abdomen length 2.64; eyes, anterior row 1.68, middle row 1.44, posterior row 1.54; quadrangle length 1.09 (46% of carapace length). *Ratios*: AM : AL : PM : PL :: 13 : 8 : 2 : 7.5; AL–PM–PL :: 9.5–6; AM : CL :: 13 : 2.5.

**VARIATION.** ♂ total length varies from 4.0 to 4.32 mm, carapace length 1.88–2.0 mm (ten specimens); ♀ total length 4.24–6.0 mm, carapace length 2.08–2.3 mm (ten specimens).

Males are sometimes less distinctively marked than the specimen described above. Also, females may be paler—the abdomen being creamy yellow with a somewhat speckled pattern comprised of brown-black lanceolate hairs (see Wanless, 1984).

**DISTRIBUTION.** Algeria; Bulgaria; Canary Islands; Corfu; Egypt; France; Greece; Guinea Bissau; Hungary; Indian Himalayas; Israel; Italy; Libya; Madeira; Mallorca; Morocco; Oman; Portugal; Sicily; Spain; Syria; Tunisia; USSR: Tadjikistan; Yugoslavia.

**MATERIAL EXAMINED.** **Algeria:** Heljani near Oran, Neotype ♀, ix–x. 1953, (BMNH. 1983.6.24.1); Biskra, 1♂, 2 juveniles, Keyserling coll. (BMNH. 1891.8.1.478–9). **France:** Pre Alps near Die, 2♂♂, 1♀, 25.v.1975, *P. D. Hillyard*, (BMNH); Pyrénées Orientales, Cerbère, juvenile, 23–24.vi.1962, *D. J. Clark*, (BMNH). **Libya:** Porto Bardia, 2 juveniles, iii.1927, (MZS, Firenze). **Italy:** Elba, Marciana Marina, 1♀, 17.ix–3.x.1969, *D. J. Clark*; Sicily, Messina, 3♂♂, 22.iii.1965, *M. Clifton*, (BMNH). **Greece:** Crete, 1♀, Akrotivi, 1♂, Phaestos, iv.1979, *J. & F. Murphy*; Terracina, 1♂, *T. R. R. Stebbing*, (BMNH. 1927.8.13.1180). **Portugal:** Algarve, under stones, 1♂, 1♀, *J. & F. Murphy* (BMNH). **Spain:** Canary Islands, Tenerife–Grand Canary–Fuerteventura, mixed ♂♂, ♀♀, juveniles, (MNHN, Paris. 14127); Arucas, 800–1000 ft, 1♀, 25.vii.1925, (MCZ, Harvard); Torremolinos, 1♂, iv.1975, *P. D. Hillyard*; Mallorca, Deyá, 1♂, vi.1971, *B. Graves*; Mallorca, Puerto Soller, juveniles, 9–12.x.1966, *D. J. Clark*; Puerto Pollensa, juveniles, x.1968, *D. J. Clark*, (BMNH). **Yugoslavia:** Dalmatia, 1♂, 2 juveniles, Keyserling coll. (BMNH. 1891.8.1.476–477).

### *Cyrba ocellata* (Kroneberg) sp. rev.

(Figs 7A–F; 8A–G; 18A–C)

*Euophrys ocellata* Kroneberg, 1875: 48, ♀. LECTOTYPE ♀ (here designated) USSR, Samarkand, (NR. Stockholm) [examined]. Kroneberg, 1888: 191. [Thorell, 1890: 83, incorrectly synonymised with *C. algerina* (Lucas)].

*Cyrba micans* Simon, 1885: 22, ♂. LECTOTYPE ♂ (here designated) India, (MNHN, Paris) [examined]. Simon, 1901: 447, 448; 1903: 731. Roewer, 1954: 985. Bonnet, 1956: 1339. Prószyński, 1971: 396; 1978: 16. **Syn. n.**

*Stasippus inornatus* Thorell, 1887: 375, ♀. LECTOTYPE ♀ (here designated) Burma (NR. Stockholm). [Thorell, 1890: 83, incorrectly synonymised with *C. algerina* (Lucas)]. **Syn. n.**

*Vindima maculata* Thorell, 1895: 348, ♂. Holotype ♂, Burma (BMNH 1895.9.21.1057) [examined]. Roewer, 1954: 1703, Bonnet, 1959: 4797.

*Cyrba flavimana* Simon, 1899: 103, ♀. LECTOTYPE ♀ (here designated) (MNHN. Paris) [examined]. Simon, 1901: 448. Roewer, 1954: 985. Bonnet, 1956: 1339. Prószyński, 1971: 396; 1978: 16 [= *C. micans*].

*Astia maculata*: Simon, 1901: 436. Roewer, 1954: 968. Bonnet, 1955: 768. Prószyński, 1971: 379. **Syn. n.**

*Cyrba tadzhika* Andreeva, 1969: 89, ♂, ♀, [not examined]. Prószyński, 1971: 396, [= *C. micans*].

*C. tadzhika*: Prószyński, 1971: 396 [lapsus calami].

**DIAGNOSIS.** Males of *C. ocellata* are most likely to be confused with those of *C. legendrei*,

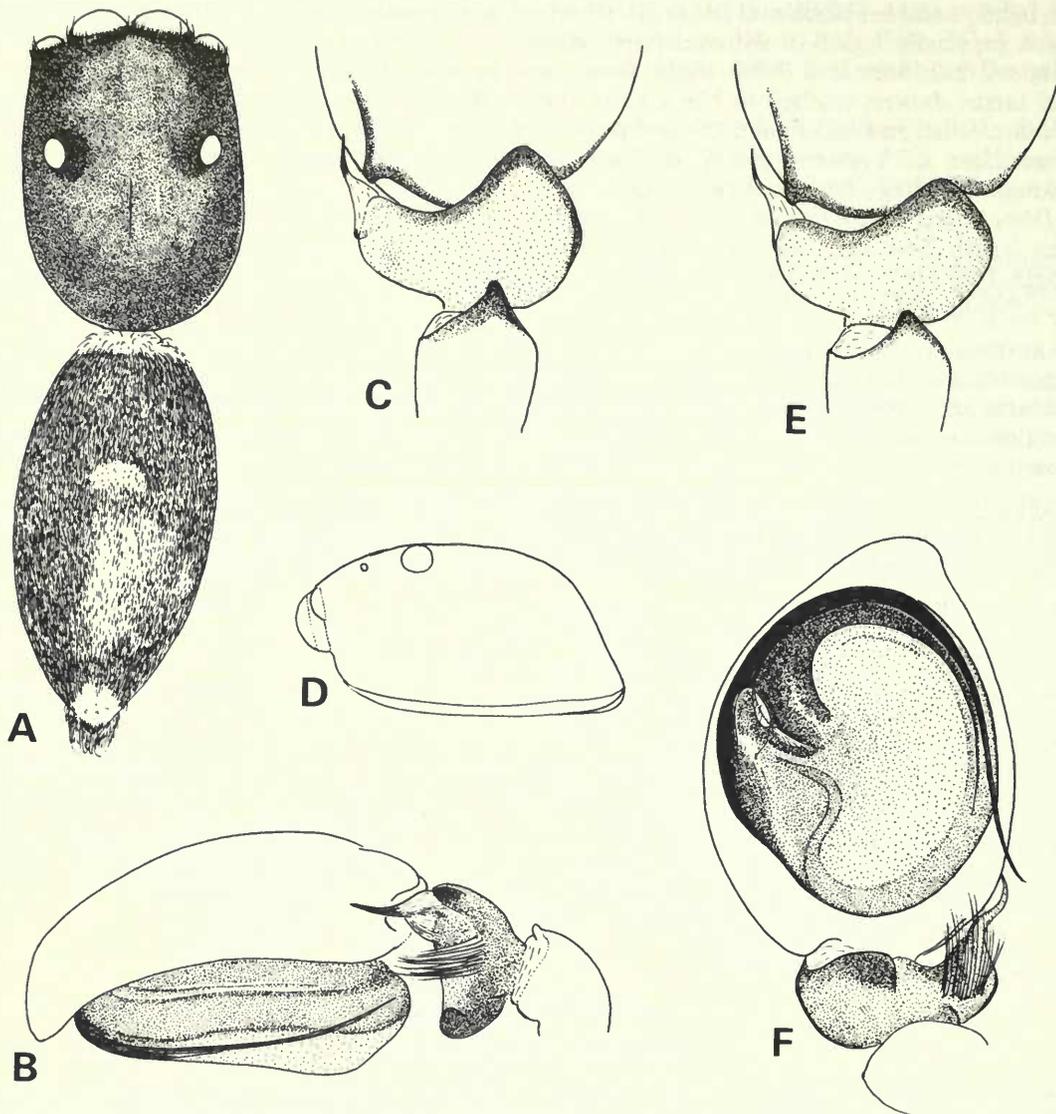


Fig. 7 *Cyrba ocellata* (Kroneberg). ♂ from Sri Lanka: A, dorsal; C, palpal tibia, dorsal; D, carapace, lateral. Lectotype ♂ [*C. micans*]: B, palp, retrolateral; E, palpal tibia, dorsal; F, palp, ventral.

but can be distinguished by the absence of a longitudinal abdominal stripe and ledge supporting the posterior spur of the retrolateral tibial apophysis (Fig. 8A, B). Females on the other hand could be confused with those of *C. algeria*, *C. bimaculata* or *C. legendrei* since the epigynes are rather similar to one another. *C. ocellata* is however, readily separated from *algerina* by the presence of large distal lobes on the curving part of the introductory ducts (Fig. 8E, F) and from both *bimaculata* and *legendrei* by the form of the embolic guides which extend laterally (Fig. 8C–E, arrowed) rather than anteriorly.

MALE from Sri Lanka, in good condition. *Carapace* (Fig. 7A, D): brown suffused and mottled black with an iridescent sheen under some angles of illumination; generally clothed in grey-black shining hairs with a thin white haired marginal band and whitish hairs on sides below

anterior lateral and posterior median eyes, and base of thoracic slope. *Eyes*: with black surrounds; fringed by grey-black and white hairs. *Clypeus*: clothed in whitish hairs with fringe of stiff blackish hairs interrupted medially by group of long whitish ones. *Chelicerae*: brown with black markings; thinly covered in white hairs basally with fine blackish ones along inner margins; promargin with three teeth, retromargin with five. *Maxillae*: yellow-brown tinged black with paler inner margins. *Labium*: yellow-brown with paler edging. *Sternum and coxae*: yellow-brown suffused black; shiny with whitish hairs. *Abdomen*: yellow-brown suffused and mottled black; clothed in black lanceolate hairs with conspicuous white haired patches basally, medially, on lateral sides and around spinnerets; mytiliform field inconspicuous; spinnerets blackish. *Legs*: femora blackish/iridescent, clothed in black hairs with longitudinal white haired stripes; other segments yellow-brown suffused with some black, clothed in black and clear whitish hairs forming vague longitudinal stripes on posterior tibiae; spines moderately strong and numerous. Spination of legs I: metatarsi v 2-0-1, p 1-0-2; r 1-0-2; tibiae v 2-1-3, p 1-0-2, d 0-1-0, r 1-0-1; patellae p 0-1-0, r 0-1-0; femora d 0-2-4. *Palp* (Fig. 8B): femur and patella yellow-brown suffused black with covering of whitish hairs, tibia and cymbium much darker with black and some white hairs.

*Dimensions* (mm): total length 4.72; carapace length 2.08, breadth 1.48, height 1.12; abdomen length 2.6; eyes, anterior row 1.32, middle row 1.12, posterior row 1.26; quadrangle length 0.88 (42% of carapace length). *Ratios*: AM : AL : PM : PL :: 10.5 : 6 : 1.5 : 6; AL-PM-PL :: 7-5; AM : CL :: 10.5 : 4.

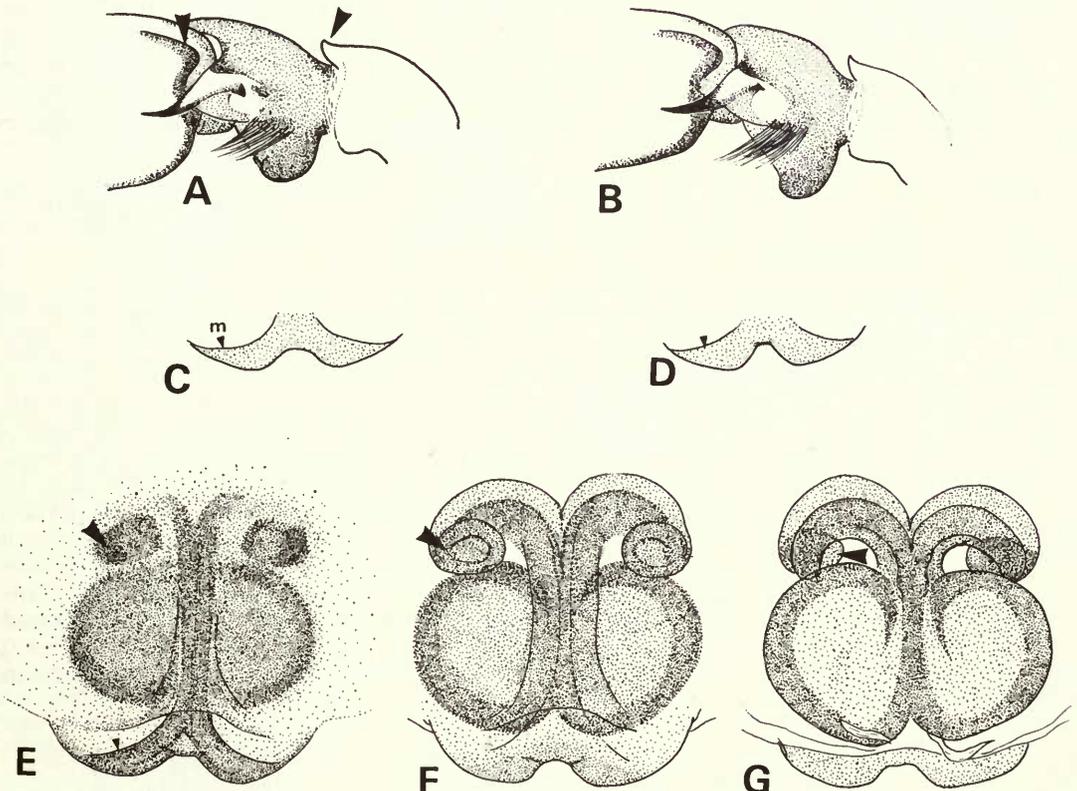


Fig. 8 *Cyrba ocellata* (Kroneberg). A, ♂ from Kenya, palpal retrolateral tibial apophysis. B, ♂ from Sri Lanka, palpal retrolateral tibial apophysis showing variation in basal spur development. C, D, ♀: caudal ledge variation. E, ♀ lectotype [*C. flavimanis*], epigyne. ♀: F, vulva, outer view; G, vulva, inner view.

FEMALE from Sri Lanka, in good condition. Similar to  $\sigma$ , but lacking conspicuous white markings. *Carapace*: orange-brown mottled with some black with blackish eye region and an iridescent sheen under some angles of illumination; clothed in grey-black shining hairs and scattered bristles (evidently rubbed in  $\sigma$ ). *Eyes*: posteriors fringed by greyish hairs with dull amber ones around anteriors, also above anteriors numerous scattered bristles. *Clypeus*: fringed by greyish and dull amber hairs. *Chelicerae*: amber suffused with some black, shiny with scattered grey-black hairs; promargin with three teeth, retromargin with six. *Maxillae, labium, sternum and coxae*: more or less as in  $\sigma$  except for grey-black hairs on coxae and sternum. *Abdomen*: yellow-brown suffused and mottled black; clothed in greyish lanceolate hairs and black bristles with obscure creamy spots posteriorly and on either side of anal tubercle. *Legs*: yellow-brown suffused with some black especially on femora; spines moderately strong, most numerous on posterior legs. Spinination of legs I: metatarsi v 2-0-0; tibiae v 2-2-2; femora d 0-2-3, p 0-0-1. *Epigyne*: as in Fig. 8E, but darker.

*Dimensions* (mm): total length 4.16; carapace length 1.76, breadth 1.36, height 0.98; abdomen length 2.4; eyes, anterior row 1.34, middle row 1.17, posterior row 1.28; quadrangle length 0.95 (53% of carapace length). *Ratios*: AM : AL : PM : PL :: 10.5 : 6.5 : 1.5 : 6; AL-PM-PL :: 7-5; AM : CL :: 10.5 : 1.

VARIATION.  $\sigma$  total length varies from 4.36 to 5.12 mm, carapace length 1.88-2.36 mm (ten specimens);  $\varphi$  total length 4.08-6.1 mm, carapace length 1.76-2.44 mm (ten specimens).

Freshly preserved specimens are usually dark whereas older material is inevitably bleached, often yellow-brown or orange-brown with only faint blackish mottling on the abdomen. The male palpal retrolateral tibial apophysis also seems to vary. In the lectotype  $\sigma$  of *C. micans* (Fig. 7B) there is in lateral view only a slight suggestion of a bleached backward pointing spur which is however, more evident when viewed slightly from above. Additional material from Kenya and Sri Lanka possess even larger spurs (Fig. 8A, B) which seem quite distinct when compared with the lectotype of *micans*. They were initially believed to represent another taxon, but a series of males from Vietnam shows that the development of the spur is variable.

DISTRIBUTION, Australia; Bhutan; Burma; French Somaliland; India; Indonesia; Kalimantan; Java; Kenya; Nepal; Philippines; Singapore; Sri Lanka; Sumatra; Thailand; USSR; Tadzhikistan; Vietnam.

MATERIAL EXAMINED. **Australia**: Wilson Island, Great Barrier Reef, 1 $\varphi$ , 9.ix.1969, *H. Heatwole*, (Queensland Museum). **Burma**: Tharrawaddy, holotype  $\sigma$ , [of *Vindima maculata*] *E. W. Oates*, (BMNH. 1895.9.21.1057); Bhamo, syntype [of *Stasippus inornatus*] *L. Fea*, leg, presented by G. Doria, (NR, Stockholm 6521). **French Somaliland**: Djibouti, 1 $\sigma$ , vii.1974. *P. Leriche*, (MRAC, Tervuren. 146.264). **India**: Collegal, Coimbatore District, lectotype  $\sigma$ , [of *C. micans*] *M. A. Theobald*, (MNHN, Paris, 7671). **Indonesia**: Kalimantan, International Timber Corporation of Indonesia, 12 km North of Balikpapan, 1 $\varphi$ , 19.x.1975, *R. Thomson* (BMNH). **Java**: 1  $\sigma$ , *Kulczyński* collection, (MNHN, Paris. 15780). **Kenya**: Elyic Point, Lake Rudolf, 1 $\sigma$ , iii.1920, *J. Miskell*, (BMNH). **Philippines**: Antipolo, 1 $\sigma$ , *E. Simon*, (MNHN, Paris. 15780). **Sri Lanka**: Wirawila, Hambantoto District, Mike Northways Sanctuary, 1 $\sigma$ , on tree trunk. 19.x.1982, *F. R. Wanless*; Nilaveli, Trincomalee District, 1 $\varphi$ , dry scrub jungle, on vegetation, 27.x.1982, *F. R. Wanless*, (DNM, Colombo); Pollebedde, Maha-Oya District, 1 $\sigma$ , 16.viii.1963, *M. Speight*, Univ. Lond. Ceylon Expd. (BMNH). **Singapore**: 1 $\varphi$ , (MNHN, Paris. 12674). **Sumatra**: lectotype  $\varphi$  [of *C. flavimanus*] *J.-L. Weyers*, (MNHN, Paris, 16271). **Thailand**: Chiang Mai Province, Fang Horticultural Exp. Stn. 550-600 m. 1 $\varphi$ , 20.x.1981 (UZM, København). **USSR**: Samarkand, lectotype  $\varphi$ , [of *Euophrys ocellata*] *Fedtschenko & Kroneberg*, (NR, Stockholm, Thorell collection, 251/1612c).

### *Cyrsa legendrei* sp. n.

(Fig. 9A-J)

DIAGNOSIS. Males of *C. legendrei* are similar to those of *C. ocellata*, but may be distinguished by the presence of a longitudinal abdominal stripe (i.e. in unrubbed specimens) and ledge which appears to support the posterior prong of the retrolateral tibial apophysis (Fig. 9D,

arrowed). Females resemble those of *C. algerina*, *C. bimaculata* and *C. ocellata*. They are separated from *algerina* by the absence of marked wrinkling in the epigynal area and presence of distal folds on the curving part of the introductory ducts (Fig. 9H, I); from *bimaculata* by the poorly developed lobes of the caudal ledge (Fig. 9H) and from *ocellata* by the anteriorly curved margins of the embolic guides (Fig. 9H, arrowed).

*C. legendrei* also seems to have a rather limited geographical distribution and is only known to occur in Madagascar and the Comoro Islands.

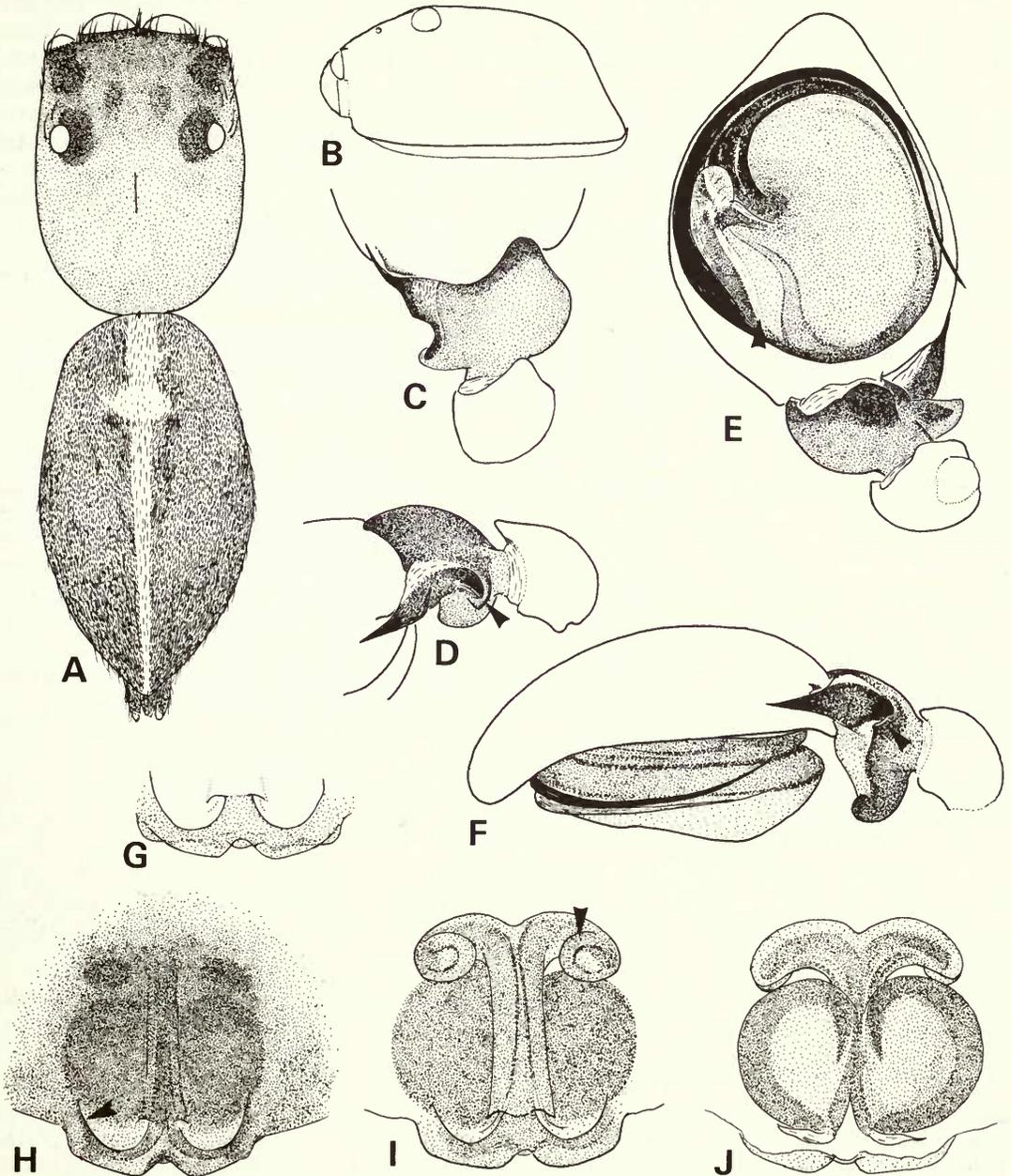


Fig. 9 *Cyrba legendrei* sp. n., holotype ♂: A, dorsal; B, carapace, lateral; C, palpal tibia, dorsal; D, palpal tibia, dorsolateral; E, palp, ventral; F, palp, retrolateral. Paratype ♀: G, caudal ledge cleared, viewed slightly from behind; H, epigyne; I, vulva, outer view; J, vulva, inner view.

MALE HOLOTYPE, in good condition. *Carapace* (Fig. 9A, B): pale orange-brown lightly suffused black in eye region; clothed in recumbent fine whitish and pale golden hairs with scattered bristles dorsally. *Eyes*: with black surrounds; fringed by whitish hairs. *Clypeus*: amber lightly mottled black; thinly covered in whitish and black hairs. *Chelicerae*: weakly iridescent; yellow-brown with blackish markings, clothed in fine scattered hairs; promargin with three teeth, retromargin with five. *Maxillae*: grey to yellow-brown with whitish inner distal margins. *Labium*: grey with yellowish grey margins. *Sternum*: yellow-brown faintly tinged black with darker margins; shiny, clothed in stiff brownish hairs. *Coxae*: colour as sternum. *Abdomen*: generally yellow-brown; covered in recumbent brown-black lanceolate hairs and fine scattered bristles with dorsal longitudinal stripe clothed in whitish hairs, ventrally a pair of yellow-brown stripes converging posteriorly; mytiliform field obscure; spinnerets grey-black with whitish tips. *Legs*: legs I femora yellow-brown with black prolateral/ventral patches, other segments orange-brown suffused with some black on dorsum of tibiae, metatarsi and tarsi, thinly clothed in black, grey and some white hairs; legs II similar to I except black markings less extensive; legs III and IV generally orange-brown with vague longitudinal stripes comprised of black and whitish hairs especially on femora, patella and tibiae of legs IV; spines moderately strong and numerous. Spination of legs I: metatarsi v 2-0-0, p 0-1-1, d 0-0-1, r 0-1-1; tibiae v 2-2-2, p 1-0-1, r 0-0-1; patellae p 0-1-0, r 0-1-0; femora d 0-2-2, p 0-0-1. *Palp* (Fig. 9C-F): basal retrolateral flange of cymbium small compared with that of *C. ocellata*.

*Dimensions* (mm): total length 4.24; carapace length 1.86, breadth 1.36, height 1.0; abdomen length 2.36; eyes, anterior row 1.24, middle row 1.08, posterior row 1.18; quadrangle length 0.8 (43% of carapace length). *Ratios*: AM : AL : PM : PL :: 9.5 : 5.5 : 1.0 : 5.5; AL-PM-PL :: 6.5 : 5 : 5; AM : CL :: 9.5 : 4.0.

FEMALE PARATYPE, in good condition, *Carapace*: orange-brown lightly suffused with some black; clothed in recumbent greyish hairs and scattered bristles with vague longitudinal stripes of shining hairs on thoracic slope. *Eyes*: laterals with black surrounds; fringed by greyish and buff hairs. *Clypeus*: clothed in buff hairs. *Chelicerae*: orange-brown with sooty markings; weakly iridescent, clothed in scattered fine grey-black hairs; promargin with three teeth, retromargin with six. *Maxillae and labium*: orange-brown lightly tinged black with whitish yellow tips. *Sternum and coxae*: orange-brown tinged black with scattered brown hairs. *Abdomen*: yellowish brown lightly tinged with some black; clothed in recumbent light brownish grey hairs and scattered black bristles; ventrally a pair of converging lateral stripes as in ♂; mytiliform field obscure; spinnerets blackish with paler tips. *Legs*: generally orange-brown suffused and mottled black; spines moderately strong, most numerous on posterior legs. Spination of legs I: metatarsi v 2-0-0; tibiae v 2-2-2, femora d 0-2-2, p 0-0-1. *Palp*: femora and patella orange-brown tinged with some black, other segments darker. *Epigyne* (Fig. 9H-J): the caudal ledge bears a slight recess on either side—best seen when the cleared epigyne is viewed from above and slightly behind (Fig. 9G).

*Dimensions* (mm): total length 4.96; carapace length 2.0, breadth 1.48, height 1.04; abdomen length 3.12; eyes, anterior row 1.36, middle row 1.24, posterior row 1.36; quadrangle length 0.88 (44% of carapace length). *Ratios*: AM : AL : PM : PL :: 10.5 : 6 : 1.3 : 6; AL-PM-PL :: 7.5; AM : CL :: 10.5 : 2.

VARIATION. Females vary from 4.2 to 5.28 mm total length, 1.84–2.4 mm carapace length (five specimens).

DISTRIBUTION. Comoro Islands; Madagascar.

MATERIAL EXAMINED. **Grande Comore**: Grotte Dubois, paratype ♀, xi.1954, *J. Millot*, (MNHN, Paris). **Madagascar**: Manjakatempo, Mt. Ankaratra, holotype ♂, paratype ♀, ii.1967, *R. Legendre*, (MNHN, Paris); Prov. Tananarive, Tziazompaniry, a small water fall S. of Tananarive, paratype ♀, iii.1958, *R. Legendre*, (BMNH, 1983.4.6.1); F. Ambodivoangy, forest near Maroantsetra, E. Madagascar, paratype ♀, 1948, *J. Millot*, (MNHN, Paris); Environs of Tananarive, paratype ♀, under stones, 6.xi.1927, *R. Decary*—Entrée 6, 1928, (MNHN, Paris); paratype ♀, viii.1947, locality illegible (MNHN, Paris).

ETYMOLOGY. This species is named after Professor R. Legendre, Université des Sciences et Techniques du Languedoc, Montpellier.

*Cyrba bimaculata* Simon

(Figs 1; 10A–L: 17E, F; 22E)

*Cyrba bimaculata* Simon, 1886: 392, ♀. LECTOTYPE ♀ (here designated) Angola, (MNHN, Paris) [examined]. Simon, 1901: 448. Roewer, 1954: 985. Bonnet, 1956: 1339. Prószyński, 1971: 396.

DIAGNOSIS. Males of *C. bimaculata* are easily recognised by the combined presence of an embolic prong and simple retrolateral tibial apophysis (Fig. 10F, I). Females are more difficult, but may be separated from *C. algerina* by the absence of marked wrinkling in the epigynal area and presence of small lobes on the curving parts of the introductory ducts (Fig. 10J, K); from *C. ocellata* by the anteriorly curved margins of the embolic guides (Fig. 10J, K) and from *C. legendrei* by the relatively pronounced lobes of the caudal ledge (Fig. 10J).

MALE from Kenya, formerly undescribed, in good condition. *Carapace* (Fig. 10C, D): yellow-brown with sooty markings in quadrangle; clothed in recumbent bright orange hairs. *Eyes*: laterals with black surrounds; fringed by whitish and bright orange hairs with scattered black bristles above anteriors. *Clypeus*: yellow-brown clothed in whitish hairs with black patches clothed in grey-black hairs below each anterior median and anterior lateral eye. *Chelicerae*: pale yellow-brown lightly speckled with some black; shiny, thinly clothed in fine whitish hairs with blackish ones along inner distal margins; promargin with three teeth, retromargin with five. *Maxillae*: pale yellow-brown. *Labium*: yellow-brown. *Sternum and coxae*: light yellow-brown, clothed in fine pale orange and greyish hairs. *Abdomen*: pale yellow-brown covered in recumbent bright orange hairs and scattered black bristles; mytiliform field relatively distinct; spinnerets greyish with black hairs. *Legs* (Fig. 10B): pale yellow-brown clothed in bright orange hairs with tibiae, metatarsi and base of tarsi suffused and streaked black with covering of orange and grey hairs the latter forming an indistinct fine ventral fringe on metatarsi III and IV; spines moderately strong and numerous. Spination of legs I: metatarsi v 0-2-0, p 0-1-2, r 0-1-2; tibiae v 2-2-2, p 1-0-1, r 1-0-1; patellae p 0-1-0, r 0-1-0; femora d 0-2-3. *Palp* (Fig. 10E, F, I): femora yellow-brown clothed in orange hairs except for blackish prolateral markings distally; patellae greyish yellow with orange hairs basally becoming dark with black hairs distally; other segments brown suffused black with black hairs except for greyish scopula on cymbial tip.

*Dimensions* (mm): total length c. 4.3 (bent); carapace length 1.98, breadth 1.52, height 1.12; abdomen length 2.34; eyes, anterior row 1.4, middle row 1.24, posterior row 1.38; quadrangle length 0.99 (50% of carapace length). *Ratios*: AM : AL : PM : PL :: 11 : 6.8 : 1.5 : 6.3; AL-PM-PL :: 9-5.6; AM : CL :: 11 : 5.3.

FEMALE from Kenya, rubbed, but otherwise in good condition. *Carapace*: light orange-brown, weakly iridescent under some angles of illumination irregularly and scantily clothed in greyish lanceolate hairs. *Eyes*: laterals with black surrounds, fringed by pale amber hairs. *Clypeus*: clothed in pale amber hairs. *Chelicerae* (Fig. 10H): yellow-brown lightly suffused with some black; shiny with scattered light greyish hairs. *Maxillae and labium*: generally as in ♂. *Sternum* (Fig. 10G): yellow-brown with vague darker margins; shiny; thinly clothed in grey hairs. *Coxae*: yellow-brown with scattered grey hairs. *Abdomen*: whitish yellow tinged grey; rubbed; mytiliform field indistinct; spinnerets whitish yellow suffused black. *Legs*: moderately long and slender with metatarsi and tibiae of legs I-II a little swollen (Fig. 10A); generally light orange-brown, but metatarsi I and tibiae I suffused black; spines moderately strong, most numerous on posterior legs. Spination of legs I: metatarsi v 2-0-0; tibiae v 2-2-2; femora d 0-2-2, p 0-0-1. *Epigyne* (Fig. 10J-L).

*Dimensions* (mm): total length c. 5.12 (pedicel stretched); carapace length 1.84, breadth 1.44, height 1.04; abdomen length 3.08; eyes, anterior row 1.44, middle row 1.28, posterior

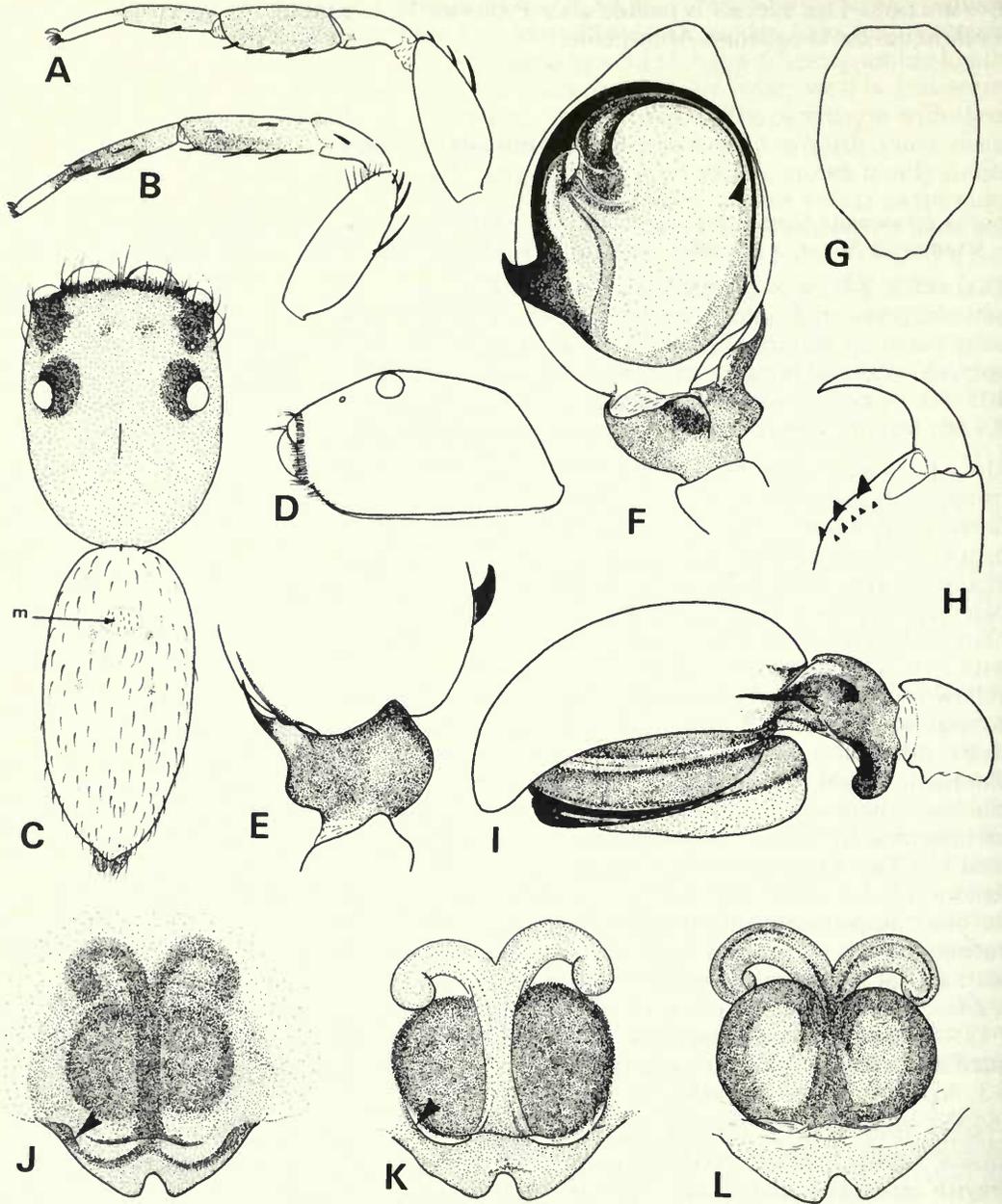


Fig. 10 *Cyrba bimaculata* Simon, ♂: B, leg I; C, dorsal; D, carapace, lateral; E, palpal tibia, dorsal; F, palp, ventral; I, palp, retrolateral. ♀: A, leg I; G, sternum; H, chelicera; J, epigyne; K, vulva, outer view; L, vulva, inner view. Abbreviation: m, mytiliform field.

row 1·4; quadrangle length 0·92 (50% of carapace length). Ratios: AM : AL : PM : PL :: 12 : 6·4 : 1·2 : 6; AL-PM-PL :: 8-6; AM : CL :: 12 : ca. 2.

VARIATION. Males vary from 4·04 to 4·44 mm total length, 1·76-1·98 mm carapace length (three specimens); females vary from 4·7-5·5 mm total length, 1·84-2·04 mm carapace length (six specimens).

The integument varies from whitish in the lectotype to dark brown in a specimen from the Cameroons. Also, the bright orange hairs, which are easily rubbed, fade to light brown or amber after three or four years preservation.

**DISTRIBUTION.** Angola; Burundi; Cameroon; Kenya; Nigeria; Zaire.

**MATERIAL EXAMINED.** **Angola:** Cabinda, route Dingo-Buco, under bark of living trees, 1♀, 30.v.1973, *A. de Barros Machado*, Ang. 23375.9; Landana, lectotype ♀, *L. Petit*, (MNHN, Paris, 7644). **Burundi:** Plaine de la Ruzizi, Secteur de Gihanga, 900 m, dans terreau de bambous, v.1966, *S. Ndani*, MT 130590 & 130600, (MRAC, Tervuren). **Cameroon:** 1949–50, 1♀. **Kenya:** Kilifi, leaf litter, 1♂, 1♀, iix.1980, *J. & F. Murphy*, 9137. **Nigeria:** Gambari, Forest Reserve, Ibadan, 2♂♂, 3♀♀, 8.iv.1973, *A. Russell-Smith*, (BMNH). **Zaire:** Terr. Uvira: Lake Tanganyika, 'banks', 2♂♂, vi.1958, *N. Leleup*, MT. 112626; Kivu, Itombwe, (Kakazi) moyenne Masunga, vestiges ole forêt Heliophile, 1200 m, 1♀, vi.1961, *N. Leleup*, B152; Kivu, ruiss entre Kalimabenge-Kambekulu, sous des pierres, 1♂, v.1962, *R. Kiss*, MT. 122799; Ile de M'Boko, Kivu, 1♀, 6.ii.1957, *N. Leleup*, MT. 91347 & 91351. Province Moyen Congo, Bumba, 1♂, I.1940, *Saeger*, MT. 20081. Province Kasi, Kassi, Mwadia, 1♂, *Fourche*, MT. 11983; Prov. Kivu, Komi, 5♂♂, 2♀♀, *J. Ghesquiere*, MT. 11859. (MRAC, Tervuren).

### *Cyrba boveyi* Lessert

(Fig. 11A–F)

*Cyrba boveyi* Lessert, 1933: 145, ♂. Holotype ♂, Angola; paratype ♂, Mozambique, (MHN, Geneva), [examined]. Lessert, 1936: 288. Roewer, 1954: 985. Bonnet, 1956: 1339. Prószyński, 1971: 396. Cutler, 1976: 131.

**DIAGNOSIS.** A distinctive species easily recognised by the fan-like retrolateral tibial apophysis in males (Fig. 11B, C) and presence of a transverse epigynal suture in females (Fig. 11D, arrowed).

**MALE HOLOTYPE**, bleached otherwise in good condition. General habitus typical of genus. **Carapace:** pale yellowish orange with sooty markings in quadrangle and fine whitish hairs on sides; dorsum rubbed. **Eyes:** laterals with black surrounds; fringed by whitish hairs with scattered bristles above anterior medians and anterior laterals. **Clypeus:** covered in whitish hairs. **Chelicerae:** pale whitish yellow faintly tinged with some black; clothed in fine hairs along inner margins; pro- and retromargins with three teeth. **Maxillae, labium, sternum and coxae:** whitish yellow, shiny. **Abdomen:** whitish yellow faintly suffused and mottled with some black. **Legs:** generally whitish yellow except for tibiae I which are faintly tinged black and clothed in light amber hairs. Spination of legs I: metatarsi v 2-0-2, p 0-1-0, d 0-0-1; tibiae v 2-2-2, p 0-0-1, d 1-1-0, r 0-0-1; patellae p 0-1-0, r 0-1-0; femora d 0-2-3. **Palp** (Fig. 11A–C): the patellar apophysis is probably more conspicuous in fresh material.

**Dimensions** (mm): total length 4.4; carapace length 1.92, breadth 1.44, height 0.99; abdomen length 2.4; eyes, anterior row 1.42, middle row 1.2, posterior row 1.32; quadrangle length 0.92 (47% of carapace length). **Ratios** : AM : AL : PM : PL :: 11 : 6.3 : 1.5 : 6.3; AL–PM–PL :: 7–5; AM : CL :: 11 : 3.

**FEMALE** from Kenya, formerly undescribed, in good condition. General habitus typical of genus. **Carapace:** orange-brown lightly suffused and mottled with some black; iridescent under some angles of illumination; clothed in recumbent shining light greyish hairs and scattered bristles. **Eyes:** with black surrounds; fringed by light amber and whitish hairs. **Clypeus:** thinly clothed in dull whitish hairs and scattered bristles. **Chelicerae:** orange-brown lightly tinged with some black; shiny with scattered grey hairs; promargin with three teeth, retromargin with four. **Maxillae:** orange-brown faintly tinged black with whitish inner margins. **Labium:** orange-brown lightly tinged black with whitish tip. **Sternum:** pale orange-brown faintly suffused black; shiny with scattered pale greyish hairs. **Coxae:** colour as sternum except posteriors lighter. **Abdomen:** greyish yellow clothed in recumbent grey and light yellow-brown hairs with scattered bristles; mytiliform field obscure. **Legs:** generally orange-brown lightly suffused with some black; thinly clothed in greyish black hairs; spines

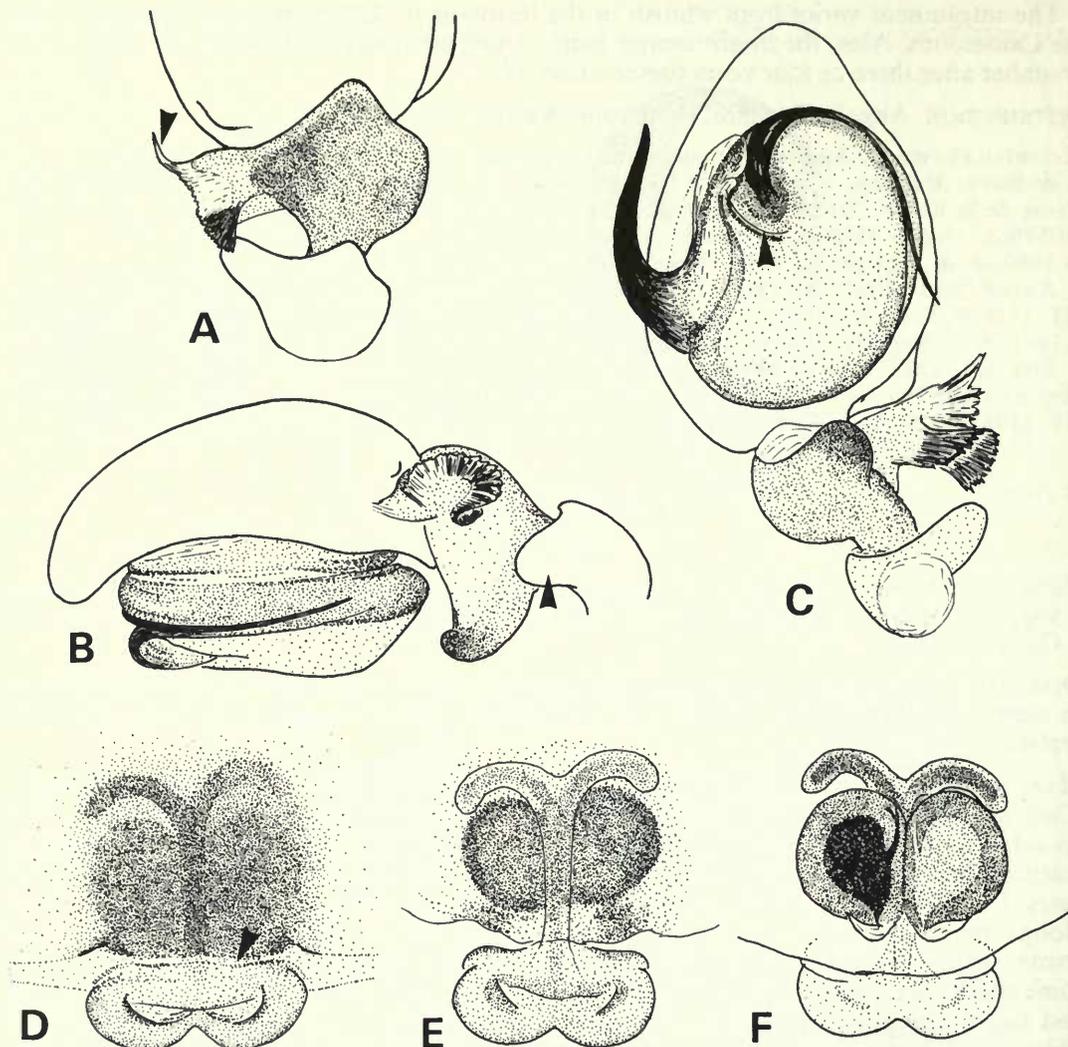


Fig. 11 *Cyrba boveyi* Lessert, paratype ♂: A, palpal tibia, dorsal. Holotype ♂: B, palp, retro-lateral; C, palp, ventral. ♀: D, epigyne; E, vulva, outer view; F, vulva, inner view.

moderately strong, most numerous on posterior legs. Spination of legs I: metatarsi v 2-0-0; tibiae v 2-2-2; femora d 0-0-2, p 0-0-1 *Palp*: light brownish with tarsus and tibia orange-brown faintly tinged black. *Epigyne* (Fig. 11D-F): the channels leading into and out of the spermathecae are unusually clear in this specimen.

*Dimensions* (mm): total length 5.16; carapace length 2.16, breadth 1.64, height 1.12; abdomen length 2.8; eyes, anterior row 1.64, middle row 1.36, posterior row 1.53; quadrangle length 1.08 (50% of carapace length). *Ratios*: AM : AL : PM : PL :: 13 : 7.5 : 1.4 : 7; AL-PM-PL :: 8.5-5.5; AM : CL :: 13 : 2.

**VARIATION:** Although damaged the retrolateral tibial apophysis of the paratype male shows that the distal prong (Fig. 11A, arrowed) has broken off in the holotype.

**DISTRIBUTION.** Angola; Kenya; Mozambique.

**MATERIAL EXAMINED.** Angola: Chimporo, holotype ♂, xi.1928, *Monard Collection*, (MHN, Geneva).

**Kenya:** Baringo, Central Island, grubbing in grass near hot springs, 31.vii.1974, *J. & F. Murphy*, 3821, (BMNH). **Mozambique:** Vila Pery, Paratype ♂, x.1927, *M. P. Lesne*, (MHN, Geneva).

REMARKS. Matching males with females has been difficult, for example, there were initially three unaccompanied females any of which could belong with *C. boveyi*, known only from the male. The female selected has marginally the most unusual epigyne and in this sense agrees with *boveyi* which has the most unusual palp. The geographical distribution also marginally favours the female selected, but it nevertheless remains to be seen if the match is correct.

### *Cyrba nigrimana* Simon

(Fig. 12A–G)

*Cyrba nigrimanus* Simon, 1900: 389, ♀. LECTOTYPE ♀. PARALECTOTYPES 3♀ (here designated) S. Africa (MNHN, Paris & MCZ, Harvard) [examined]. Simon, 1901: 447, 448.

*C. nigrimana*: Roewer, 1954: 985. Bonnet, 1956: 1339. Prószyński, 1971: 396. Cutler, 1976: 131.

REMARKS. Four females and one juvenile labelled '20124 *Cyrba nigrimanus* E.S. Pretoria!' in the collections of MNHN, Paris are undoubtedly syntypes and agree with another female in the collections of MCZ, Harvard. The later specimen labelled '83 *Cyrba nigrimana* E. Simon, Transvaal, 4123, from E. Simon' is almost certainly part of the type series and is accordingly included amongst the paralectotype designations.

DIAGNOSIS. *C. nigrimana* known only from females is easily recognised by the darkened lateral slits of the epigynal area (Fig. 12E, arrowed).

MALE. Unknown.

FEMALE LECTOTYPE, in fair condition. *Carapace* (Fig. 12A, G): orange-brown with paler eye region; thinly clothed in whitish hairs. *Eyes*: laterals with black surrounds; fringed by whitish hairs. *Clypeus*: clothed in long whitish hairs. *Chelicerae*: pale yellow-brown with scattered fine hairs; pro- and retromargins with three teeth. *Maxillae*: pale yellow with whitish inner distal margins. *Labium*: light brownish tipped whitish yellow. *Sternum* (Fig. 12C): pale yellow-brown; shiny with scattered long pale hairs. *Coxae*: pale yellow-brown; shiny. *Abdomen*: whitish yellow mottled grey black; thinly clothed in long pale yellowish hairs; spinnerets whitish yellow suffused black. *Legs*: moderately long and slender, anterior pairs slightly more robust; generally pale yellow-brown except for legs I which have tarsi, metatarsi and tibiae lightly tinged black; spines moderately strong and numerous. Spination of legs I: metatarsi v 2-0-0; tibiae v 2-2-2; femora p 0-0-1, d 0-2-2. *Palp* whitish yellow with tarsi and tibiae suffused black. *Epigyne* (Fig. 12D–F): relatively large, thinly covered by fine hairs.

*Dimensions* (mm): total length 4.8; carapace length 2.04, breadth 1.52, height 1.04; abdomen length 2.88; eyes, anterior row 1.52, middle row 1.29, posterior row 1.44; quadrangle length 1.0 (49% of carapace length). *Ratios*: AM : AL : PM : PL :: 12 : 7 : 2 : 6.6; AL–PM–PL :: 8–6; AM : CL :: 12 : 2.

VARIATION. ♀ total length varies from 4.8 to 5.44 mm, carapace length 2.04–2.14 mm (four specimens).

In preserved specimens the abdominal mottling is sometimes bleached and hardly evident.

DISTRIBUTION. South Africa.

MATERIAL EXAMINED. **South Africa**: ♀ lectotype, 3♀ paralectotypes; Transvaal, Pretoria and Makapan, *E. Simon*, (MNHN, Paris, 20124); ♀ paralectotype, Transvaal, *E. Simon*, (MCZ, Harvard).

### *Cyrba lineata* sp. n.

(Fig. 13A–H)

DIAGNOSIS. *C. lineata* can be recognised by the acute lobes of the caudal ledge and presence of large lateral pouches (Fig. 13G, H, arrowed).

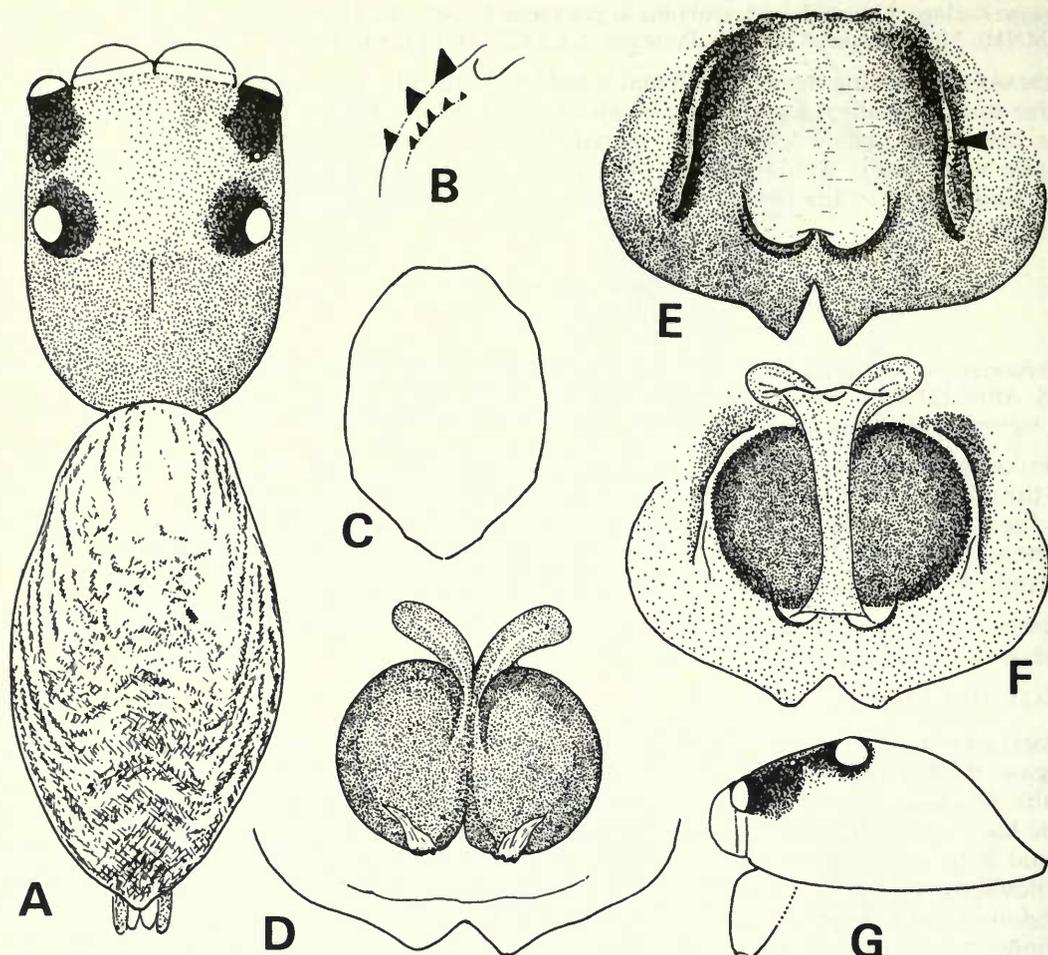


Fig. 12 *Cyrba nigrimana* Simon, lectotype ♀: A, dorsal; G, carapace, lateral. Paralectotype ♀: B, cheliceral teeth; C, sternum; D, vulva, inner view; E, epigyne; F, vulva, outer view.

MALE. Unknown.

FEMALE HOLOTYPE, in fair condition. *Carapace* (Fig. 13E): pale yellow-brown lightly tinged black in eye region; dorsum rubbed, sides clothed in greyish hairs. *Eyes*: laterals with black surrounds; fringed by pale dull amber and whitish hairs. *Clypeus*: clothed in greyish and light amber hairs, with scattered bristles and scanty marginal fringe of long whitish hairs below anterior median eyes, becoming shorter below anterior laterals and forming a scanty marginal band which extends posteriorly to about level of coxae I. *Chelicerae*: yellow-brown with sooty markings; shiny, thinly clothed in long brownish hairs; promargin with three teeth, retromargin with four. *Maxillae and labium*: pale yellow-brown with lighter tips and scattered long brownish hairs. *Sternum* (Fig. 13D) and *coxae*: pale yellow-brown faintly tinged with some black; thinly clothed in stiff blackish hairs and indistinct pale lanceolate ones. *Abdomen*: covered in short recumbent black and pale amber hairs with a thin longitudinal pale yellowish stripe and vague chevrons; venter greyish amber with brown-black hairs, bordered laterally by vague paler bands converging towards spinnerets and terminating in whitish yellow spots on either side of tracheal slit; mytiliform field greyish, fairly distinct; spinnerets yellow-brown lightly tinged black with brownish hairs. *Legs*: legs I yellow-brown

suffused with some black especially on metatarsi and tibiae, clothed in greyish and black hairs with whitish ones on apices of metatarsi; other legs similar to legs I except metatarsi and tibiae paler and no darker than other segments; spines strong, most numerous on posterior legs. Spination of legs I: metatarsi v 2-0-0; tibiae v 2-2-2; femora d 0-2-2, p 0-0-1. *Palp*: femur and patella pale yellow-brown lightly suffused with some black, other segments darker and more heavily clothed in black and pale yellowish hairs. *Epigyne* (Fig. 13F): looped element of introductory ducts relatively short.

*Dimensions* (mm): total length c. 5.9 (pedicel stretched); carapace length 2.68, breadth 2.0, height 1.4; abdomen length 3.2; eyes, anterior row 1.96, middle row 1.76, posterior row 1.92; quadrangle length 1.28 (47% of carapace length). *Ratios*: AM:AL:PM:PL:: 15:8.5:1.5:8.5; AL-PM-PL:: 9.5-8; AM:CL:: 15:3.

**VARIATION.** Another ♀ measures 5.9 mm total length, 2.64 mm carapace length. In this specimen (Fig. 13A) the rubbed abdomen is whitish yellow mottled black with vague chevrons

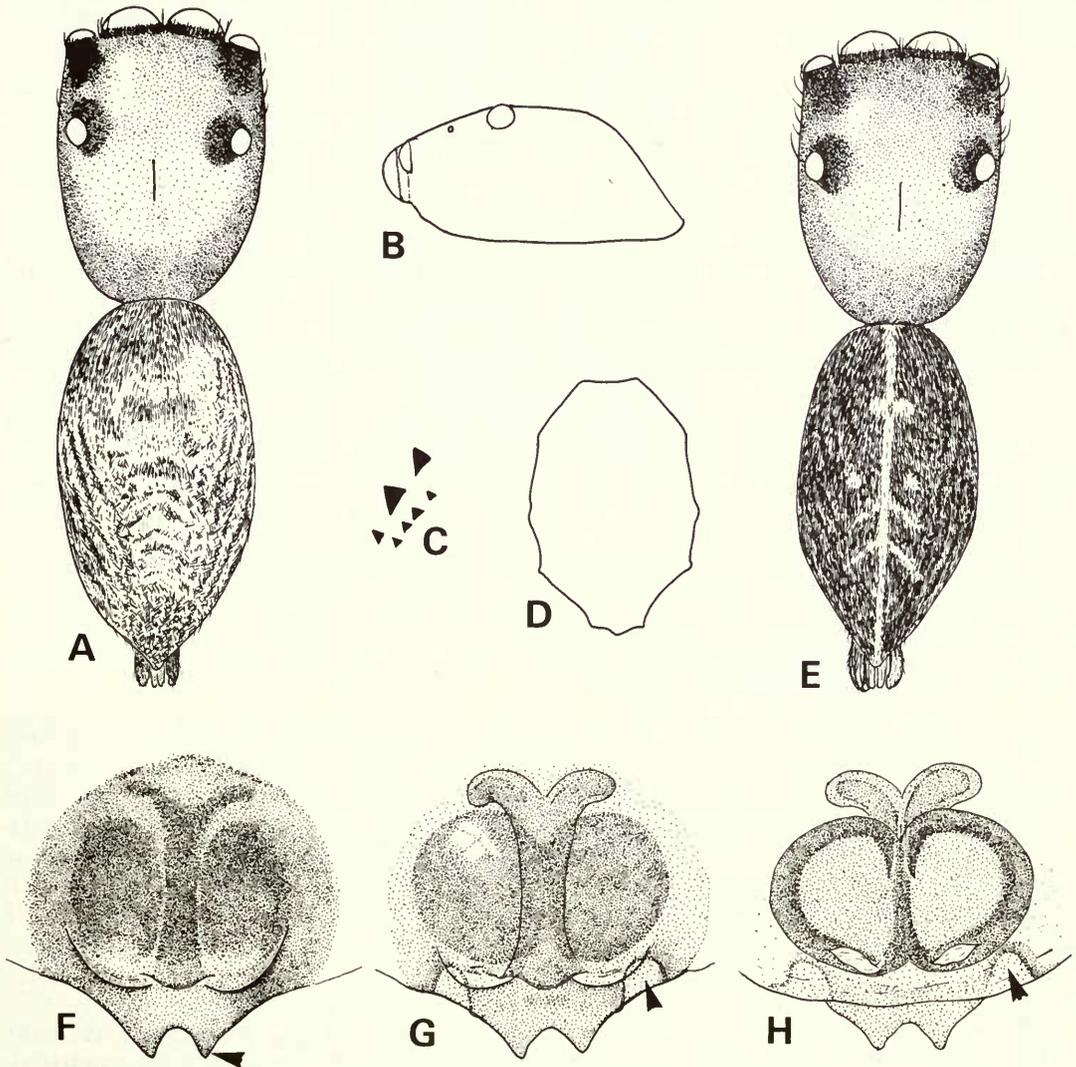


Fig. 13 *Cyrba lineata* sp. n., holotype ♀: E, dorsal; F, epigyne. Paratype ♀: A, dorsal; B, carapace, lateral; C, cheliceral teeth; D, sternum; G, vulva, outer view; H, vulva, inner view.

and scattered dark amber hairs; the dorsal stripe is not evident and the mytiliform field is obscure.

DISTRIBUTION. South Africa.

MATERIAL EXAMINED. **South Africa:** Natal, Pinetown (Durban), holotype ♀, iii.1979, *M. E. Baddeley*, (MRAC, Tervuren. 152.164); Parfuri, Kruger National Park, paratype ♀, *H. Braack*, (BMNH. 1983. 6.24.2).

### Species Incertae Sedis

#### *Cyrba armillata* Peckham & Peckham

(Fig. 14A-I)

*Cyrba armillata* Peckham & Peckham, 1907: 606, ♀. Holotype ♀, Borneo (MCZ, Harvard) [examined].  
Roewer, 1954: 985. Bonnet, 1956: 1339. Prószyński, 1971: 396.

REMARKS. The affinities of this species are uncertain, it clearly does not belong in *Cyrba* the genitalia being reminiscent of some species presently classified in euophryine groups.

FEMALE from Sarawak, in good condition. *Carapace* (Fig. 14A, C): chestnut brown with orange-brown cephalic plate and yellow-brown patch on thoracic part; clothed in shining white and scattered fine black hairs on cephalic plate with pale yellowish hairs on thoracic patch; sides largely bare except for scattered pale amber hairs. *Eyes*: with black surrounds; anteriors recurved in dorsal view, subcontiguous with apices slightly recurved in frontal; fringed by whitish and pale amber hairs. *Clypeus*: orange-brown edged by whitish hairs. *Chelicerae*: moderately robust, parallel and vertical; facies finely rugose with vague furrows; orange-brown; thinly clothed in long fine hairs; promargin with two teeth, retromargin with six. *Maxillae*: similar to ♂; orange-brown. *Labium*: similar to ♂; dark orange-brown. *Sternum* (Fig. 14D): light amber with scattered pale brown hairs. *Coxae*: yellow-brown. *Abdomen*: pale yellow-brown with sooty markings; thinly clothed in short and long greyish hairs with scattered minute shining setae. *Legs*: moderately long and slender, first pair darkest and slightly stouter; pale yellow to yellow-brown with obscure annuli on metatarsi, tibiae and apices of femora; spines numerous and moderately strong. Spination of legs I: metatarsi v 2-0-0, p 0-1-2, r 0-1-2; tibiae v 2-2-2, r 1-1-0, p 1-2-0; patellae p 0-1-0, r 0-1-0; femora d 0-2-4. *Palp*: yellow-brown with fringe of grey-black hairs on inside of tarsi. *Epigyne* (Fig. 14F): copulatory openings lead into dark looped introductory ducts.

*Dimensions* (mm): total length 4.8; carapace length 2.08, breadth 1.76, height 1.32; abdomen length 2.48; eyes, anterior row 1.72, middle row 1.5, posterior row 1.64; quadrangle length 1.16 (55% of carapace length). *Ratios*: AM : AL : PM : PL :: 14.5 : 8 : 1.3 : 7.5; AL-PM-PL :: 9-5.5; AM : CL :: 14.5 : 5.

MALE (formerly undescribed) from Sarawak, in good condition. Habitus similar to ♀ except for the following. *Carapace*: thoracic patch less clearly defined. *Clypeus*: thinly fringed by marginal and submarginal lines of whitish hairs. *Chelicerae*: more coarsely rugose; dark orange-brown, shiny. *Maxillae and labium* (Fig. 14H): dark orange-brown. *Sternum*: orange-brown with scattered grey-black hairs. *Coxae*: first pair orange-brown, others yellow-brown. *Abdomen*: as ♀, but short black hairs lacking and pattern of sooty markings slightly more pronounced. *Legs*: legs I dark orange-brown with yellow-brown tarsi; II similar to I, but coxae yellow-brown; III and IV as II, but basal half of femora yellow-brown. Spination of legs I: metatarsi v 2-0-0, p 0-1-2, d 1-0-0, r 0-1-2; tibiae v 2-2-2, p 0-1-0, d 2-2-1, r 1-2-0; patellae p 0-1-0, r 0-1-0; femora d 0-2-4. *Palp* (Fig. 14G, I).

*Dimensions* (mm): total length 4.64; carapace length 2.24, breadth 1.93, height 1.48; abdomen length 2.2; eyes, anterior row 1.88, middle row 1.64, posterior row 1.76; quadrangle length 1.24 (55% of carapace length). *Ratios*: AM : AL : PM : PL :: 15 : 8.5 : 1.5 : 8; AL-PM-PL :: 10-6; AM : CL :: 15 : 5.

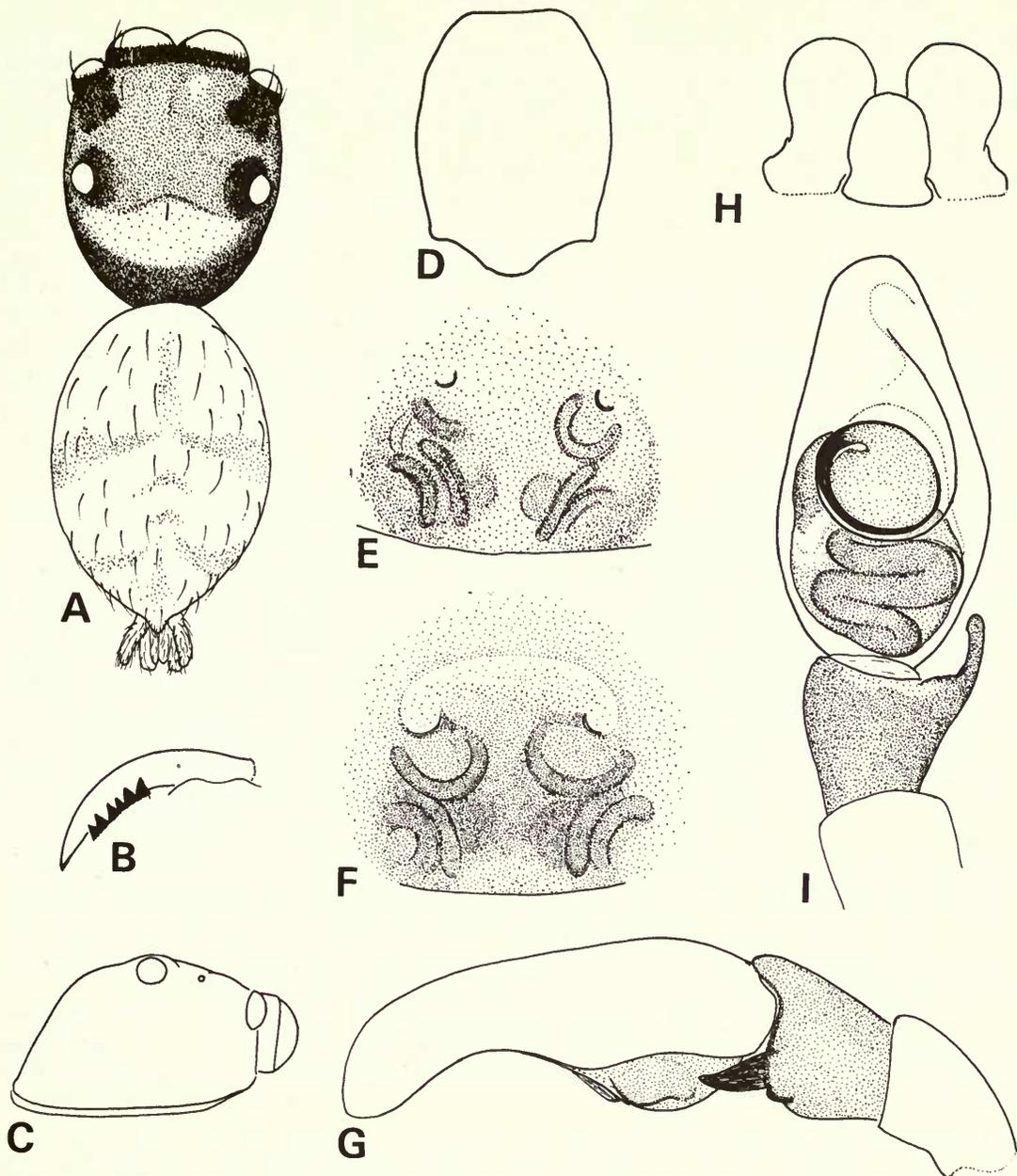


Fig. 14 *Cyrba armillata* Peckham & Peckham. ♀: A, dorsal; B, retromarginal teeth; C, carapace, lateral; D, sternum; E, epigyne of holotype; F, epigyne of Sarawak specimen. ♂: G, palp, retro-lateral; H, maxillae and labium; I, palp, ventral.

VARIATION. Holotype ♀ measures c. 4.6 mm total length, 2.04 mm carapace length; epigyne (Fig. 14E).

The general habitus of the holotype and female described above are similar and the differences between the epigynes are considered to be of no significance, as they fall within the bounds of variation which might reasonably be expected to occur in this type of structure.

DISTRIBUTION. Borneo.

MATERIAL EXAMINED. **Borneo**: holotype ♀, data given in synonymy; Sarawak, Gunung Mulu National Park, on shrubs environs of base camp, 1 ♀, 1 ♂, 6.vii.1978, *F. R. Wanless*, Royal Geographical Society/Sarawak Government Expedition, (BMNH).

*Cyrba dotata* Peckham & Peckham

(Fig. 15A–E)

*Cyrba dotata* Peckham & Peckham, 1903: 185, ♀. Holotype ♀, South Africa, (MCZ, Harvard) [examined]. Roewer, 1954: 985. Bonnet, 1956: 1339. Prószyński, 1971: 396. Cutler, 1976: 131.

REMARKS. This taxon whose affinities are unknown does not belong in *Cyrba*. However, it should not be too difficult to detect related species for the presence of numerous cheliceral teeth (Fig. 15D), lack of dorsal and lateral spines on tibiae of legs I and epigynal features (Fig. 15E) are together fairly distinctive characters.

MALE. Unknown.

FEMALE HOLOTYPE, in poor condition. *Carapace* (Fig. 15A, B): dark orange-brown especially in eye region with vague blackish markings and central longitudinal yellow-brown band on thoracic part; fovea moderately long, apex just behind posterior lateral eyes. *Eyes*: with blackish surrounds; anteriors weakly recurved in dorsal view, subcontiguous with apices more or less level in frontal; sparsely fringed by whitish and long brown hairs. *Clypeus*: edged in whitish hairs. *Chelicerae*: moderately stout, slightly inclined anteriorly; dark orange-brown; fang moderately robust and evenly curved; promargin with four teeth, retromargin with eight. *Maxillae*: moderately long, more or less parallel with rounded outer distal margins; amber with inner distal margins paler. *Labium*: slightly longer than broad; pale amber tipped whitish yellow. *Coxae*: generally amber, first pair slightly darker. *Sternum* (Fig. 15C): pale amber with darker margins. *Abdomen*: detached and rubbed; yellow-brown with darker markings and paler spots (original pattern possibly distinctive); spinnerets moderately long, subequal in length; former position of colulus indicated by scanty patch of hairs between spinnerets and tracheal slit; tracheal slit indistinct, situated near base of spinnerets. *Legs*: moderately long, anterior pairs a little more robust than slender posteriors; generally amber with some black on underside of femora I and II; spines moderately strong and numerous. Spination of legs I: metatarsi v 2-0-2; tibiae v 2-2-2; femora d 0-1-3. *Epigyne* (Fig. 15E): small; the spermathecae will possibly be less distinct in fresh specimens.

*Dimensions* (mm): total length *c.* 6.2; carapace length 2.52, breadth 2.04, height 1.3; abdomen length 3.68; eyes, anterior row 1.8, middle row 1.64, posterior row 1.72; quadrangle length 1.16 (46% of carapace length). *Ratios*: AM : AL : PM : PL :: 14 : 8 : 1.5 : 7.5; AL-PM-PL :: 9-7.5; AM : CL :: 14 : 2.

DISTRIBUTION. South Africa.

MATERIAL EXAMINED. **South Africa**: holotype ♀, Newlands, Table Mtn. Cape peninsular, *W. F. Purcell*, (MCZ, Harvard).

*Cyrba szechenyii* Karsch in Lendl

*Cyrba szechenyii* Karsch in Lendl, 1897: 702, ♀, Hong Kong (? in TM, Budapest) [not examined]. Karsch in Lendl, 1898: 560. Roewer, 1954: 985. Bonnet, 1956: 1339.

The type of this species is believed to be in the Hungarian National Museum, Budapest, but cannot be found. Fortunately the original description is accompanied by figures, epigyne and whole animal in dorsal aspect, which show that *szechenyii* does not belong in *Cyrba*. The species will probably be rediscovered when the Hong Kong salticid fauna is well known.

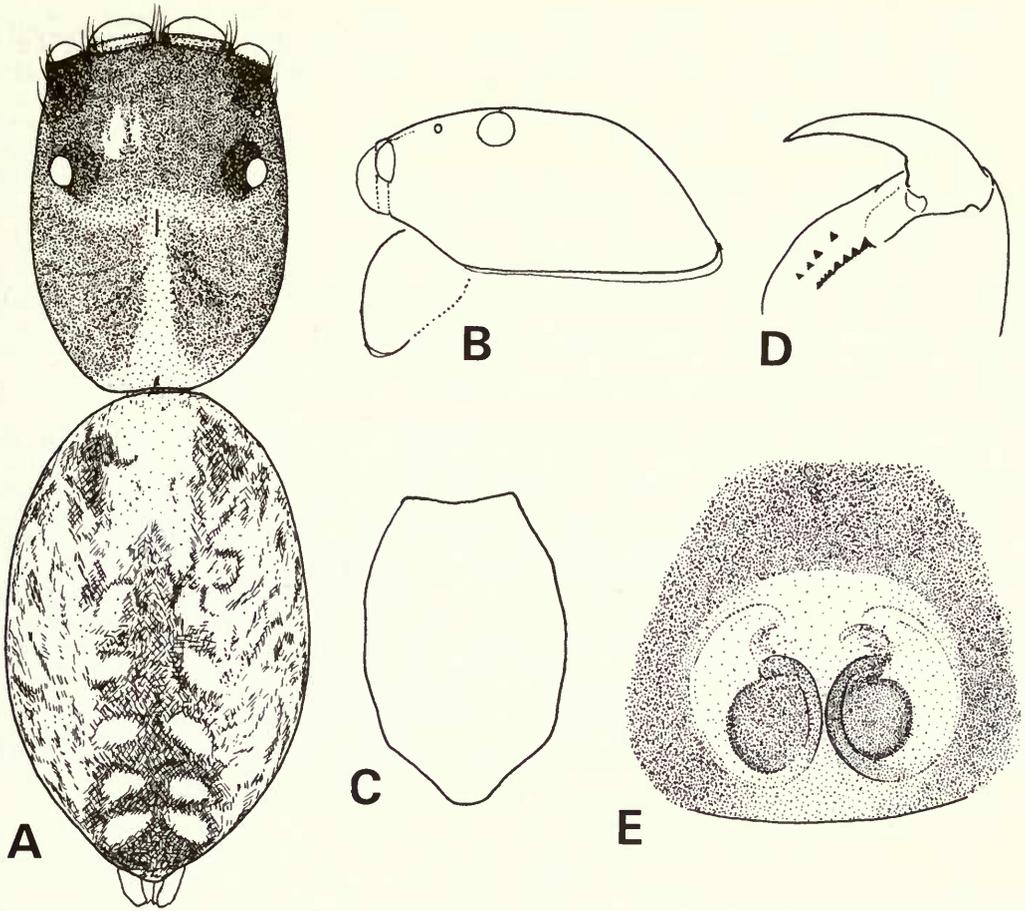


Fig. 15 *Cyrba dotata* Peckham & Peckham, holotype ♀: A, dorsal; B, carapace, lateral; C, sternum; D, chelicera; E, epigyne.

### *Cyrba bidentata* Strand

*Cyrba bidentata* Strand, 1906: 662, ♀, Ethiopia, Ginir-Daua; 1909: 180. Roewer, 1954: 984. Bonnet, 1956: 1339.

The type of this species cannot be found and may have been destroyed during the 1939–45 war. To judge from the original description, especially of the epigyne, it seems to have been correctly placed in *Cyrba*, but in the absence of the type it cannot be positively identified.

### Remark

*Cyrba picturata* Karsh in Lendl, from Hong Kong is a junior synonym of *Hasarius adansonii* (Savigny & Audouin), see Prószyński (in press).

### Taxonomic summary

- Two new species are described:  
*Cyrba legendrei* sp. n., and *Cyrba lineata* sp. n.

## 2. Three species are newly synonymised:

*Cyrba micans* Simon, *Stasippus inornatus* Thorell and *Astia maculata* (Thorell) are junior synonyms of *Cyrba ocellata* (Kroneberg) itself formerly regarded as a junior synonym of *C. algerina* (Lucas).

### Acknowledgements

I am grateful to Mr & Mrs John Murphy, London, for allowing me to study their collection of African salticid spiders and especially Frances Murphy who kindly supplied photographs for Figs 1–2.

I am also indebted to Dr W. Thelma T. P. Gunawardane and Ms H. Samarajeewa, Department of National Museums, Colombo, Sri Lanka (DNM, Colombo) and Professor R. Legendre, Université des Sciences et Techniques du Languedoc, Montpellier, France, for their kind hospitality and facilities extended to the author during visits to Sri Lanka (October–November 1982) and France (February 1983).

Other colleagues from various institutions kindly helped by making the types and other material available for study or in other ways, in particular the following: Dr B. Hauser, Muséum d'Histoire Naturelle, Genève, Switzerland (MHN, Geneva); M. M. Hubert, Muséum National d'Histoire Naturelle, Paris, France (MNHN, Paris); Dr R. R. Jackson, University of Canterbury, Christchurch, New Zealand; Dr R. Jocqué, Musée Royal de l'Afrique Centrale, Tervuren, Belgium (MRAC, Tervuren); Dr T. Kronstedt, Naturhistoriska Riksmuseet, Stockholm (NR, Stockholm); Professor H. W. Levi, Museum of Comparative Zoology, Harvard, Cambridge, U.S.A. (MCZ, Harvard); Dr S. Mahunka, Természettudományi Múzeum, Budapest, Hungary (TM, Budapest); Ms S. Mascherini, Museo Zoologico de La Specola, Firenze, Italy (MZS, Firenze); Dr A. H. S. Onions, Commonwealth Mycological Institute, Kew; Dr J. Prószyński, Zakład Zoologii, Siedlce, Poland.

Finally I would like to thank Mr D. Macfarlane, Commonwealth Institute of Entomology, London, for reading the manuscript and my colleagues in the Photographic and Electron Microscopy units for help with SEM photographs and especially D. Claugher for drawing my attention to the setal openings.

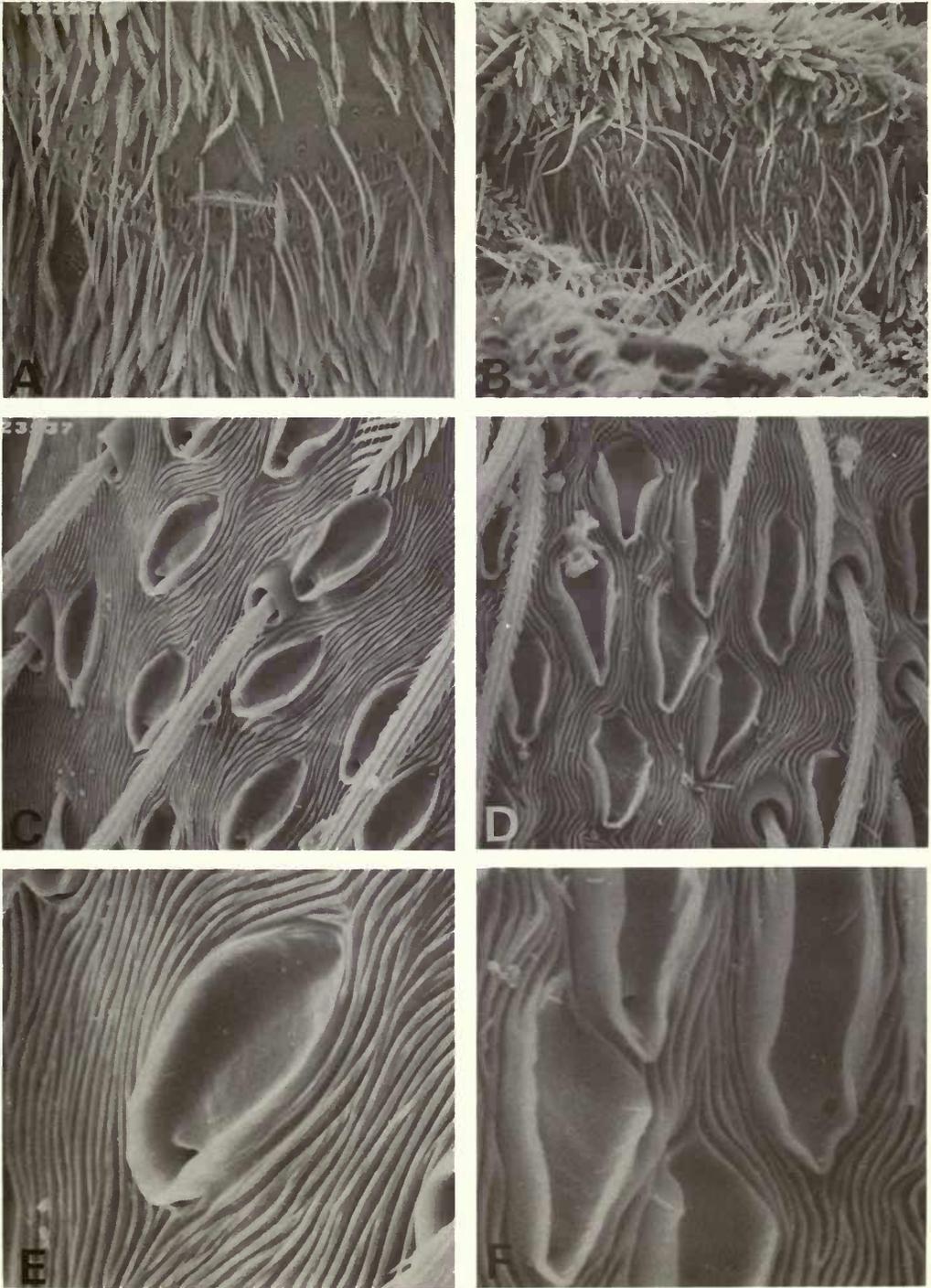
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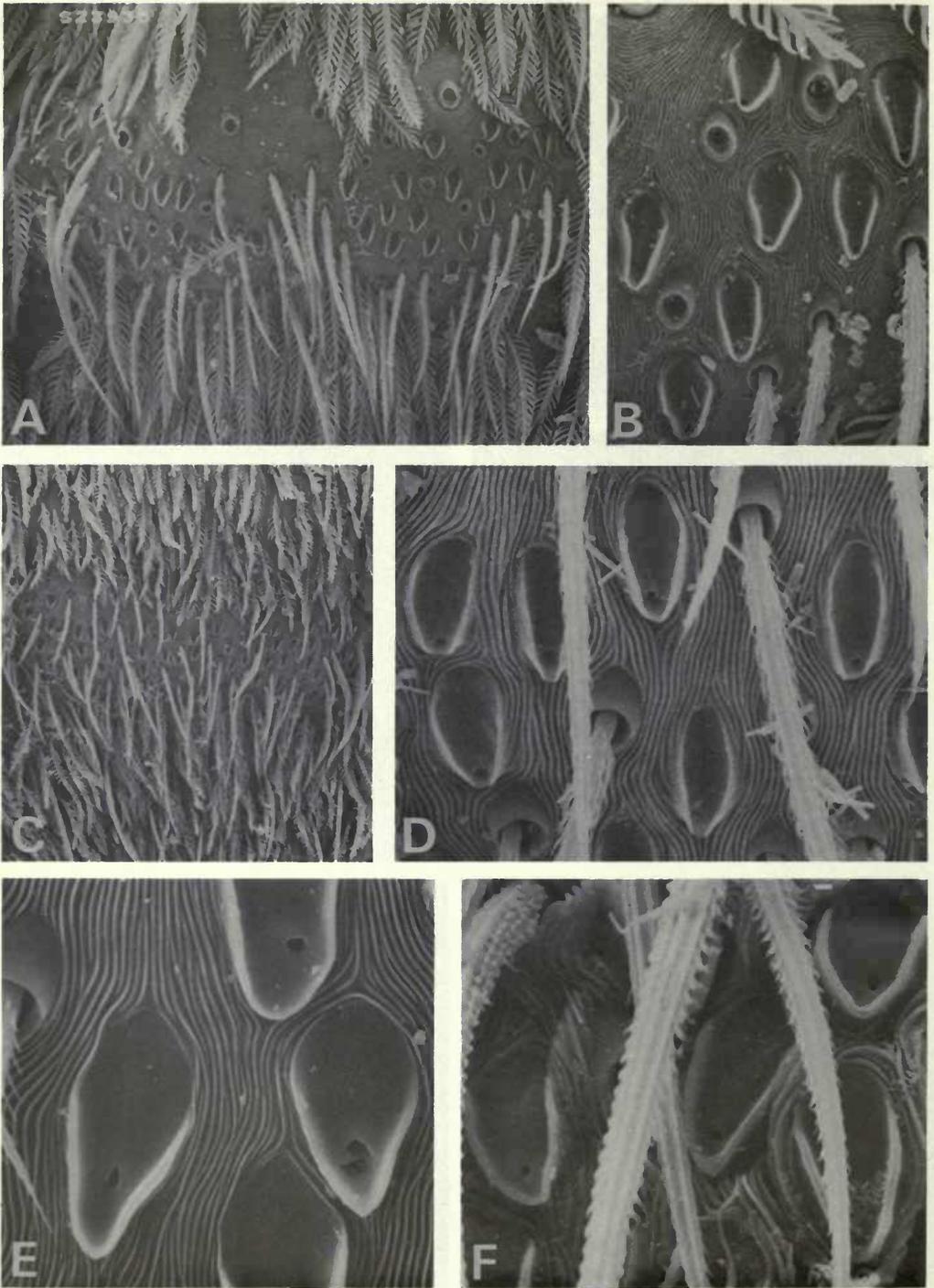
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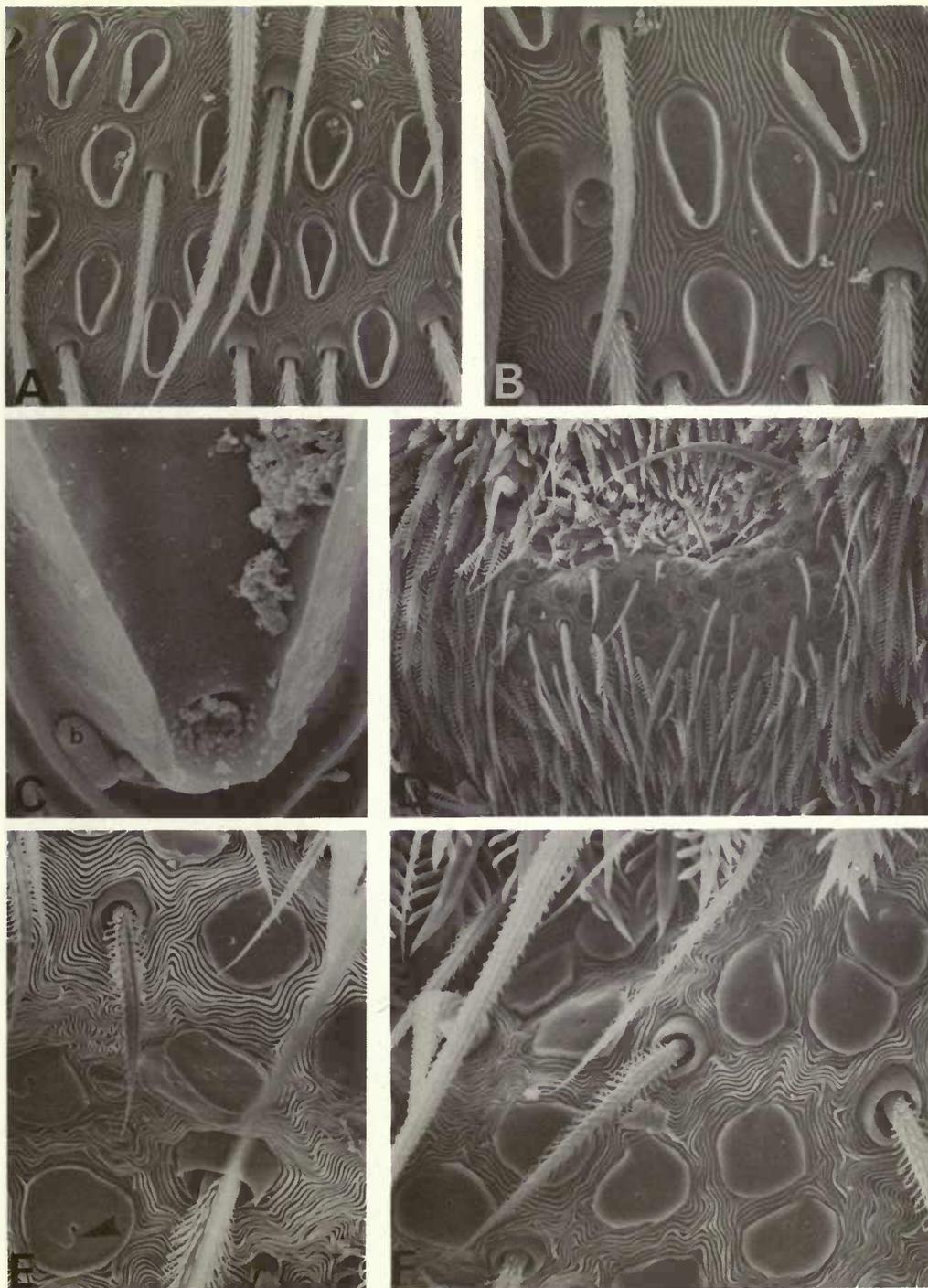
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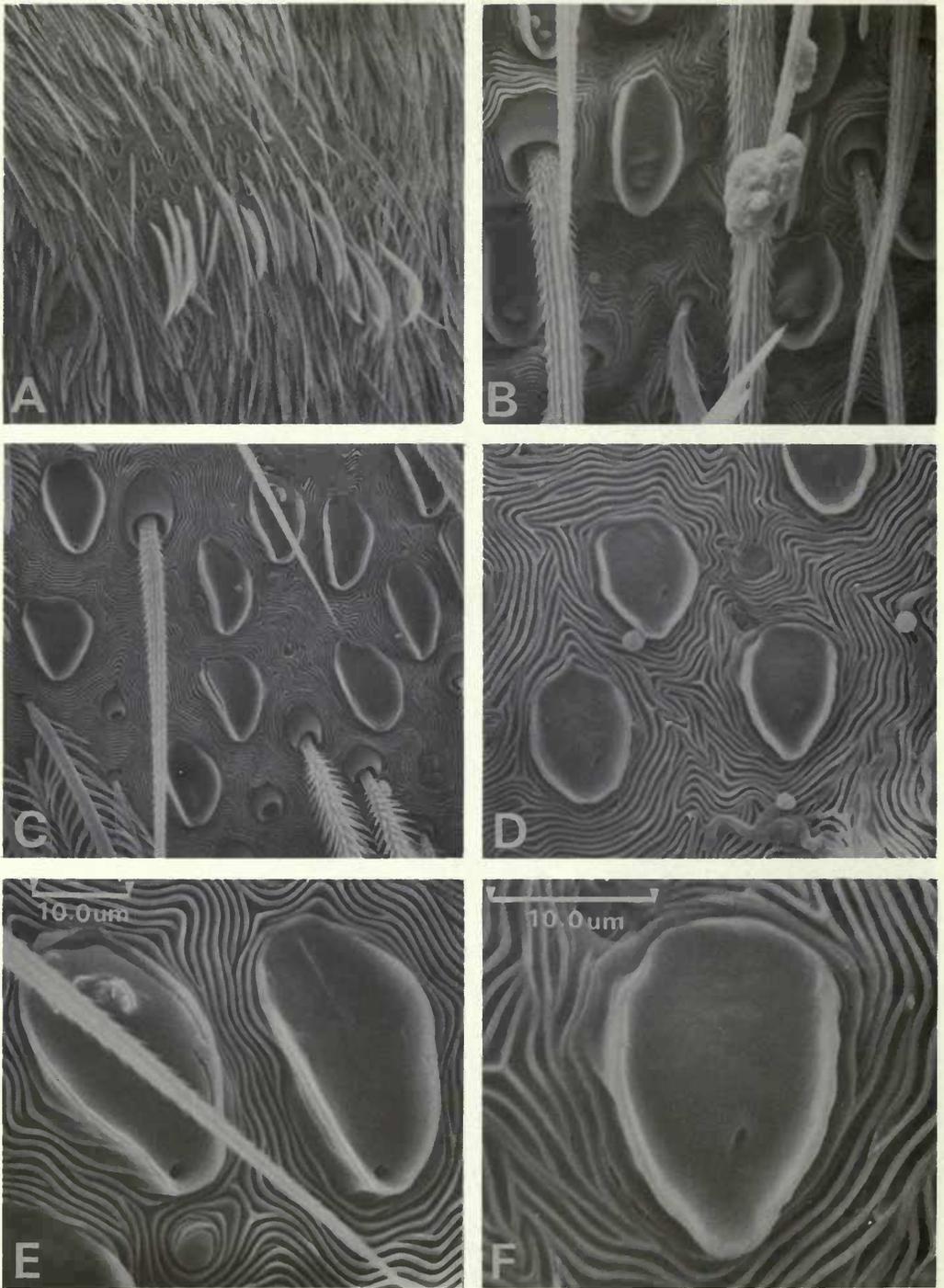
**Fig. 16** *Cyrba algerina* (Lucas). ♂: A, mytiliform field,  $\times 110$ ; C, E, mytiliform organs,  $\times 830$ ,  $\times 2100$ , ♀: B, mytiliform field,  $\times 140$ ; D, F, mytiliform organs,  $\times 950$ ,  $\times 2240$ .



**Fig. 17** (A–D) *Cyrba algerina* (Lucas). Subadult ♂: A, mytiliform field,  $\times 230$ ; B, mytiliform organs  $\times 650$ . Subadult ♀: C, mytiliform field,  $\times 140$ ; D, mytiliform organs,  $\times 1060$ . (E, F) *Cyrba bimaculata* Simon, E, ♂, mytiliform organs,  $\times 1300$ ; F, ♀, mytiliform organs,  $\times 1500$ .



**Fig. 18** (A–C) *Cyrba ocellata* Kroneberg, ♂, mytiliform organs, A,  $\times 580$ ; B,  $\times 840$ ; C, showing detritus?  $\times 7000$ . (D–F) *Gelotia syringopalpis* Wanless, ♂; D, mytiliform field,  $\times 180$ ; E, mytiliform organs,  $\times 1050$ , note sinuous gully arrowed; F, mytiliform organs  $\times 860$ . Abbreviation: b, bacterium.



**Fig. 19** (A–C, E) *Portia labiata* Thorell. ♂: A, mytiliform field,  $\times 52$ ; C, E, mytiliform organs,  $\times 460$ ,  $\times 1400$ ; ♀: B, mytiliform organs,  $\times 760$ . (D, F) *Portia fimbriata* Doleschall, ♀, mytiliform organs,  $\times 980$ ;  $\times 2400$ .

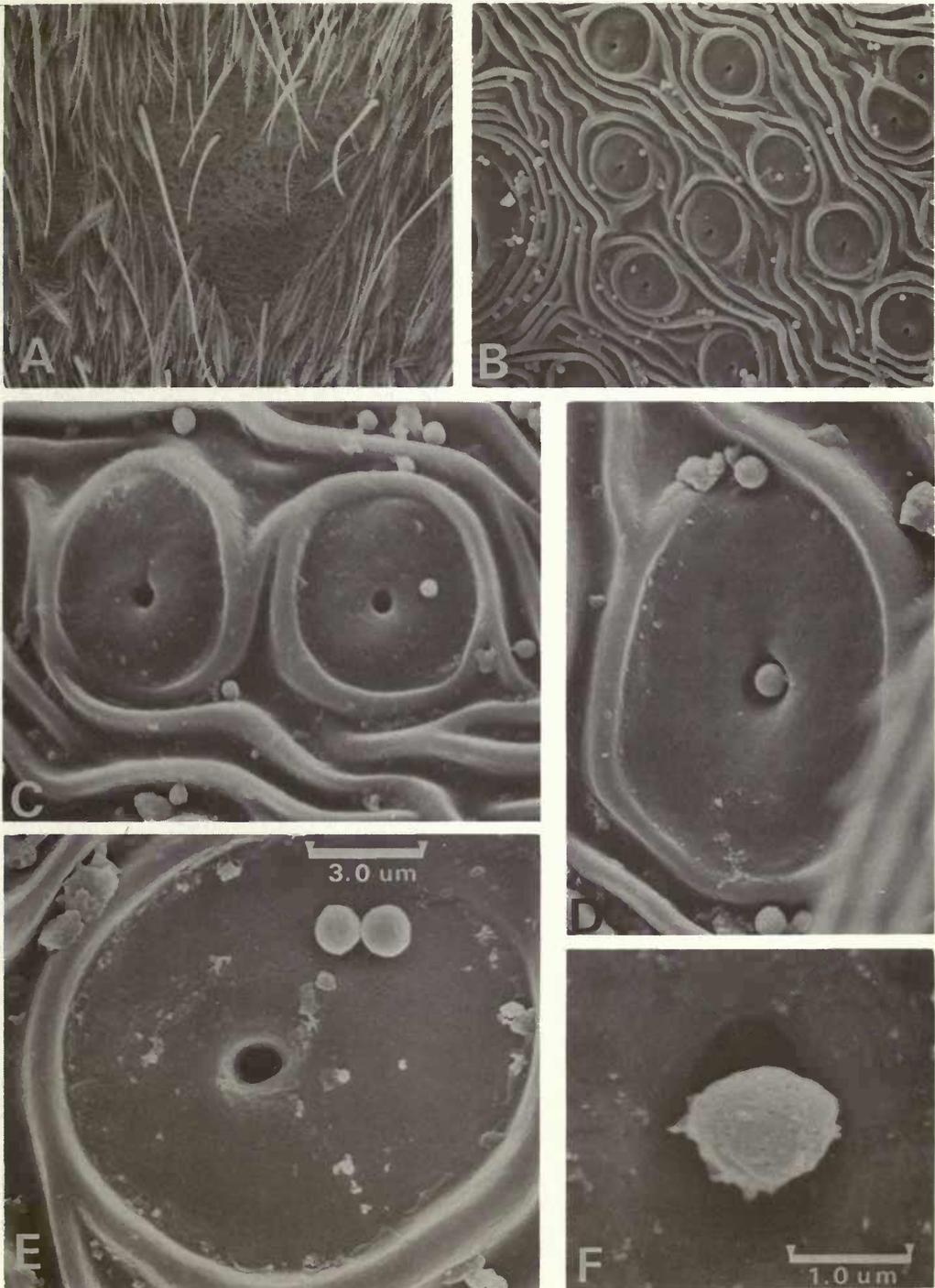
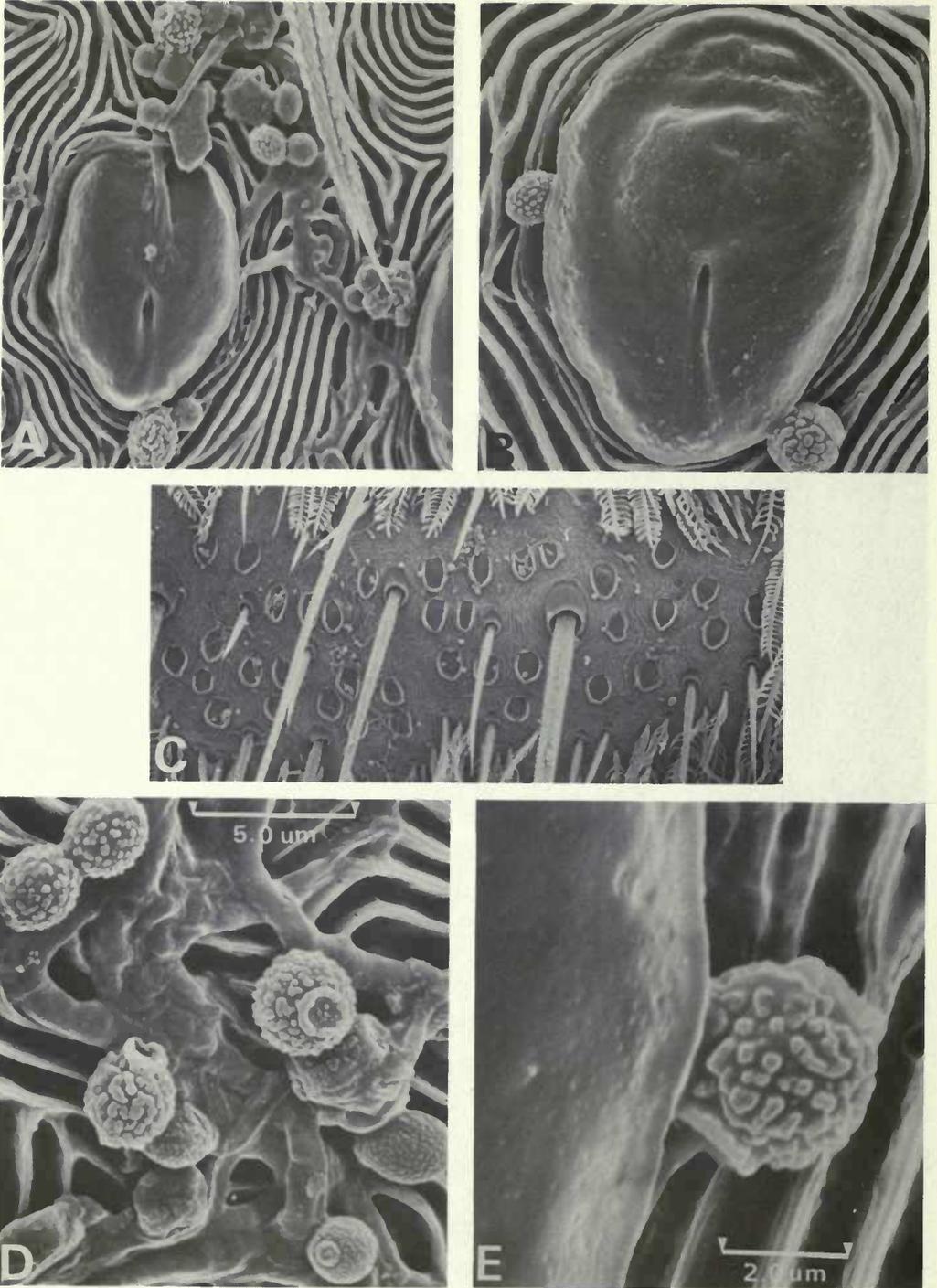
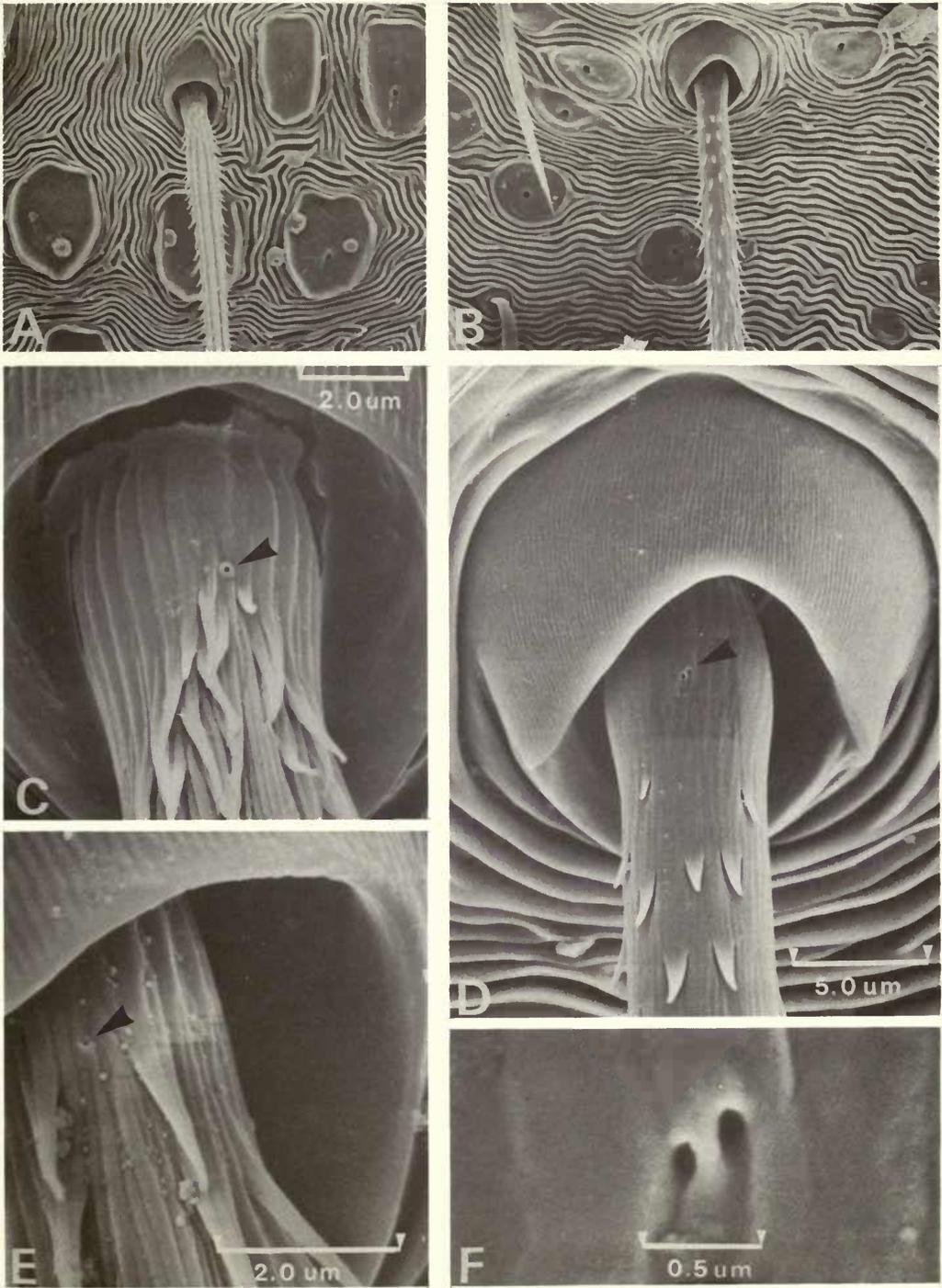


Fig. 20 (A-F) *Holcolaetis vidua* Lessert, ♀: A, pustuliform field,  $\times 70$ ; B-E, pustuliform organs with spheres, B,  $\times 720$ ; C,  $\times 2400$ ; D,  $\times 3900$ ; E,  $\times 5500$ , F, distorted sphere,  $\times 17000$ .



**Fig. 21** *Portia fimbriata* Doleschall, ♀: A, B, mytiliform organs and fungal conidia,  $\times 1900$ ;  $\times 3100$ ; C, mytiliform field with scattered conidia,  $\times 230$ ; D, conidia and mycelium,  $\times 4660$ ; E, conidium alongside a mytiliform organ,  $\times 9900$ .



**Fig. 22** (A, C) *Portia fimbriata* Doleschall, ♂: A, microseta in mytiliform field,  $\times 880$ ; C, base of microseta showing pore,  $\times 7800$ . (B, D, F) *Holcolaetis vidua* Lessert, juvenile ♀: B, microseta in pustuliform field,  $\times 900$ ; D, F, base of microseta showing pores,  $\times 4000$ ;  $\times 35000$ ; E, *Cyrrba bimaculata* Simon, ♂, base of microseta showing pore,  $\times 13100$ .