*Phelsuma* **14**; 49-89

# Theridiid or cobweb spiders of the granitic Seychelles islands (Araneae, Theridiidae)

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*Abstract.* - This paper describes 8 new genera, namely *Argyrodella* (type species *Argyrodes pusillus* Saaristo, 1978), *Bardala* (type species *Achearanea labarda* Roberts, 1982), *Nanume* (type species *Theridion naneum* Roberts, 1983), *Robertia* (type species *Theridion braueri* (Simon, 1898), *Selimus* (type species *Theridion placens* Blackwall, 1877), *Sesato* (type species *Sesato setosa* n. sp.), *Spinembolia* (type species *Theridion clabnum* Roberts, 1978), and *Stoda* (type species *Theridion libudum* Roberts, 1978) and one new species (*Sesato setosa* n. sp.). The following new combinations are also presented: *Phycosoma spundana* (Roberts, 1978) **n. comb.**, *Argyrodella pusillus* (Saaristo, 1978) **n. comb.,** *Rhomphaea recurvatus* (Saaristo, 1978) **n. comb.**, *Rhomphaea barycephalus* (Roberts, 1983) **n. comb.**, *Bardala labarda* (Roberts, 1982) **n. comb.**, *Moneta coercervus* (Roberts, 1978) **n. comb.**, *Nanume naneum* (Roberts, 1983) **n. comb.**, *Parasteatoda mundula* (L. Koch, 1872) **n. comb.**, *Robertia braueri* (Simon, 1898). **n. comb.**, Selimus *placens* (Blackwall, 1877) **n. comb.**, *Sesato setosa* **n. gen, n. sp.**, *Spinembolia* clabnum (Roberts, 1978) **n. comb.**, and *Stoda libudum* (Roberts, 1978) **n. comb.**. Also the opposite sex of four species are described for the first time, namely females of *Phycosoma spundana* (Roberts, 1978) and *P. menustya* (Roberts, 1983) and males of *Spinembolia clabnum* (Roberts, 1978) and *Stoda libudum* (Roberts, 1978). Finally the morphology and terminology of the male and female secondary genital organs are discussed.

*Key words.* - copulatory organs, morphology, Seychelles, spiders, Theridiidae.

## Introduction

Theridiids or comb-footed spiders are very variable in general apperance often with considerable sexual dimorphism. Size is also variable, from very small to fairly large species. They can usually be recognized by the following characters: 1) legs bearing only a few spines (one to two in patella and tibia I at least); 2) tarsus IV with a row of serrate bristles, the so-called tarsal comb (absent e.g. in *Argyrodes*); 3) colulus usually absent or repleced with two setae (fleshy colulus e.g. in *Argyrodes*); 4) usually no cheliceral teeth (or 1-3 on promargin and rarely 1-3 on retromargin); 5) labium with a seam towards the sternum, never swollen (= rebordered) distally; 6) height of clypeus, at most, equal to the diameter of AMEs. Numerous species a have very conspicous apparatus on the dorsal side of their body for sound production. It is a washboard-like

dorsal stridulatory organ; the picks are formed by small hairs bearing chitinized dents on the anterodorsal part of abdomen while the stridulating files of the posterior part of carapace are formed by transverse rows of thin ridges on both sides of the median line.

The Theridiidae is a large family comprising 86 genera and 2227 species (Platnick 2006). In the granitic Seychelles theridiids are represented by 19 genera and 26 species (Saaristo 1978, Roberts 1978 & 1983, and this paper). In my earlier paper (Saaristo 1978) I already presented some disagreements with the then current use of delimiting theridiid genera based on the listing of valid genera by Levi & Levi (1962) in the same lines as previously used by Archer (1946, 1950). At present the taxonomy of Theridiidae seems to be undergoing considerable modifications on the generic level and numerous genera placed in synonymy by Levi & Levi (1962) have been revalided, especially by Wunderlich (1987, 1995), Okuma (1994), Yoshida (1991, 2001a, b, 2002, 2003) and Agnarsson (2004). Also several new genera have been created. The actions of the above mention authors seems to me to be on correct lines. In this paper some new genera are also created based especially on the information derived from the secondary genital organs.

## Material and methods

Specimens were examined under a Leitz stereomicroscope and measured under a Wild M5 stereomicroscope. For examination of genital structures right palps of males were detached from the spider body and placed on a cotton bed in a small bowl filled with 75% alcohol. In a few cases they were cleared by KOH solution to study the inner structures. Female genital organs were mostly studied in situ. Illustrations were made under a Leitz stereomicroscope with a drawing apparatus. Male palps were drawn from left ones. All measurements are in millimeters.

The samples used for this study are kept in arachnological collection of the Zoological Museum, University of Turku, Finland (MZT). Some types and other comparative material were studied in Musée Royal de l'Afrique Centrale, Tervuren, Belgium (MRAC).

**Abbrevations**

ALI = atrial lingua
ATR = atrium
CHO = cymbial hook
CL = length of carapace
CON = conductor
CPI = cymbial pit
ECO = embolic complex
EHO = entrance holes
EMB = embolus
ETU = entranrace tubes
FTU = fertilizing tubes
SRE = seminal receptaculae
TAP = terminal apophysis
TL = total length
TOR = tarsal organ
TTA1 = theridiid tegular apophysis containing a loof of seminal duct
TTA2 = theridiid tegular apophysis devoid of seminal duct
# = male
$ = female

In Theridiidae there are primarily four different sclerites arising from the tegulum. In my earlier paper (Saaristo 1978) I thoroughly discussed the morphology of the theridiid male palp. I was able to show that in the lateral inner side of the cymbium closeto the tarsal organ on its apical side there are two kinds of special structures, viz. a hook-like extension or alternatively a pit-like depression. The first mentioned structure was already known to Levi (1961) who referred to it as paracymbium. I also emphasized that it is not homologous with the paracymbium of Araneidae and Linyphiidae. Simultaneously Wunderlich (1978) had come to the same conclusion while using this character in synonymization of the family Hadrotarsidae with Theridiidae. Later Forster *et al*. (1990) recognized my finding using the terms hooked and hooded paracymbium respectively. To my mind the use of paracymbium in this context is clearly misleading. This has apparently been noticed also by Agnarsson (2004) who used the tems cymbial hook and cymbial hood. At the present it seems best to retain in this practice. Confusion also seems to surround the structure called the median apophysis by Levi (1961). In my above mentioned paper (Saaristo 1978) I showed that that there were two kinds of median apophysis sensu Levi (1961); one of them has a small apical pit and the the ejaculatory duct makes a loop inside it while the other type has no apical pit and is devoid of the ejaculatory duct. I (Saaristo 1978) also found that the cymbial hook fits into the pit of the first mentioned type while the the apex of the second type fits into the concavity under the paracymbial hood. Due the apparent function of these structures I called them locking arm A and B. I also was of the opinion that they are not homologous. However, I now think that this was an error and that they in fact are homologous structures. Accordingly it is apparent that paracymbial hood originated from the cymbial hook as also stated by Forster *et al*. (1990). Coddington (1990) who apparently missed my paper (Saaristo 1978) noticed that Levi´s (1961) median apophysis is a novel structure within araneoids and probably a synapopmorphy for the family Theridiidae and invented the term theridiid tegular apophysis (=TTA). Also, Forster *et al*. (1990) seemingly did not accapt the use of terminal apophysys in Theridiidae, placing the term inside the quatation marks. To make this all still wors Agnarsson (2004) apparently misunderstood Coddington´s (1990) paper and retained the use of terminal apophysis and used the term theridiid tegular apophysis for a structure called by Coddington (1990) the median apophysis and by me (Saaristo 1978) the terminal apophysis; in this paper I use the last mentioned term. Finally, as I already have suggested (Saaristo 1978) it seems desirably to use the term embolic complex instead of refering to that usually considerably complex structure simply as the embolus (see eg. Figs.20 and 35). In theridiids the actual embolus or embolus proper is mostly an elongated whip-like element turning clockwise in the left palp but sometimes short and almost tooth-like. In the left palp the embolus turns clockwise and in in right palp anticlocwise. In this study the following terminology is used: cymbial hook (CHO), cymbial pit (CPI), tegular apophysis containing a loop of seminal duct (TTA1), tegular apophysis devoid of seminal duct (TTA2), terminal apophysis (TAP), conductor (CON), embolic complex (ECO) and embolus (EMB).

The female copulatory organ consists of two main parts, viz. the external

epigyne and internal adnexae, which both have symmetrical right and left sections. The epigyne is formed by a more or less sclerotized plate bearing usually circular openings or entrance holes (EHO) on both sides of the median line and leading into the adnexae. Usually the entrance holes are situated in a common depression or atrium (ATR) or on both sides on a median elevation. Frequently there is a tongue-like median extension projecting from the posterior edge of the atrium and here called the atrial lingua (ALI). Most often the structures forming adnexae are called vulvae but this term is misleading and I therefore follow the practice used eg. by Roberts (1983). The adnexae includes entrance tubes (ETU) which start from the entrance holes and lead to the seminal receptaculae (SRE; paired in Hadrotarsinae) - from there the short fertilizing tubes (FTU) lead into the vagina.

**Family Theridiidae** Sundevall, 1833

**subfamily Hadrotarsinae** Thorell, 1881

*Diagnosis:* The members of this subfamily are easily distinguished from the members of other theritiid subfamilies by having on the first tarsi specialized ventral setae with expanded tips, two pairs of seminal receptacules and dorsoventrally flattened claw of female palp. Further they have feeble basal part of chelicerae which are shorter than the length of clypeus while the fangs are usully long and thin.

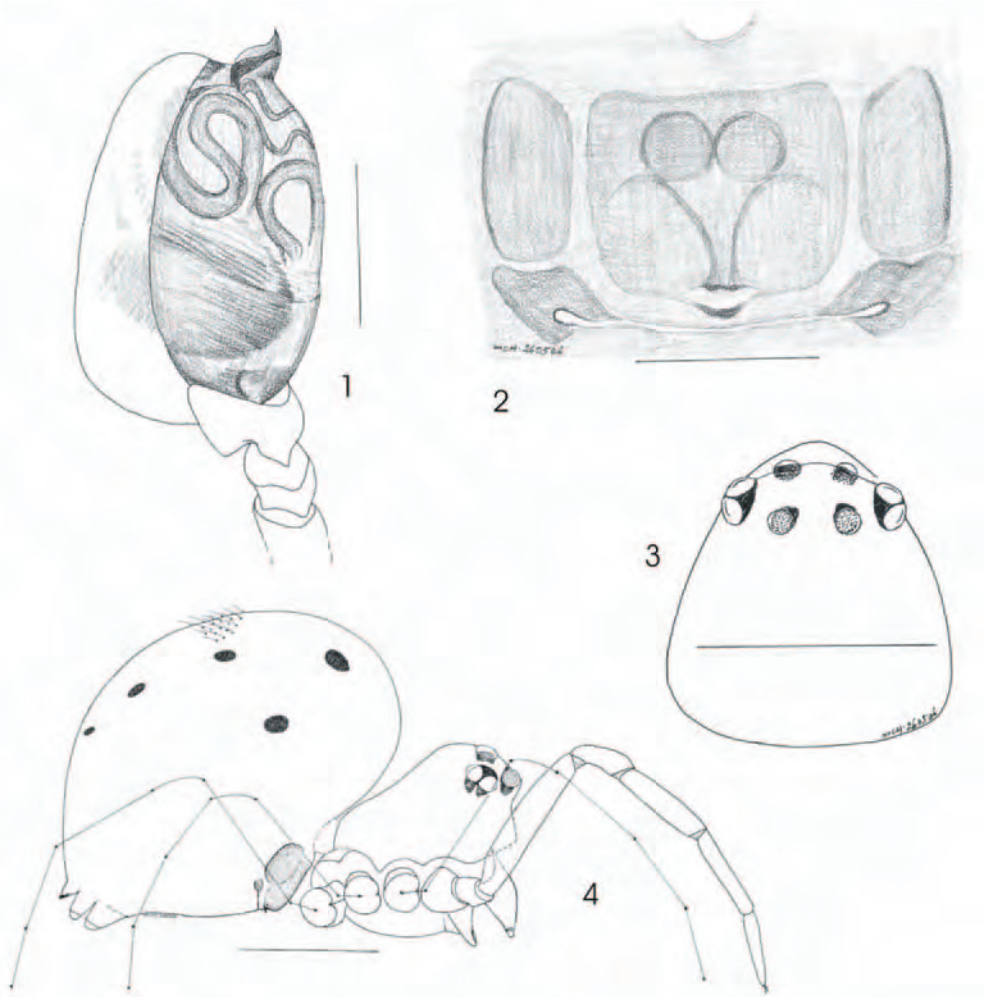
**Genus *Phycosoma*** O. Pickard-Cambridge, 1879
*Phycosoma* O. Pickard-Cambridge, 1879d: 692. Type species by monotypy *Phycosoma oecobioides* O. Pickard-Cambridge, 1879 from New Zealand, Chatham Is.
*Diagnosis:* Male carapace transformed into a considerably high cylindrical turret.

***Phycosoma martinae*** (Roberts, 1983) (Figs. 1-4)
*Dipoena martinae* Roberts, 1983: 227, f. 32-35 (Dm).
*Dipoena japonica* Yoshida, 1991e: 33, f. 2 (f, misidentified).
*Dipoena decamaculata* Chen, Peng & Zhao, 1992: 270, f. 1-5 (Dmf).
*Dipoena coreana* Paik, 1995: 32, f. 1-6 (Dm).
*Dipoena ruedai* Barrion & Litsinger, 1995: 454, f. 274a-j (Dm).
*Dipoena martinae***,** Zhu 1998: 236, f. 154A-F (m, Sf).
-*"-,* Song Zhu & Chen, 1999: 112, f. 55C-D, K-L (mf).
-*"-,* Yoshida & Ono 2000: 132, f. 11-16 (mf, S).
*Trigonobothrys* Yoshida, 2002a: 14 (Tmf from *Dipoena*).
-*"-,* Yoshida, 2003a: 178, f. 493-498 (mf).
-*"-,* Sudhikumar, Mathew & Sebastian, 2004: 52, f. a-h (mf).
*Phycosoma martinae***,** Platnick 2005 (Tmf from *Trigonobothrys*).
*Specimens examined:* Marianne, sweeping, 2$$, 23.10. 1999, coll. BirdLife (MZT AA 1.942).
*Diagnosis:* The species is much like *P. spundana* both being almost white coloured with four pairs of small, black dorsal pairs. However, *P. martinae* is almost half smaller and

easily recognized by having the abdominal hairs standing on small, strongly sclerotized, somewhat elevated bases (Fig. 4).

*Description:* Male well described by Roberts (1983). Female much like the male but the carapace is not turret-like.

*Distribution:* The species seems to have a wide distribution in old world tropics from Aldabra to India, China, Korea, Ryukyu Is., and Philippines (Platnick 2006). On the granitic Seychelles found on Marianne (Saaristo & Hill 2002 as *Dipoena menustya*).




Figs. 1-4 . *Phycosoma martinae* (Roberts, 1983). - 1: Male palp ventrally (redrawn from Roberts 1983). – 2: Epigyne. – 3: Female carapace dorsally. – 4: Female laterally. – Scale bars: Figs 1, 2 = 0.2 mm, Figs 3, 4 = 0.5 mm. - Orig.

***Phycosoma spundana*** (Roberts, 1978) **n. comb.** (Figs. 5-12)

*Dipoena spundana* Roberts, 1978: 903, f. 1-4 (Dm).

*Specimens examined:* Aride, 1j., 1975, M. Mühlenberg leg.(MZT AA 0.201), 4$$1j., 27-28.02.1999, J.Cadbury & E. Andrews leg. (MZT AA 1.261-1.262), and 2subad.##2$$, June 1999, J. Bowler leg. (MZT AA 1.291 and 1.294); Cousin; 3##, 1978, Hugh Watkins leg. (MZT AA 0.200); Denis, sweeping, 2##4$$2juvs., April 2000, coll. BirdLife (MZT AA 1.944-1.946); North, sweeping, 2##3$$, Jan. 2000, coll. BirdLife (MZT AA 1.943); Silhouette, La Passe, 1#, 15.01.1999, Ron Gerlach leg. and Belle Vue, 1$, 14.01.1999, M. Saaristo & J. Gerlach leg. (MZT AA 0.895).

*Diagnosis:* The species may be recognized by its overall pale colouration with four pairs of dark spots on dorsal side of abdomen and two pairs of long and curved masrosetae among the sparsely sprickled hairs standing on small skerotized bases (Fig. 8)

*Description:* Male well described by Roberts (1978). Female much like the male but cephalothorax not elevated and abdomen globular (Fig. 10).

*Distribution:* The species may be endemic to Seychelles. On the granitic islands found on Aride (Bowler *et al*. 1999), Cousin, Denis, La Digue (Roberts 1978), North (Saaristo & Hill 2002) and Silhouette (Saaristo 1999).

**subfamily Argyrodinae** Simon, 1881

*Discussion:* I (Saaristo 2002) have thoroughly discribed all *Argyrodes* species found on the granitic Seychelles islands. At that time I was still following the then generally accepted views of delimiting of the theridiid genera presented by Levi & Levi (1962). However, Yoshida (2001b) followed by Agnarsson (2004) released *Ariamnes* Thorell, 1869, *Rhomphaea* L. Koch, 1872 from the synonymy with *Argyrodes* Simon, 1864. This affects the Seychellian Argyrodinae species and therefore it is necessary to list them here and create a new genus.

**Genus *Argyrodella* n. gen.**

*Type species*: *Argyrodes pusillus* Saaristo, 1978 from Seychelles.

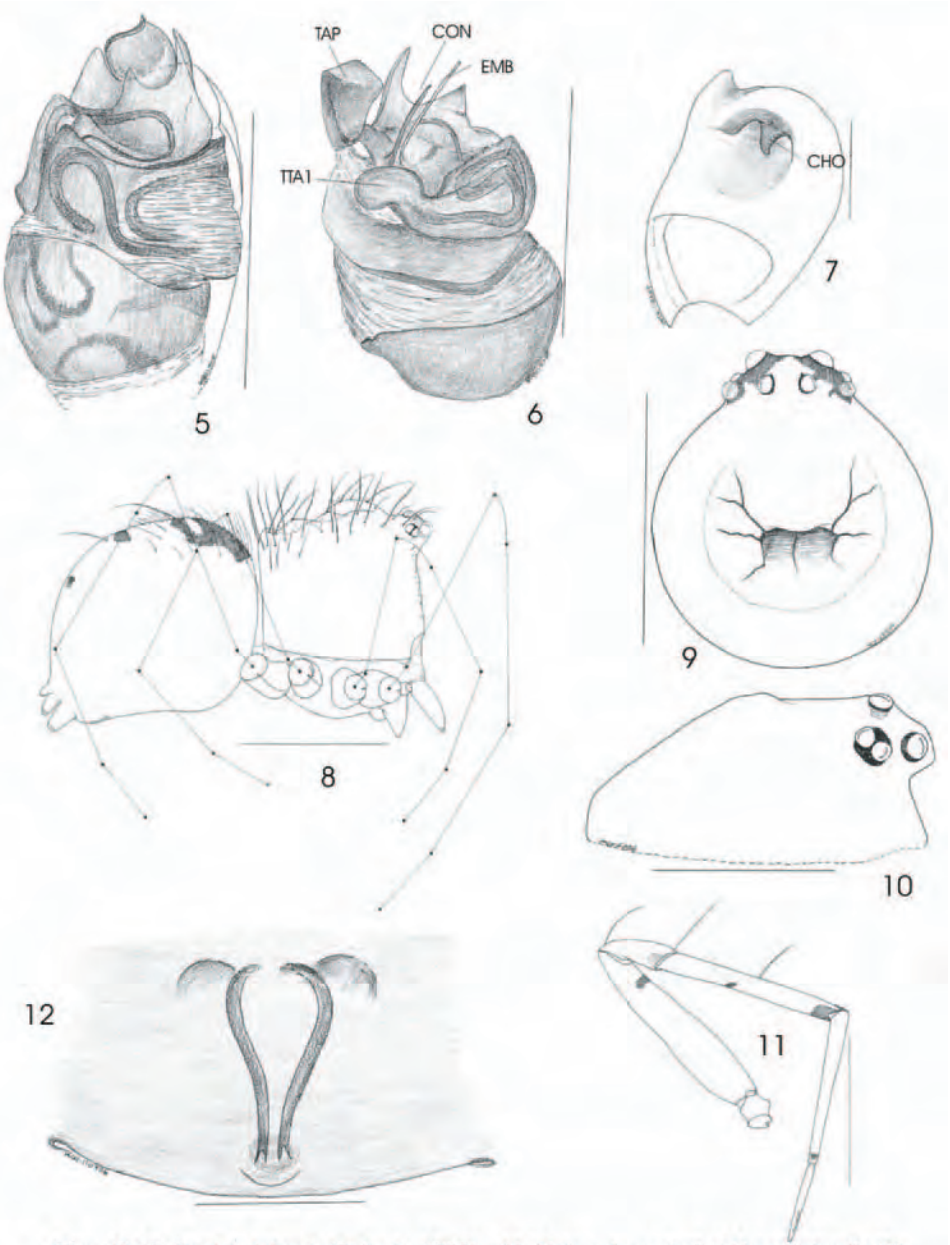
*Diagnosis:* Small species (CL=0.8–1.0). The general arangement of palpal sclerites as in *Argyrodes* although much simpler. Embolic complex bulbous with a short teeth-like embolus proper; terminal apophysis and conductor A totally translucent, more or less tongue-like; locking arm short, flat plate-like (Saaristo 1997, Figs. 165-169). Entrance holes of epigyne on either side of a median hump (Saaristo 2000, Fig. 2G).

*Species included:* Only the type species *Argyrodella pusillus* (Saaristo, 1978) **n. comb.**

*Etymology:* The generic epithet refers to the small size and and *Argyrodes*-like habitus of its type species. Gender feminine.

**Genus *Argyrodes*** Simon, 1864: 253. - Type species by subsequent designation (Petrunkevitch 1911: 170) *Linyphia argyrodes* Walckenaer, 1841 from France.

Not a senior synonym of *Ariamnes* Thorell, 1869, *Rhomphaea* L. Koch, 1872, or *Spheropistha* Yaginuma, 1957 (Agnarrson 2004: 476-489, after Yoshida 2001d: 183-184, contra Levi & Levi 1962: 16-27 and Tanikawa 1998a: 22),




Figs. 13-18. *Bardala labarda* (Roberts, 1983). –13: Male palp ventrally (A) and laterally (B). – 14: Cymbium ventrally. – 15: Epigyne anteroventrally (A) and laterally (B). – 16: Epigyne ventrally. – 17: Apical part of bulbus ventrally. – 18: Female laterally (A) and dorsally (B). – Scale bars: Figs 13-16 = 0.2 mm, Fig. 17 = 01. mm, Fig. 18 = 1.0 mm. - Orig.

*Diagnosis:* Abdomen more or less triangular. Male with projections on frontal part of the carapace. Medium sized – large species (CL=1.3-2.0)
*Seychellian species: Argyrodes argyrodes (*Walckenaer, 1841), *Argyrodes cognatus* (Blackwall, 1877), *Argyrodes* fissifrontella Saaristo, 1978, and *Argyrodes rostratus* Blackwall, 1877.

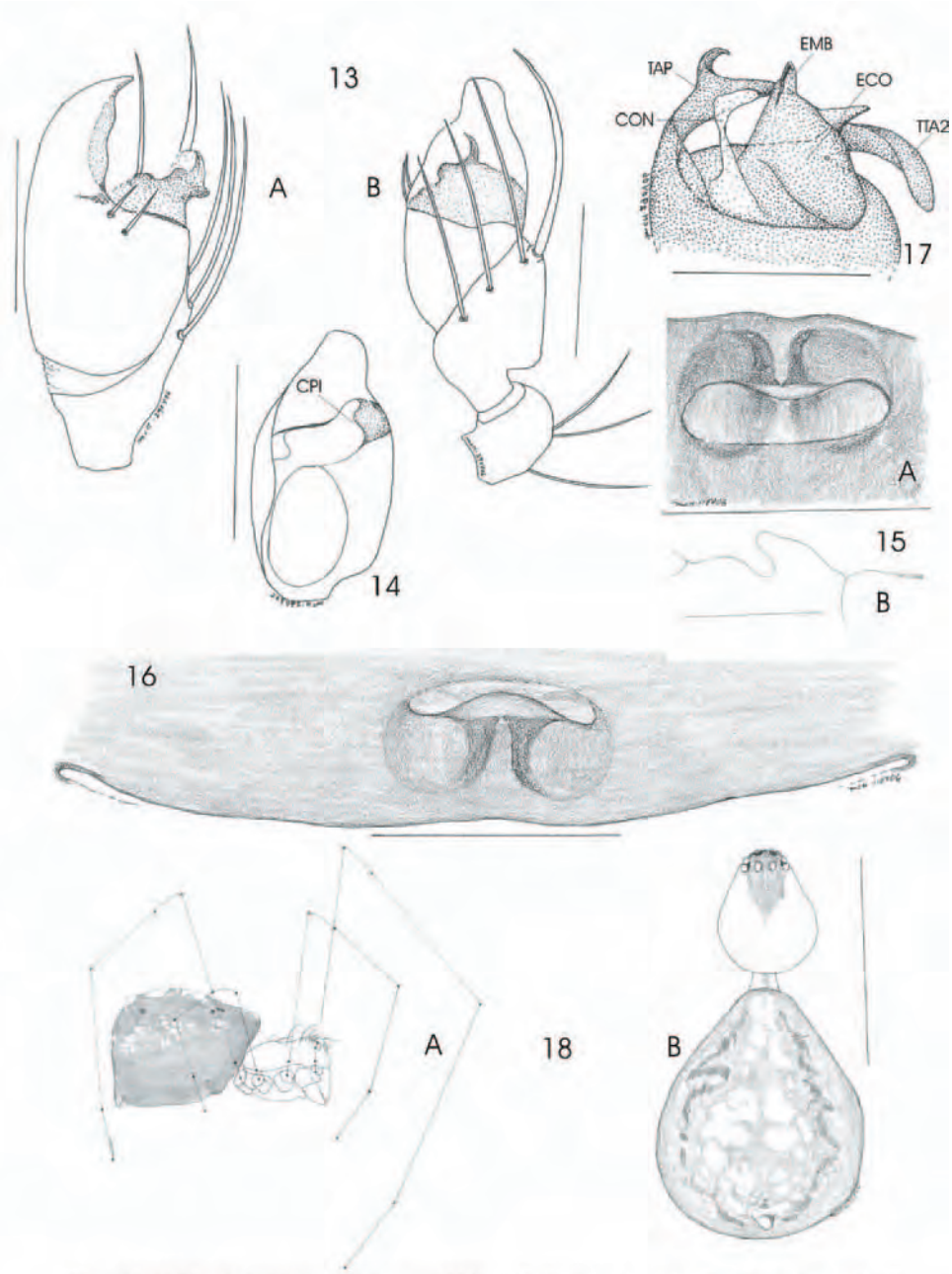
**Genus *Rhomphaea*** L. Koch, 1872: 289. – Type species by monotypy *Rhomphea cometes* L. Koch, 1872 from Samoa.
Removed from the synonymy of *Argyrodes* Simon, 1864 by Agnarrson 2004: 479, after Yoshida 2001d: 185-187, contra Levi & Levi 1962: 27.
*Diagnosis:* Clypeus strongly projecting. Abdomen elongated triangular or cylindrical. Male may have projection on the frontal part of the carapace. Medium sized species (CL=1.1–1.4).
*Seychellian species: Rhomphaea barycephalus* (Roberts, 1983) **n. comb.** and *Rhomphea recurvatus* (Saaristo, 1978) **n. comb.**

**subfamily Theridiinae** Sundevall, 1833

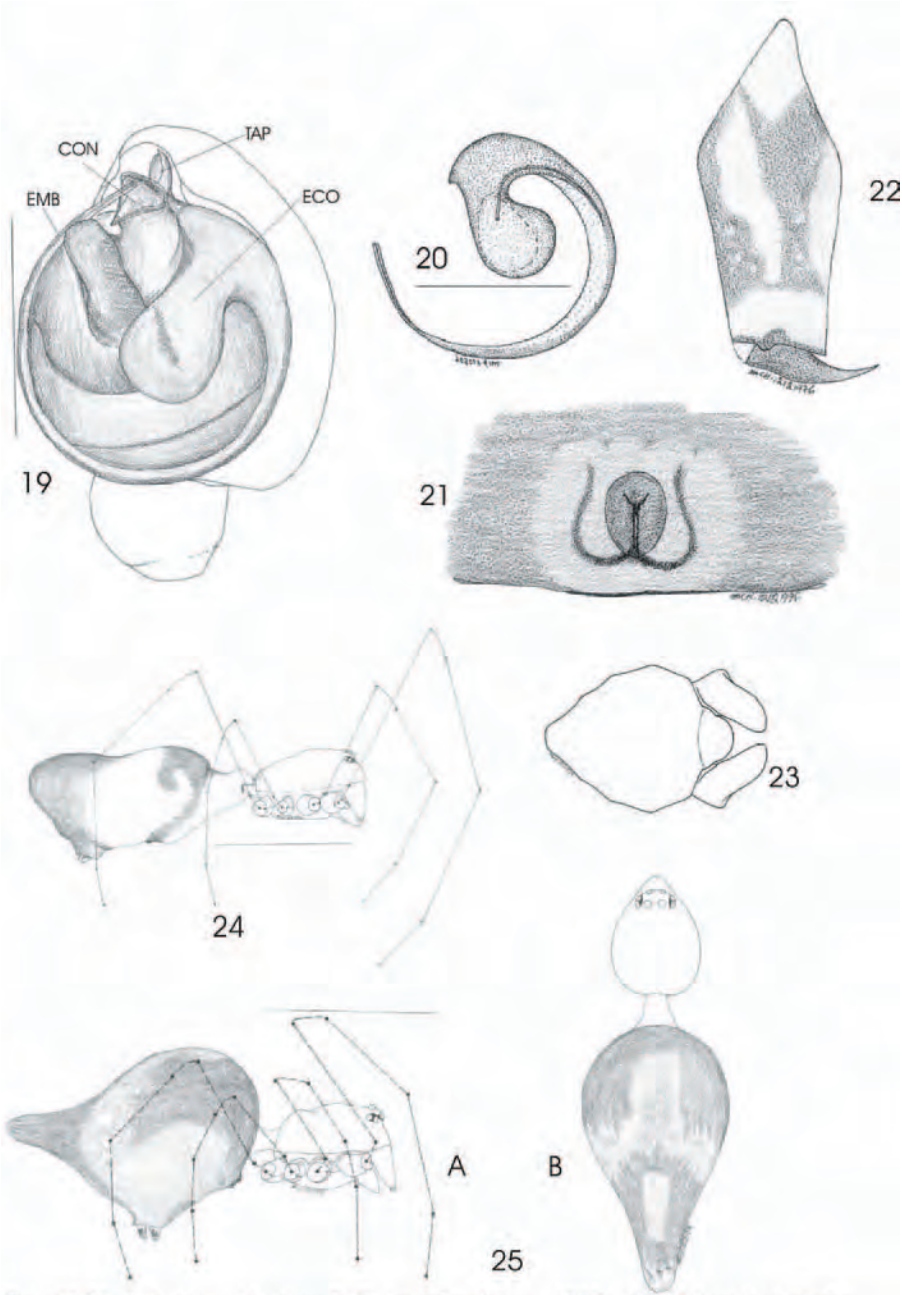
*Diagnosis:* Tegular apophysis (TTA2) always without looping ejaculatory duct, its apical part is inserted inside the cymbial pit (CPI). Primarily four tegular sclerites but they are frequently variously modified or even totally reduced.

**Genus *Bardala* n. gen.** - Type species *Achaearanea labarda* Roberts, 1982 from Aldabra, Seychelles.
*Diagnosis:* The genus is diagnosed by having the apex of the cymbium of the male palp claw-like extented and equiped with several macrosetae (Fig. 13). Female epigyne with transversaly elongated atrium bearing on its posterior edge an anteriorly pointing extension, entrance holes immidiatelly in front of the lip-like extension (Figs.15 and 16).
*Etymology:* The generic name is an acronym of the name of its type species. Gender feminine.

***Bardala labarda*** (Roberts, 1982) **n. comb. (**Figs. 13-18.)
*Achaearanea labarda* Roberts, 1982: 228, f. 38-49 (Dmf).
*Specimens examined:* Aldabra, Picard, 5##1subad# 7$$,1974-1975, R. Prys-Jones leg. (MZT AA 2.474), Aride, 4$$, 1975, M. Mühlenberg leg. (MZT AA 0.227) and litter sampling, 1$, July-November 2000, John Bowler leg. (MZT AA 2.139); Denis, sweeping, 2juvs, Oct. 1999, coll. BirdLife leg. (MZT AA 1.839); Cousin, sweeping, 4##1$, March 2000, coll. BirdLife leg. (MZT AA 1.841-1.844); Marianne, sweeping., 1#4$$, 23.10. 1999, coll. BirdLife leg. (MZT AA 1.840)




Figs. 13-18. *Bardala labarda* (Roberts, 1983). –13: Male palp ventrally (A) and laterally (B). – 14: Cymbium ventrally. – 15: Epigyne anteroventrally (A) and laterally (B). – 16: Epigyne ventrally. – 17: Apical part of bulbus ventrally. – 18: Female laterally (A) and dorsally (B). – Scale bars: Figs 13-16 = 0.2 mm, Fig. 17 = 01. mm, Fig. 18 = 1.0 mm. - Orig.




Figs. 19-25. *Coleosoma blandum* O. Pickard-Cambridge, 1882. – 19: Male palp ventrally. – 20: Embolic complex ventrally. – 21: Epigyne ventrally.– 22: Female chelicer frontally. – 23: Sternum of female ventrally. – 24: Male laterally. – 25: Female laterally (A) and dorsally (B). – Scale bars: Figs 19-23 = 0.2 mm, Figs 24, 25 = 1.0 mm. – Orig.

*Diagnosis:* This pale coloured, long and slender legged species can be recognized by the pink coloured ocular area and the laterodorsal pinkish bands on abdomen (Fig. 18). Also the male and female copulatory organs are very characteristic (Figs. 13–16).
*Description:* Well described by Roberts (1983).
*Distribution:* This endemic species has been found on Aldabra (Roberts 1983) and Aride (Boeler *et al*. 1999), Denis (Saaristo & Hill 2002), Cousin (Saaristo & Hill 2002) and Marianne (Saaristo & Hill 2002).

**Genus *Coleosoma* O. Pickard-Cambridge, 1882**

*Coleosoma* O. Pickard-Cambridge, 1882: 426. - Type species by monotypy *Theridion blandum* O. Pickard-Cambridge, 1882 from Sri Lanka.
*Diagnosis:* Relatively small species with pronounced sexual dimorphism; males are thought to be ant mimics. Abdomen of male elongate, anteriorly constricted with rather ill-defined scutum. Stridulating picks on an anterodorsal projection of the abdomen. Shape of female abdomen variable but basically globular, higher than wide.

***Coleosoma blandum*** O. Pickard-Cambridge, 1882 (Figs. 19-25.)

*Coleosoma blandum* O. Pickard-Cambridge, 1882: 427, pl. 29, f. 3 (Dm).
-*''*-, Keyserling, 1884: 212, pl. 10, f. 129 (Df).
*Chrysso acrobeles*, Saaristo 1978: 117, f. 170-174 (Tf from *Theridion*, = *Theridion conurum*).
*Coleosoma blandum*, Roberts 1978: 915, f. 27-30 (f, = *Chrysso acrobeles* = *Theridion conurum*).

N.B. For more references see Platnick (2005).
*Specimens examined:* Aride, 1m, 19.07.1975, M. Mühlenberg leg. (MZT AA 0.202); Bird, on *Scaveola sericea*, 2juvs., 04.04.2001, J. Gerlach leg. (MZT AA 2.189); Cousin, 9##1$2juvs., April 1978, Hugh Watkins leg.(MZT AA 0.203-0.206) and sweeping, ##m9$$6juvs., Dec. 1999, coll. BirdLife (MZT AA 1.904-1.908); Denis, sweeping, 6$$3juvs., April 2000, coll. BirdLife (MZT AA 1.895-1.899); Mahé, near the Reef hotel, 1$, 24.10.1975, M. Saaristo leg. (MZT AA 0.034); Marianne, sweeping, 5$$7juvs, 23.10.1999, coll. BirdLife (MZT AA 1.900-1.901); North, sweeping, 1juv., May 1999, coll. BirdLife (MZT AA 1.907), Silhouette, Anse Cimitiere, 3##10$$3juvs, 18.01.1999, M. Saaristo leg. (MZT AA 0.892) and La Passe, 3##13$$, 11.01.1999, M. Saaristo leg. (MZT AA 0.893 and 0.894); Therese, sweeping, 2$$5juvs, Sept. 1999, coll. BirdLife (MZT AA 1.902-1.903).
*Diagnosis:* The male can be recognized by the broad cymbium and bulbus (Fig. 19) and sickle-shaped embolus with tear-shaped basal part (Fig. 20) and heavily built anterodorsal projection of the abdomen (Fig. 24). Female easily recognized by the conical posterior extension of the abdomen (Fig. 25).
*Description:* Total length 1.65-1.95mm; carapace 0.60mm. Cephalothorax and palps brown, strongly suffused with black. Legs whitish; inner sides of femora I, II and IV

usually with long black stripe, coxae often marked with black as well as apikal parts of tarsi and proximal parts of metatarsi. Abdomen blackish with large, dirty white area laterally and ventrally about at its middle. Abdomen of male elongate with rather long, neck-like constriction anteriorly, that of female globular with conical posterior extension. Abdomen of subadult male like that of female. Epigyne of female with a dark, median egg-shaped area including Y-shaped structure from which starts anteriorly pointing S-shaped ducts.

*Distribution:* This is a paleotropical species which has been found on Aride (Bowler *et al.* 1999), Cousin, Cousine (Saaristo 1999), Denis (Saaristo & Hill 2002), Mahé (Saaristo 1978: *Chrysso acrobeles*, and 1999, Roberts 1978), Marianne (Saaristo & Hill 2002), Silhouette (Saaristo 1999) and Therese (Saaristo & Hill 2002).

***Coleosoma floridanum*** Banks, 1900 (Figs. 26-33)

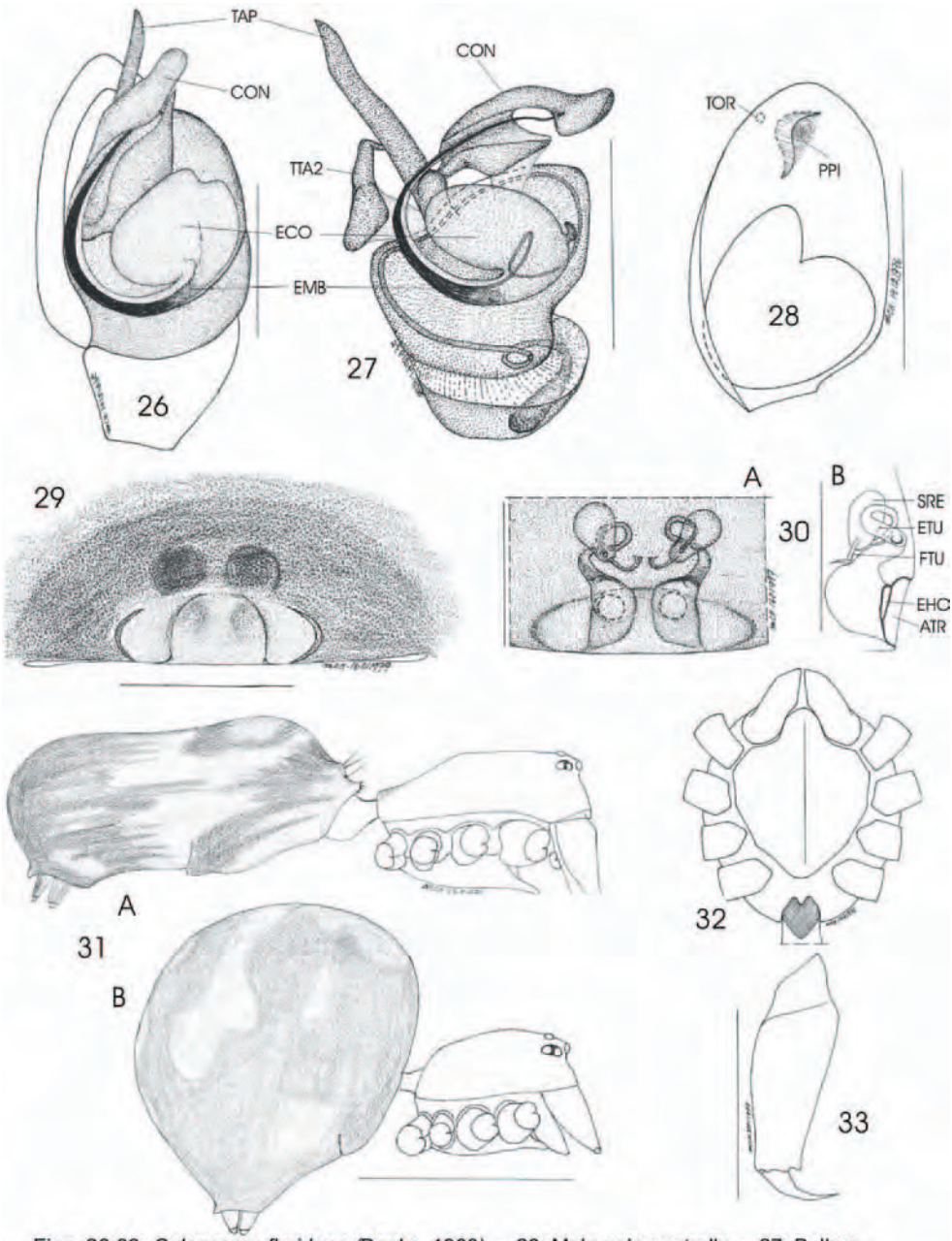
*Coleosoma floridana* Banks, 1900: 98 (Dm).

-*"-,* Levi 1967c: 181, f. 32-36 (mf).

-*"-,* Saaristo 1978: 117, f. 175-182 (mf).

N.B. For more references see Platnick 2005.

*Specimens examined:* Cocos ('Albatross'), 2##, 29.09.1975, M. Mühlenberg leg. (MRAC 177.109); Aride, 1#1$, 13.08.1975, M. Mühlenberg leg. (MZT AA 0.207 and 0.208) and litter sampling, 1$, July-November 2000, John Bowler leg. (MZT AA 2.137: Conception, sweeping., 1#, Sept. 1999, coll. BirdLife leg. (MZT AA 1.939) and pitfall, 1#, 27.02. 2000, coll. BirdLife leg. (MZT AA 1.917); Cousin, 6m5f, April 1978, Hugh Watkins leg.(MZT AA 0.209-0.216), by pitfalls, 2##1$1juv., 1999, coll. BirdLife leg. (MZT AA 1.921-1.924), and sweeping., 1$, Dec. 1999, coll. BirdLife leg. (MZT AA 1.938); Cousine, 6##11$$2juvs, 23-25.01.1999, M. Saaristo leg. (MZT AA 0.874-0.879); Curieuse, by pitfalls, 3$$2juvs, 2000, coll. BirdLife leg. (MZT AA 1.925-1.928) and sweeping., 3$$, January 2000, coll. BirdLife leg. (MZT AA 1.936-1.937); Grande Soeur, 15##1$, 10. and 17.09.1975, M. Mühlenberg leg. (MRAC 177.096, 177.105, 177.114, 177.134, 177.135, 177.147, 177.148, 177.150, 177.152, 177.157, 177.158, 177.160, 177.179); Denis, by pitfalls, 3juvs, 1999-2000, coll. BirdLife leg. (MZT AA 1.919-1.920, 2.097) and sweeping., 1subad.#.13$$42juvs, April 2000, coll. BirdLife leg. (MZT AA 1.930-1.935, 1.940); Felicite, by pitfalls, 1$, 14.11. 1999, coll. BirdLife leg. (MZT AA 1.918); Mahé, ca. 5kms west from the Reef Hotel (600 elv.), 1#1$, 25.10.1975, M. Saaristo leg. (MZT AA 0.035), Le Niol, 4##21$$3juvs, June 1994, J. Gerlach leg. (MZT AA 0.306, 0.307 and 0.880); Petite Soeur, 3##1$, 17.09.1975, (MRAC 177.162 and 177.180); Marianne, by pitfalls, 3##10$$, 26.10. 1999, coll. BirdLife leg. (MZT AA 1.910-1.916); North, 2$$, 30.07.2000, J. Gerlach leg., M. Saaristo det. (MZT AA 1.404) and by pitfalls, 2$$1juv., 30-31.01.2000, coll. BirdLife leg. (MZT AA 1.929, 2.098); Praslin, 1#, 28.10.1975, M. Saaristo leg. (MZT AA 0.036); Silhouette, various places, 21##68$$4juvs, 07-24.01.1999 M. Saaristo and J. Gerlach leg. (MZT AA 0.846-0.872), Coco dans Trou, 1#, 26.07.1998, J. Gerlach leg. (MZT AA 0.873), and Belle Vue, (pitfall traps), 2##3$$, 16-20.07.1999, J. Gerlach leg. (MZT AA 1.305)




Figs. 26-33. *Coleosoma floridana* (Banks, 1900). – 26: Male palp ventrally. – 27: Bulbus treated with KOH laterally. – 28: Cymbium ventrally. – 29: Epigyne ventrally. – 30: Adnexae dorsally (A) and laterally (B). – 31: Male (A) and female (B) laterally. – 32: Sternum of female ventrally. – 33: Chelicer of female frontally. – Scale bars: 26-30 = 0.2 mm, 31 = 1.0 mm, 32, 33 = 0.5 mm. – Orig.

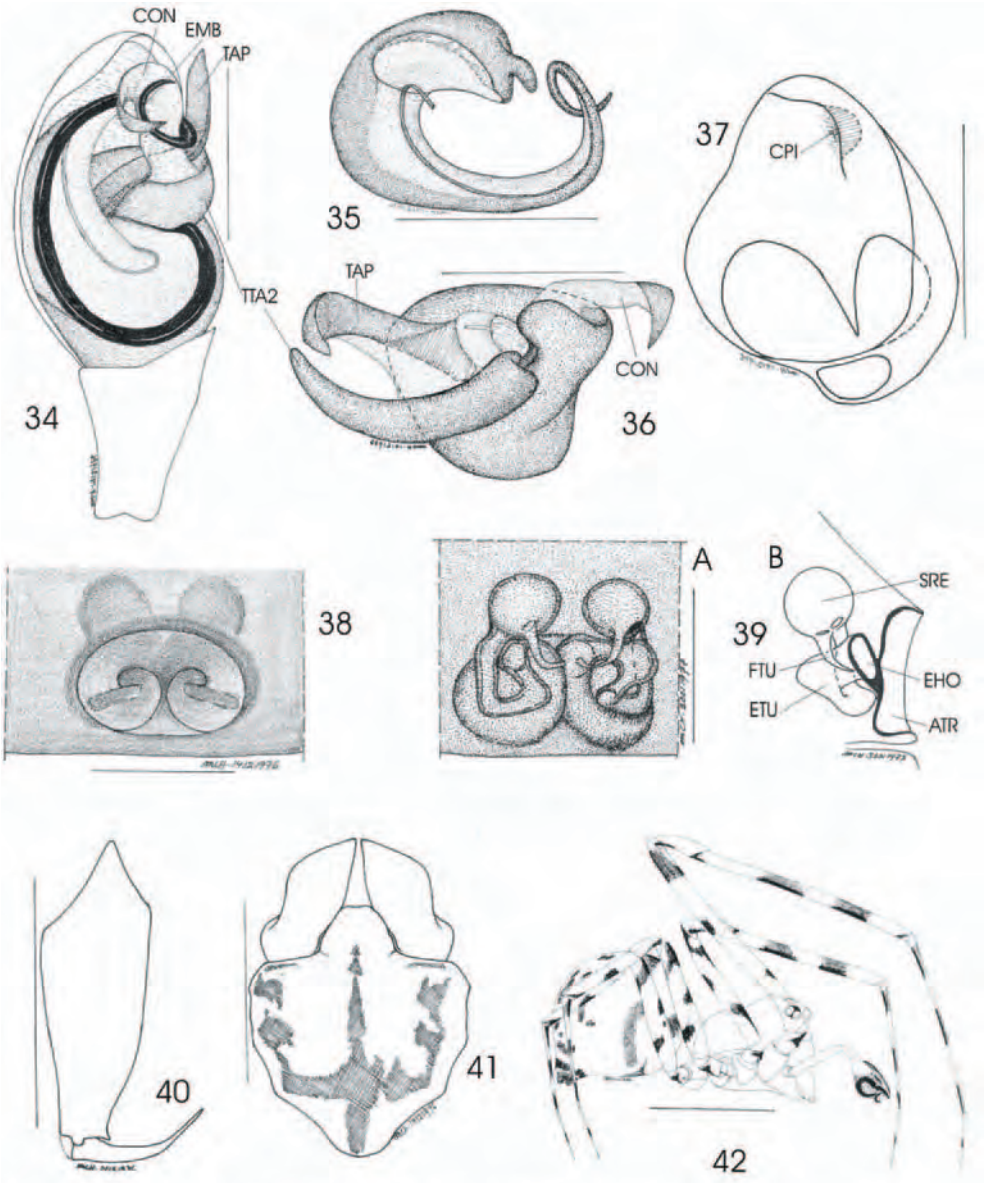
*Diagnosis:* The male remainds that of *C. blandum* but the cymbium and bulbus are narrower and base of embolus circular bearing a small lateral hook (Fig. 27). Abdomen of female somewhat egg-shaped higher than wide with distinct pattern of large pale areas of dark back-ground (Fig. 31B). Epigyne somatimes difficult the detect but basicly there is a pale oval-shaped transversely lying oval-shaped atrium immidiatelly anteriorly from the epigastric furrow and a pair of dark spherical circles or tranlucent seminal receptaculae.
*Description:* The species has been adequately described by Levi (1967) and Saaristo (1978).
*Distribution:* Pantropical, greenhouses in Europe (Platnick 2005). This is a well-known cosmopolitan species and often locally quite abundant. Found on the following islands: Aride (Bowler *et al*. 1999), Cocos, Conception (Saaristo & Hill 2002), Cousin (Saaristo & Hill 2002), Cousine (Saaristo 1999), Curieuse (Saaristo & Hill 2002), Denis (Saaristo & Hill 2002, Felicite (Saaristo & Hill 2002), Grande Soeur, La Digue (Roberts 1978), Mahé (Saaristo 1978, 1999), Marianne (Saaristo & Hill 2002), North (Saaristo & Hill 2002), Petit Soeur (Saaristo & Hill 2002), Praslin (Saaristo 1978, Roberts 1978) and Silhouette (Roberts 1978, Saaristo 1999).

**Genus *Keijia*** Yoshida, 2001
*Keijia* Yoshida, 2001: 169. – Type species by original designation *Keijia maculata* Yoshida, 2001 fom Japan.
*Diagnosis:* The genus is distinguished by having a spherical pale coloured abdomen with several black flecks and spots, legs and sternum also with dark markings.

***Keijia mneon*** (Bösenberg & Strand, 1906) (Figs. 34-42)

*Theridion mneon* Bösenberg & Strand, 1906: 142, pl. 12, f. 286 (Df).
*Theridion adamsoni* Berland, 1934a: 102, f. 6-9 (Df).
-*"*-, Levi 1967c: 181, f. 20-23 (mf).
*Coleosoma adamsoni*, Saaristo 1978: 117, f. 183-191 (Tm from *Theridion*, Df).
*Keijia mneon*, Yoshida,2001c: 172, f. 8, 53-55 (Tf from *Theridion*, = *adamsoni*).

N.B. For more references see Platnick 2005.
*Specimens examined:* Aldabra, Picard, 1$**,** Dec. 2000, Pat Matyot leg.(MZT AA 2.245); Cousine, 1#, 23.01.1999, M. Saaristo leg. (MZT AA 0.891); Denis, sweeping, 7##5$$8juvs, Oct. 1999 and April 2000, coll. BirdLife (MZT AA 0.920, 1.886-1.893); Mahé: the Reef Hotel, in *Casuarina* bushes, 1#1$, 27.10.1975, M. Saaristo leg. (MZT AA 0.037) and 1#, 29.12.1993, J. Gerlach leg. (MZT AA 0.920); Marianne, sweeping, 1juv., 23.10.1999, coll. BirdLife (MZT AA 1.894); Silhouette, various places, 5##5$$4juvs, 09-20.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.882-0.890).
*Diagnosis:* Both male and female have a spherical pale coloured abdomen with several black flecks and spots, legs and sternum also with dark markings (Fig. 42). Embolic complex with a basal crook and sickle-shaped embolus (Fig. 34-5). Epigynal atrium elliptical with shallow groowes leading to central epigynal openings (Fig. 38-9).

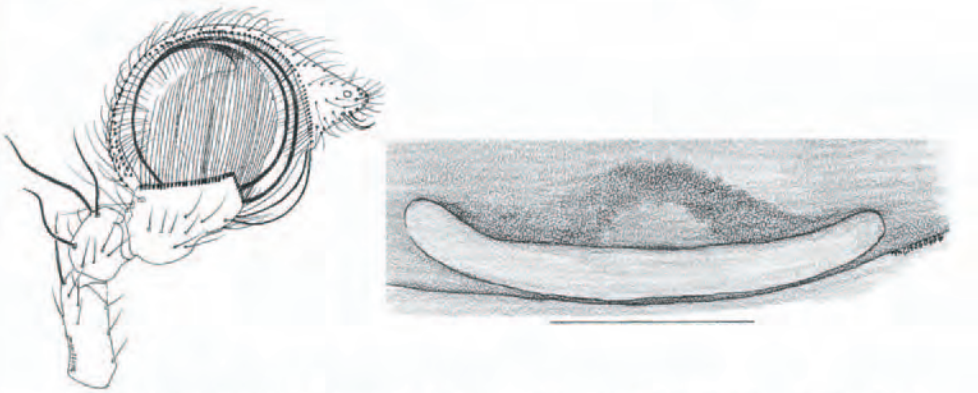



Figs. 34-42. *Keijia mneon* (Bösenberg & Strand, 1906). – 34: Male palp ventrally – 35: Embolic complex ventrally.– 36: Apical part of bulbus laterally with embolus detached, treated with KOH. – 37: Cymbium ventrally. – 38: Epigyne ventrally. – 39: – Adnexae dorsally (A) and laterally (B). – 40: Male chelicer frontally.– 41: Sternum of male ventrally. – 42: Male laterally. – Scale bars: Figs 34-39 = 0.2 mm, 40, 41 = 0.5mm, Fig. 42 = 1.0 mm. – Orig.

*Description:* The species has been adequately described by Levi (1967) and Saaristo (1978).
*Distribution:* This pantropical species has been found on Aldabra, Denis (Saaristo & Hill 2002), Cousine (Saaristo 1999), Mahé (Saaristo 1978, 1999, Roberts 1978), Marianne (Saaristo & Hill 2002), and Silhouette (Saaristo 1999).

**Genus *Kochiura*** Archer, 1950
*Kochiura* Archer, 1950: 16. - Type species by original designation and monotypy *Theridium aulicum* C. L. Koch, 1838 from Greece.
N.B. Removed from the synonymy of *Anelosimus* Simon, 1891 by Agnarsson, 2004: 476, contra Levi, 1956b: 412.
*Diagnosis:* Apex of cymbium deeply devided but unequally so, the dorsal process being the lesser of the two. Embolus thread-like, forming several coils (Fig. 43). Epigyne with a wide and narrow, transverse atrium (Fig. 44).

***Kochiura aulica*** (C. L. Koch, 1838) (Figs. 43-44)
*Theridion aulicum* C. L. Koch, 1838: 115, f. 323 (Df).
*Kochiura aulica*, Archer 1950: 16, pl. I, f. 3 (Tmf from *Theridion*).
*Theridion aulicum*, Locket & Millidge 1953: 61, f. 41A-B (mf).
*Anelosimus aulicum*, Levi 1956b: 412.
-"-, Roberts, 1985: 181, f. 80c (mf).
N.B. For more references see Platnick 2006.
*Specimens examined:* FRANCE: Corsica, San Bastiano, in vegetation of macchia, 1#1$, 22.V.1972, P. T. Lehtinen leg. (MZT AA 3.715).
*Diagnosis:* Abdomen of both sexes with similar dorsal pattern as *S. placens* but median stripe grey, thinly edged with black. Embolus thread-like, forming several coils (Fig. 43). Epigyne with a wide and narrow, transverse atrium (Fig. 44).
*Description:* Well described by e.g. by Wiehle (1937) and Locket & Millidge (1973).



Figs. 43-44. *Kochiura aulicum* (C. L. Koch, 1838). – 43: Male palp laterallyally. – 44: Epigyne ventrally. – Scale bars: 0.2 mm. – Orig.

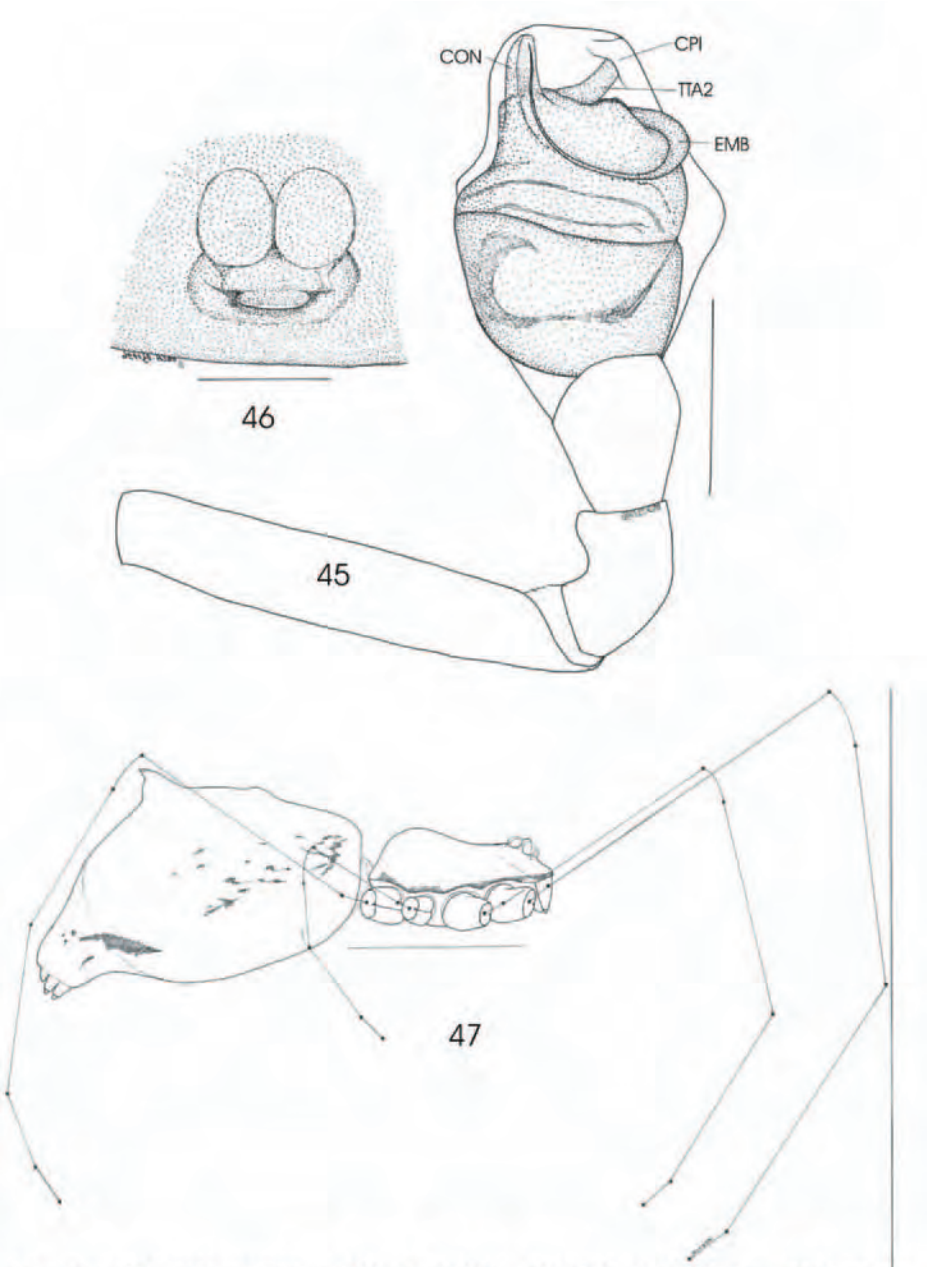
*Distribution:* Canary Is., Cape Verde Is. to Azerbeijan (Platnick 2006). Only one old record from Mahé (Simon 1893).

**Genus *Moneta*** O. Pickard-Cambridge, 1870
*Moneta* O. Pickard-Cambridge, 1870: 736. - Type species by monotypy *Moneta spiniger* O. Pickard-Cambridge, 1870 from Sri Lanka.
N.B.: Removed (along with its junior synonym *Hyptimorpha* Strand, in Bösenberg & Strand, 1906) from the synonymy of *Episinus* Walckenaer, 1809 by Okuma, 1994: 16, contra Levi & Levi, 1962: 24.
*Diagnosis: Moneta* species may be recognized by having the eyes in dorsal view in two more or less parallel rows.
*Discussion: Moneta* was synonymized with *Episinus* Walckenaer in Latreille, 1809 by Levi & Levi (1962). Recently, Okuma (1994) has removed *Moneta* from the synonymy of *Episinus*; I am in full agreement with him.

***Moneta coercervus*** (Roberts, 1978) **n. comb. (**Figs. 45-47)
*Moneta spiniger*, Simon 1898: 376 (misidentification).
*Episinus coercervus* Roberts, 1978: 921, f. 39-43 (Dmf).
*Specimens examined:* Mahé, Mt. Crève Coeur, versant Ouest, 300 m, holotype female and allotype male of *Episinus coercervus*, June 1972, P.L.G. Benoit & J.J. van Mol leg. (MRAC 144.719 and 150.211).
*Diagnosis:* The species may be recognized by the unpaired dorsomedian teeth on the abdomen (Fig. 47) and the male palp (Fig. 45) and epigyne (Fig. 46).
*Description:* The species has been well described by Roberts (1978).
*Distribution:* This endemic species has been found on Mahé (Roberts 1978) and Silhouette (Simon 1898: *Moneta spiniger*).

**Genus *Nanume* n. gen.**
Type species *Theridion naneum* Roberts, 1983 from Seychelles.
*Diagnosis:* The genus is characterized by the colourless lateral eyes (Fiog. 50). Also the male and female copulatory organs apparently are diagnostic (Figs. 48 and 49)

***Nanume naneum*** (Roberts, 1983) **n. comb. (**Figs. 48-50)
*Theridion naneum* Roberts, 1983: 231, f. 56-61 (Dmf).
*Specimens examined:* Cousin, sweeping, 1f, March 2000, coll. BirdLife (MZT AA 1.941)
*Diagnosis:* This very pale colored small species (TL=1.1-1.4) is easily recognized by the colourless lateral eyes, dark coloured median eyes form a regular square (Fig. 50).
*Description:* Well described by Roberts (1983).
*Distribution:* Aldabra (Roberts 1983) and Cousin.




Figs. 45-47. *Moneta coercervus* (Roberts, 1978). – 45: Male palp ventrally. – 46: Epigyne ventrally. – 47: Male laterally. – Scale bars: Figs 45, 46 = 0.2 mm, Fig. 47 = 0.5 mm. – Orig.

**Genus *Nesticodes*** Archer, 1950

*Nesticodes* Archer, 1950: 22. - Type species by original designation and monotypy *Theridion rufipes* Lucas, 1846 from Oran, Algeria;

Removed from the synonymy of *Theridion* Walckenaer, 1805 by Wunderlich, 1987a: 214, contra Levi, 1957a: 19.

*Diagnosis:* This monotypic genus is diagnosised by the peculiar epigyne consisting of a median conical elevation bearing on its anterior side the atrium equipped with large atrial lingua.

***Nesticodes rufipes*** (Lucas, 1846) (Figs. 51-54)

*Theridion rufipes* Lucas, 1846: 263, pl. 16, f. 5 (Df).

-*"*-, Simon 1898b: 271 (Dm).

-*"*-, F. O. P.-Cambridge 1902a: 384, pl. 36, f. 15-16 (mf).

*Theridion rufipes*, Levi 1957a: 56, f. 188-193 (mf).

-*"*-, Roberts 1978: 913, f. 20-26 (mf).

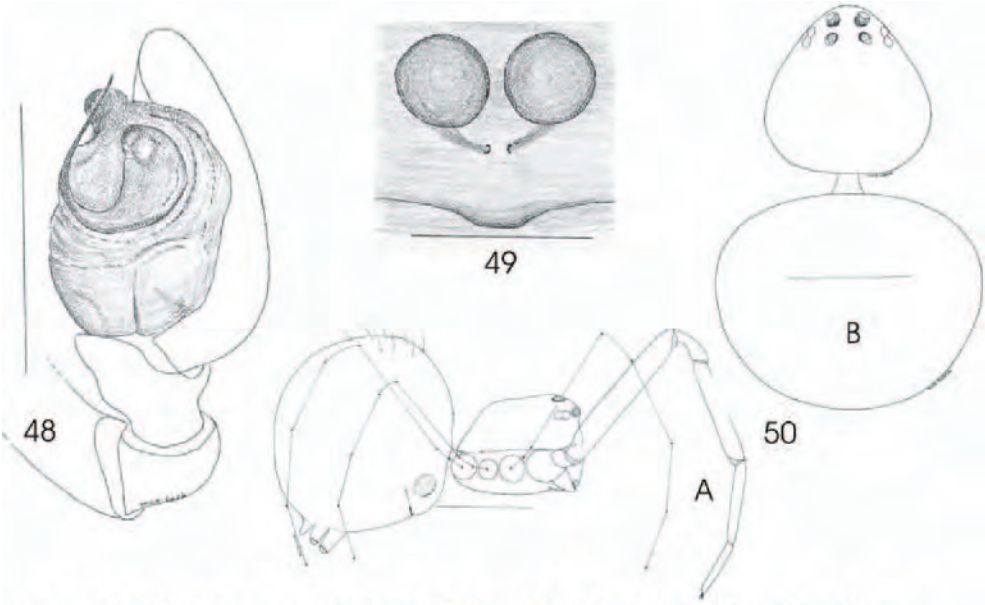
*Nesticodes rufipes*, Wunderlich 1987a: 215, f. 570 (mf).

-*"*-, Agnarsson 2004: 573, f. 58A-F, 59A-F (mf).

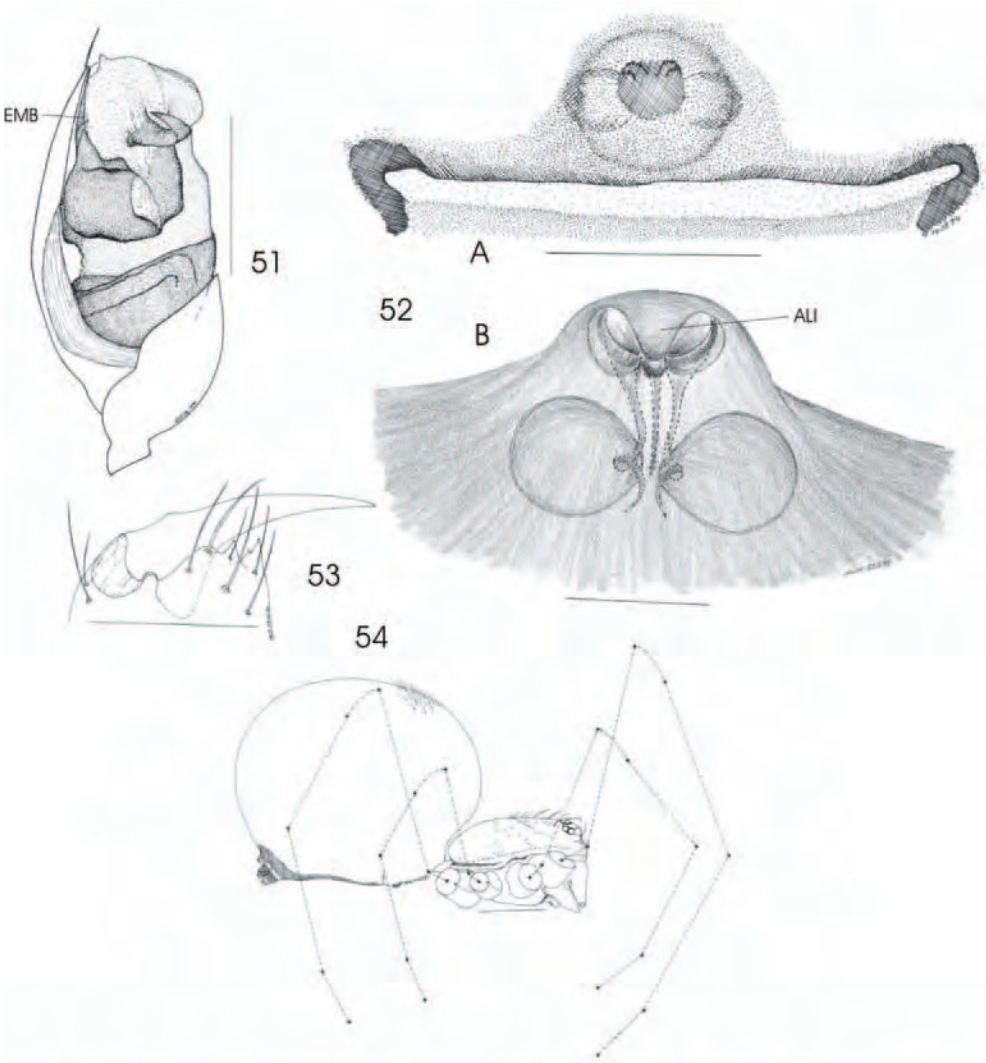
N.B. For more references see Platnick 2005.

*Specimens examined:* SEYCHELLES: Cousin. 1$, April 1978, Hugh Watkins leg. (MZT AA 0.225). SUDAN: Khartum, 1#4$$, 1964 (MRAC 133.722).

*Diagnosis:* Male easily recognized by the thin, anteriorly pointing embolus (Fig. 51) and female by the large median elevation on the epigyne (Fig. 52).




Figs. 48-50. *Nanume naneum* (Roberts, 1983). – 48: Male palp ventrally (redrawn from Roberts 1983). – 49: Epigyne ventrally. – 50: Female laterally (A) and dorsally (B). – Scale bars: Figs 48, 49 = 0.2 mm, Fig. 50 = 0.5 mm. – Orig.




Figs. 51-54. *Nesticodes rufipes* (Lucas, 1846). – 51: Male palp ventrally. – 52: Epigyne ventrally (A) and posteroventrally (B). – 53: Apical part of female chelicer. – 54: Female laterally. – Scale bars: Figs 52-53 = 0.2 mm, Fig. 54 = 1.0 mm. – Orig.

*Description:* Rather large species (TL of male = 2.8-3.7mm, of female = 4.2-5.3mm; LC of male = 1.3-1.7mm, of female = 1.6-2.2mm); virgin female about the same size as male but the abdomen of fertilized female really large, spherical. Cephalothorax and legs bright yellow-brown; abdomen grey, dorsally and laterodorsally with snow-white patches formed by guanine corpuscles, ventrally with broad longitudinal band starting behind epigastric furrow running backwards to surround the spinnerets; carapace and appendages orange brown (Fig. 66). Chelicerae with two anterior teeth, median one

with tiny subtooth, no posterior tooth. Legs rather long, relatively heavily built with one dorsal spine on patella and tibia. Female palpal claw comb-like. Abdomen fairly thickly covered with yellow brown hairs arising from narrowly sclerotized bright brown bases. Spinnerets and anal tubercle strongly chitinized; tracheal spiracle with narrowly chitinized edges. No dorsal stridulatory organ. No colulus.
*Distribution:* This is a very commom pantropical species (Platnick 2006) both in Old and New World which has not earlier been recorded from Seychelles. At the present, found only on Cousin.

**Genus *Parasteatoda*** Archer, 1946: 22: 38. - Type species by original designation *Theridium tepidariorum* C.L. Koch, 1841 from Germany (in greenhouses of the botanical gardens at the University of Erlangen!).
*Diagnosis*: Males with simplified palpus. There is no terminal apophysis; embolic complex and tegular apophysis basally fused together and connected with a common membranous stalk to the tegulum; conductor strongly developed, curved groove, attached to the tegulum by a membrane (Fig. 60 and 61). Epigynal atrium elliptical with shallow grooves leading to the entrance holes (Fig. 62).
Males small but not minute, one-third to two-thirds the size of the females. Stridulating apparatus of the male present as a partial lunate plate either side of the pedicel. Chelicerae non-geniculate.
*Discussion: Parasteatoda* was synonymized with *Achearanea* by Levi (1955). However, the secondary genital organs of these two genera are so different that *Parasteatoda* is herein revalidated.

***Parasteatoda mundula*** (L. Koch, 1872) **n. comb. (**Figs. 55-59)

*Theridion mundulum* L. Koch, 1872a: 263, pl. 22, f. 3 (Df).
*Theridion amoenum* Thorell, 1877b: 463 (Df).
"-, Workman 1896: 68, pl. 68 (f).
-"-, Hogg 1919: 83 (Dm).
*Achaearanea mundula*, Chrysanthus, 1963: 741, f. 76-77, 83 (Tmf from *Theridion*).
-"-, Roberts 1978: 913.
-"-, Zhu 1998: 100, f. 59A-C (f).
-"-, Song Zhu & Chen, 1999: 91, f. 40I-J (f).

*Specimens examined:* Mahé, no other data, 1$, (MRCA 136.896). (PAPUA NEW GUINEA, Central d., Goila subd., Avios, 1#, 19-20.02.1974, H. Hippa leg. (MZT AA 3.724) and Port Moresby, in vegetation, 1$11juvs, 10.10.1973, Jyrki Nieminen leg. (MZT AA 3.725)
*Diagnosis:* The male is recognized by the bulbous palp with a groove-like conductor enclosing the apical part of the whip-like embolus (Fig. 55). Epigyne of female with oval atrium with small entrance holes on its either sides.
*Description:* Carapace pale yellow with dark lateral bands (Fig. 57). Sternum yellowish with blackish posterior area. Colour pattern of abdomen complicated, dorsally with a brownish folium with darker edges (Figs. 58 and 59). Legs rather thick, annulated or

the apical parts of femur, tibia and metatarsus dark coloured as well as ventral side of patella. Fovea very low

*Distribution:* This is a paleotropical species found from India to New Caledonia (Platnick 2006). Only one female has been collected from Seychelles; Mahé (Roberts 1978)

*Discussion:* The species was originally described from a single female captured in the environs of Merauke, Indonesia New Guinea. In 1877 Thorell described another species, *Theridion amaenum*, also from a female and collected from Celebes. This species was later synonized by Thorell himself (1895) with *T. mundulum*. In 1963 Chrysanthus transferred *T. mundulum* to *Achaearanea* and described a new subspecies for it, e.g. *Achaearanea mundula papuana*, and again only the female was available. He also figured the vulva of all three above mentioned taxa. Of *A. mundula* he had at his disposal the holotype and of *A. amaena* (*amoena* by Chrysanthus) several specimens partly identified by Thorell. The vulva of the Seychellian specimen agree totally with that of the holotype of *A. mundula* (Chrysanthus 1963: Fig. 77). On the other hand, the vulvas of *A. amaena* and *A. mundula papuana* (Chrysanthus 1963: Figs. 83 & 82) which are practically identical differ considerably from that of *A. mundula*. It is probable that the type of *A. amaena* has been lost but assuming that Chrysanthus' (1963) figure represent a real *A. amaena* its synonymy with *A. mundula* must be rejected while *A. mundula papuana* is a junior synonym of *A. amaena*, **n. syn.** Chrysanthus (1963) also synonymized the Central American *Achaearanea tesselata* (Keyserling, 1884) with *A. mundula*. At present this synonymity is uncertain.

***Parasteatoda tepidariorum*** (C. L. Koch, 1841) (Figs. 60-63)

*Theridion tepidariorum*, C. L. Koch, 1841a: 75, f. 646-648 (Df).
*Achearenea tepidariorum*, Levi 1955a: 32, f. 69-70, 83-84 (mf).
-*"*-, Agnarsson 1996: 52, f. 35A-B (mf).

N.B. For more references see Platnick 2005.

*Specimens examined:* FINLAND: Joensuu, Botanical Garden, inside greenhouses, 2##2$$, 22.10.1987, M. Huttunen leg.

*Diagnosis:* Male of this large (TL=4.0-7.0), rather pale coloured species with heavily built annulated legs is easily recognized by the large conductor supporting the apex of embolus (Fig. 60) and the female by the elliptical atrium with shallow grooves leading to the entrance holes (Fig. 62).

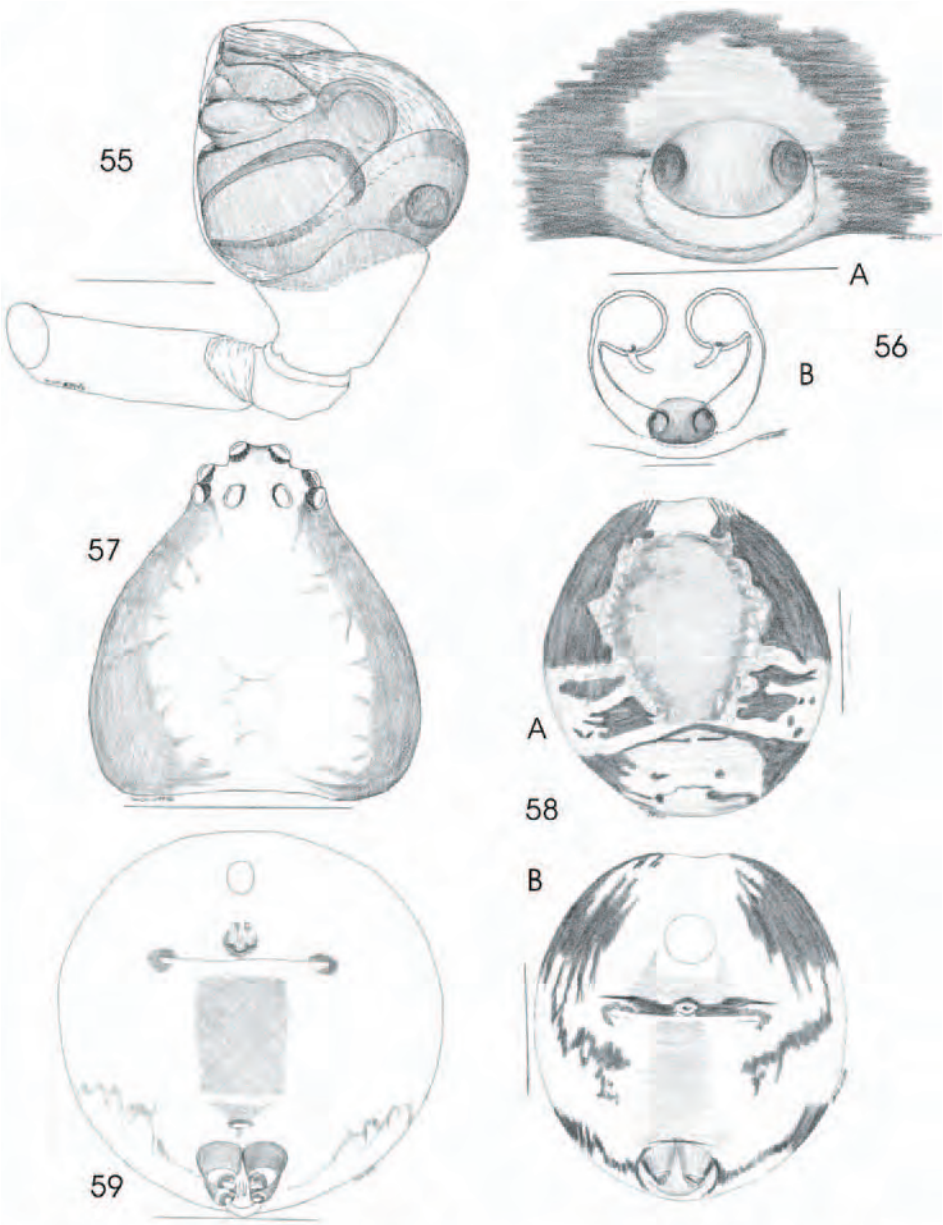
*Description:* The species has been well described by Locket & Millidge (1953).

*Distribution:* This is a cosmopolitan species associated with man. It has been once reported from the Seychelles, viz. from Mahé (Simon 1898).

**Genus *Robertia* n. gen.**

*Type species: Theridion braueri* Simon, 1898 from Seychelles.

*Diagnosis*: Male palp with volumnious somewhat cone-like conductor that has its edges slightly over lapping each other and enclosing the distal half of the simple whip-like embolic. Female epigyne with a relatively large tongue-like postiorly ponting median extension, openings of the entrance duct inside two shallow depressions immidiatelly anteriorly from the extension.




Figs. 55-59. *Parasteatoda mudula* (L. Koch, 1872). – 55: Male palp laterally (Papua). – 56: Epigyne (A) and adnexae (B) ventrally (Seychelles). – 57: Female carapace dorsally (Seychelles). – 58: Abdomen of female dorsally (A) and ventrally (B) (Seychelles). – 59: Abdomen of female ventrally (Papua). – Scale bars: Figs 55, 56 = 0.2 mm, Figs 57-59 = 1.0 mm. – Orig.

*Etymology*: The generic epithet is derived from the surname of Dr. Michael Roberts who has described several theritiids both from the granitic Seychelles and Aldabra. Gender feminine.

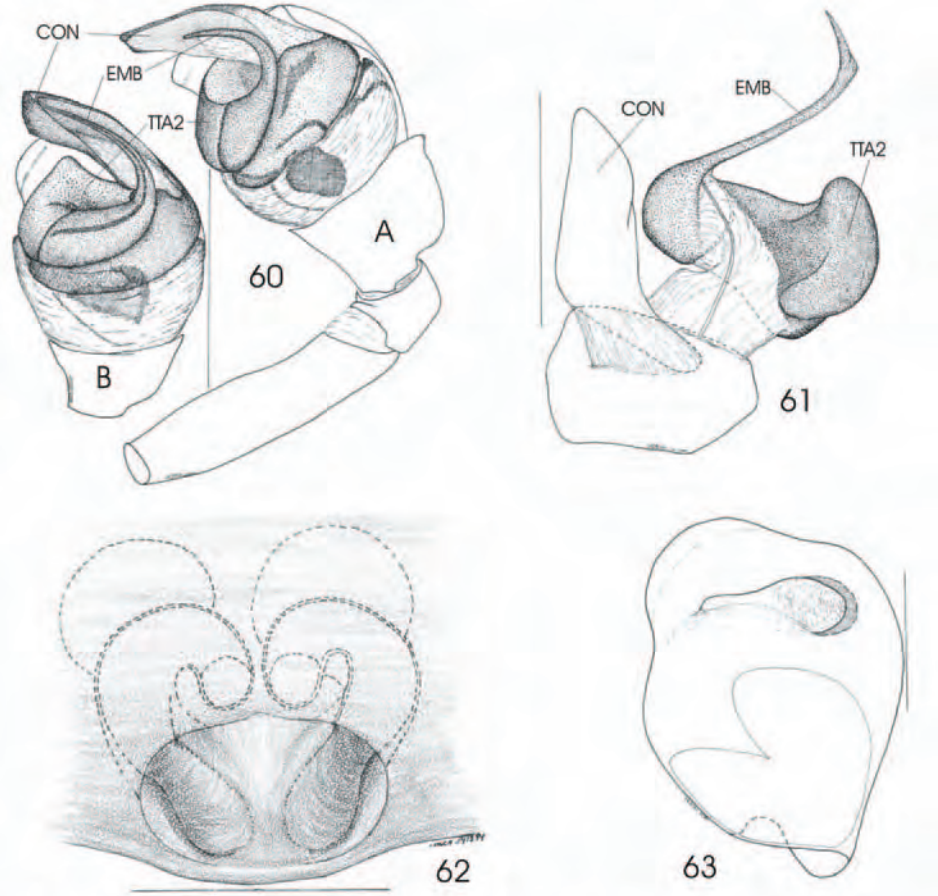
***Robertia braueri*** (Simon, 1898). **n. comb. (**Figs. 64-66)

*Theridion braueri* Simon, 1898d: 377, f. 1-2 (Dm).

*Theridion purifum* Roberts, 1978: 909, f. 15-19 (Df).

*Theridion braueri*, Saaristo 1999: 3 (= *purifum*).

*Specimens examined:* Mahé, Morne (330-390m elev.), 3##1$, 04.01.1958, W.D. Hartman leg. and various places, 1#7$$1subad.$2juvs 01-02.01.1999, M. Saaristo, P. Matyot and M. Kirkpatrick leg. (MZT AA 0.916-0.919); Silhouette, *Pisonia* forest 2$$



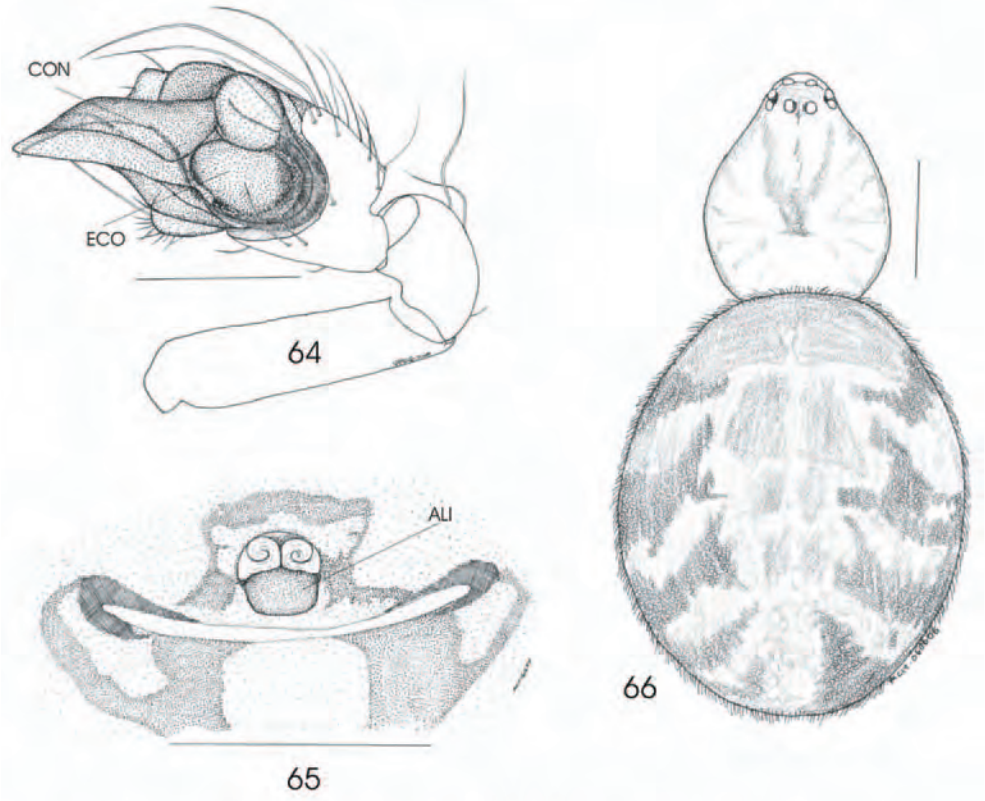

Figs. 60-63. *Parasteatoda tepidarioria* (C. L. Koch, 1841). – 60: Male palp ventrally (A) and anteroventrally (B). – 61: Apical part of bulbus treated with KOH dorsally. - 62: Epigyne and adnexae ventrally. - 63: Cymbium ventrally.– Scale bars: Figs. 60-62 = 0.5 mm, Fig. 63 = 0. 2mm. – Orig.

1juv., 1990, J. Gerlach leg. (MZT AA 0.221), Chemin Montagne Posee, 6##6$$, 09.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.911-0.913), and Jardin Marron, 4$$, 20.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.914 and 0.915).

*Diagnosis:* The male is easily recognised by the large, frontally pointing conductor (Fig. 64) and the female by the large swollen atrial lingua (Fig. 66).

*Description:* Female well described by Roberts (1973). Male quite similar but smaller and brighter coloured.

*Discussion:* Roberts (1978: 913) originally intented to describe his *purifum* in *Nesticodes* as he considered it to be close to the type species of that genus, viz. *Theridion rufipes* Lucas, 1846. After consulting the case with Prof. H.W. Levi he agreed that both species were best left in *Theridion*. In my mind neither of these two species are congeric with the type species of *Theridion*, viz. *Theridion pictum* (Walckenaer, 1802) nor are they conspecific with each other.




Figs. 64-66. *Robertia braueri* (Simon, 1898). – 64: Male palp laterally.– 65: Epigyne ventrally. – 66: Female dorsally. – Scale bars: Figs 64, 65 = 0.2 mm, Fig. 66 = 1.0 mm. – Orig.

*Distribution:* This is again another endemic species found on Mahé (Simon 1898, Roberts 1978: *Theridion purifum*, Saaristo 1999) and Silhouette (Saaristo 1999).

**Genus *Selimus* n. gen.**

*Type species: Theridion placens* Blackwall, 1877 from Seychelles.

*Diagnosis:* The genus is characterised by the complicated embolic complex bearing a thin spike-like embolus; also other tegular scleites more complicated as usual (Figs. 67-70). Epigyneal atrium very shallow roughly tringular, pointing posteriorly and bearing several transverse wrinkles (Fig. 71).

*Discussion:* While revising the genus *Anelosimus* Levi (1956a) transferred to this otherwise American genus also three European species; viz. *Theridion vittatus* C. L. Koch, 1836, *Theridion pulchellus* Walckenaer, 1836, and *Theridion aulicum* (C. L. Koch, 1838). As the male palp of the two first mentioned species and *Theridion placens* Blackwall, 1877 are very similar I (Saaristo 1978) transferred also it into *Anelosimus* though I at the same time doubt if these three species were congeneric with the type species of the genus, viz. *A. eximius* (Keyserling, 1884). Comparisons of the copulatory organs of *A. eximius* with *A. placens* have revealed that they are so different that *A. placens* can not be considered as congeneric with *A. eximius*. Therefore a new genus *Selimus* **n. gen.** is created including the following species: *Selimus placens* (Blackwall, 1877) **n. comb.**, and *Selimus locketi* (Roberts, 1983) **n. comb.**

Figs. 67-76.

***Selimus placens*** (Blackwall, 1877) **n. comb.** (Figs. 67-76)

*Theridion placens* Blackwall, 1877: 13, pl. 2, f. 10 (Dmf).

*Anelosimus placens*, Saaristo 1978: 118, f. 192-202 (Tmf from *Theridion*).

-*"-,* Roberts 1978: 918, f. 31-34 (mf).-"-, Roberts 1983: 240, f. 95-96 (f).

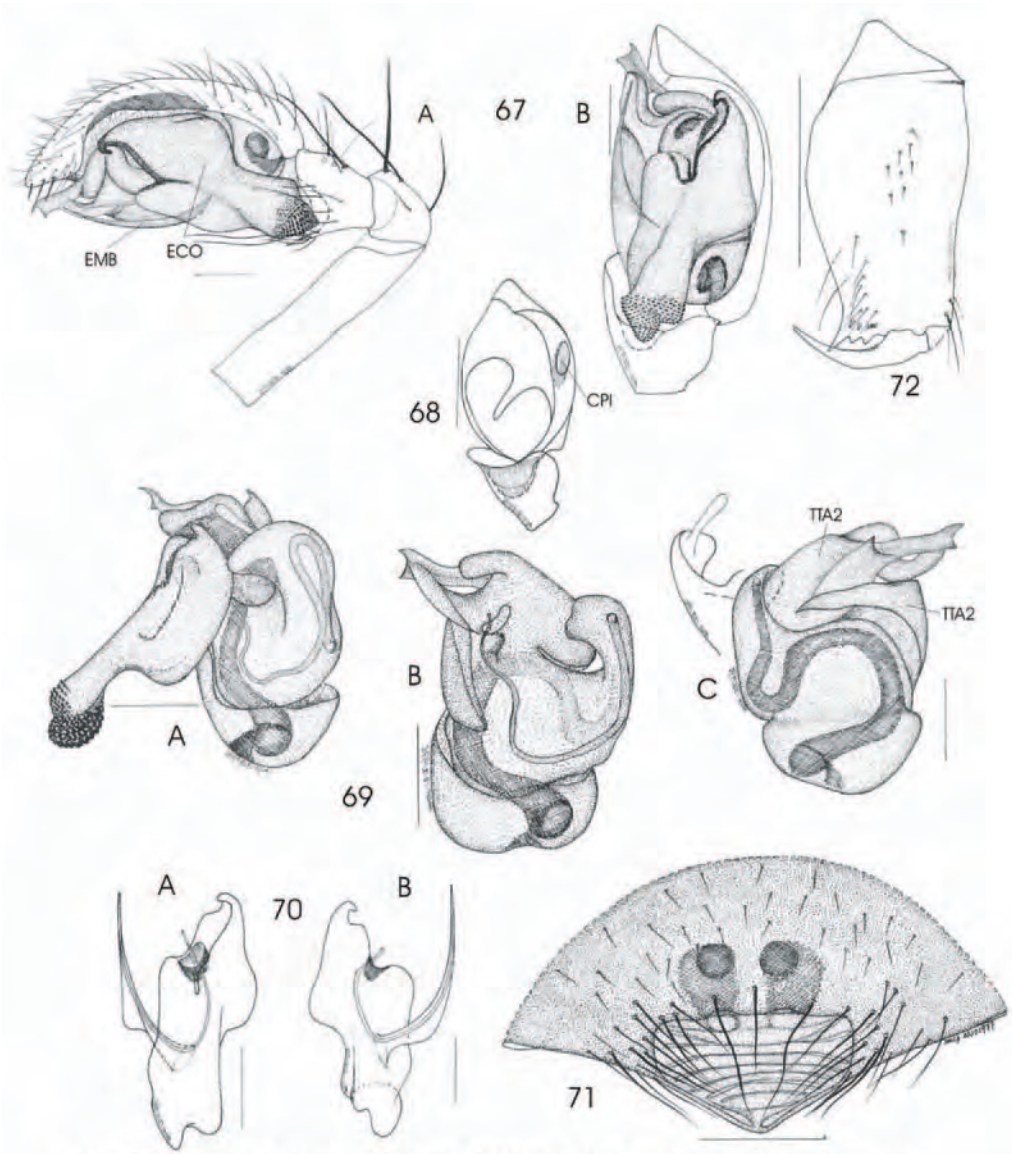
*Specimens examined:* Aride, 1#1juv., 1975, M. Mühlenberg leg. (MZT AA 0.222); Mahé: golf green of the Reef Hotel, 3##7$$, 24.10.1975, M. Saaristo leg. (MZT AA 0.038); Silhouette: La Passe, 3##14$$2juvs, 13-15.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.897-0.899), between Anse Lascars and Anse Patates, 1f2j., 12.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.900), Jard. Marron, 1$, Dec. 1993, J. Gerlach leg. (MZT AA 0.901).

*Comparative specimens examined: Anelosimus eximius*: FRENCH GUIANA: Cayenne Prov., Montagnes Kaw, nr. Camp Calman, ca 27 km SE Roura, 4.33N 52.09W, el. 100-300 m, 2##2$$, 8.VIII.1988, S. Marshall leg. (MZT AA 3.712). VENEZUELA, 1#6$$18juvs, 10.XII.1975, M. Stejskal leg (MZT AA 3.713 and 3.714)

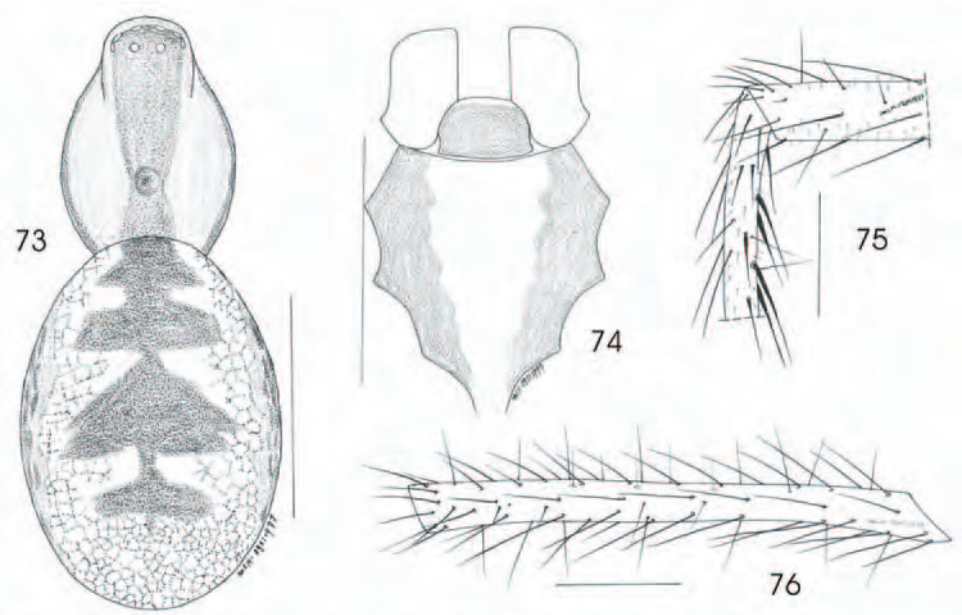
*Diagnosis:* This fairly large species is easily reconized by having on the dorsal side of the somewhat elongated abdomen a median blackish spruce-like band on white back ground (Fig. 73).

*Description:* Well described by Saaristo (1978) and Roberts (1978).

*Distribution:* This endemic species has been found on the following islands: Aride (Bowler *et al*. 1999), Curieuse (Roberts 1978), Mahé (Saaristo 1978, Roberts 1978), Praslin (Roberts 1978) and Silhouette (Saaristo 1999).




Figs. 67-72. *Selimus placens* (Blackwall 1887). – 67: Male palp laterally (A) and ventrally (B). – 68: Cymbium ventrally. – 69: Bulbus treated with KOH dorsolaterally (A), and with embolic part removed dorsally (B) and ventrally (C). – 70: Embolic complex dorsally (A) and ventrally (B). – 71: Epigyne ventrally. – 72: Male chelicher from behind. – Scale bars: Figs. 66-71 = 0.2 mm, Fig. 72 = 0.5 mm. – Orig.




Figs. 73-76. *Selimus placens (*Blackwall 1887). – 73: Female dorsally. – 74: Female Maxillae, labium and sternum ventrally. – 75: Tip of tibia and proximal part of metarsus of male leg I laterally. – 76: Lateral view of female TiI. – Scale bars = 0.5 mm. – Orig.

**Genus *Sesato* n. gen.**

*Type species: Sesato setosa* **n. sp.**

*Diagnosis:* This monotypic genus is characterized by the outstanding, spindle-like terminal apophysis exceptionally large cymbial pit. Also the long medially directed spines on ventral side of male femur I may be diagnostic. Epigyneal atrium very small, circular and shallow.

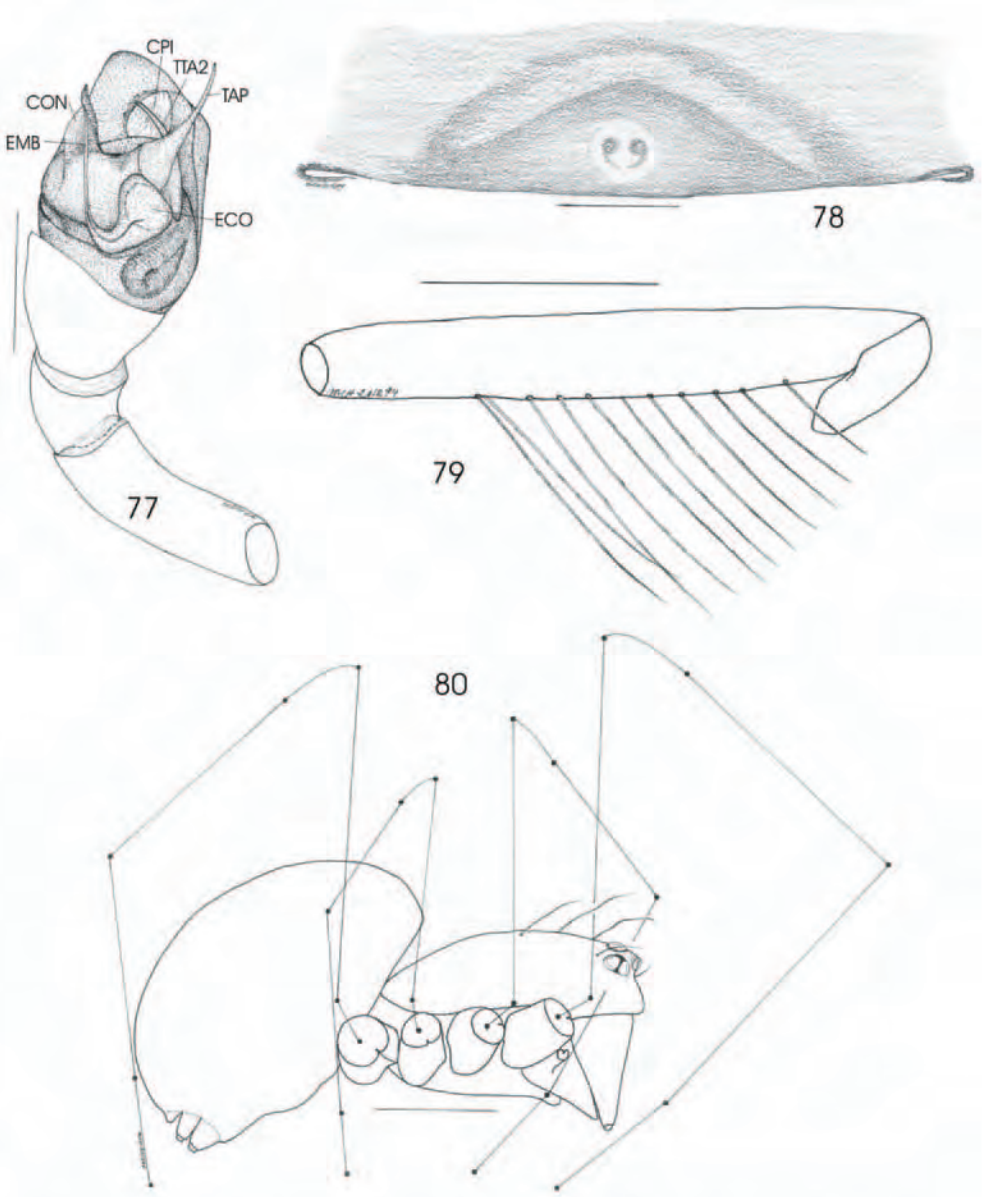
***Sesato setosa* n. sp. (**Figs. 77-80)

*N. gen., n. sp.*, Gerlach *et al*. 1997

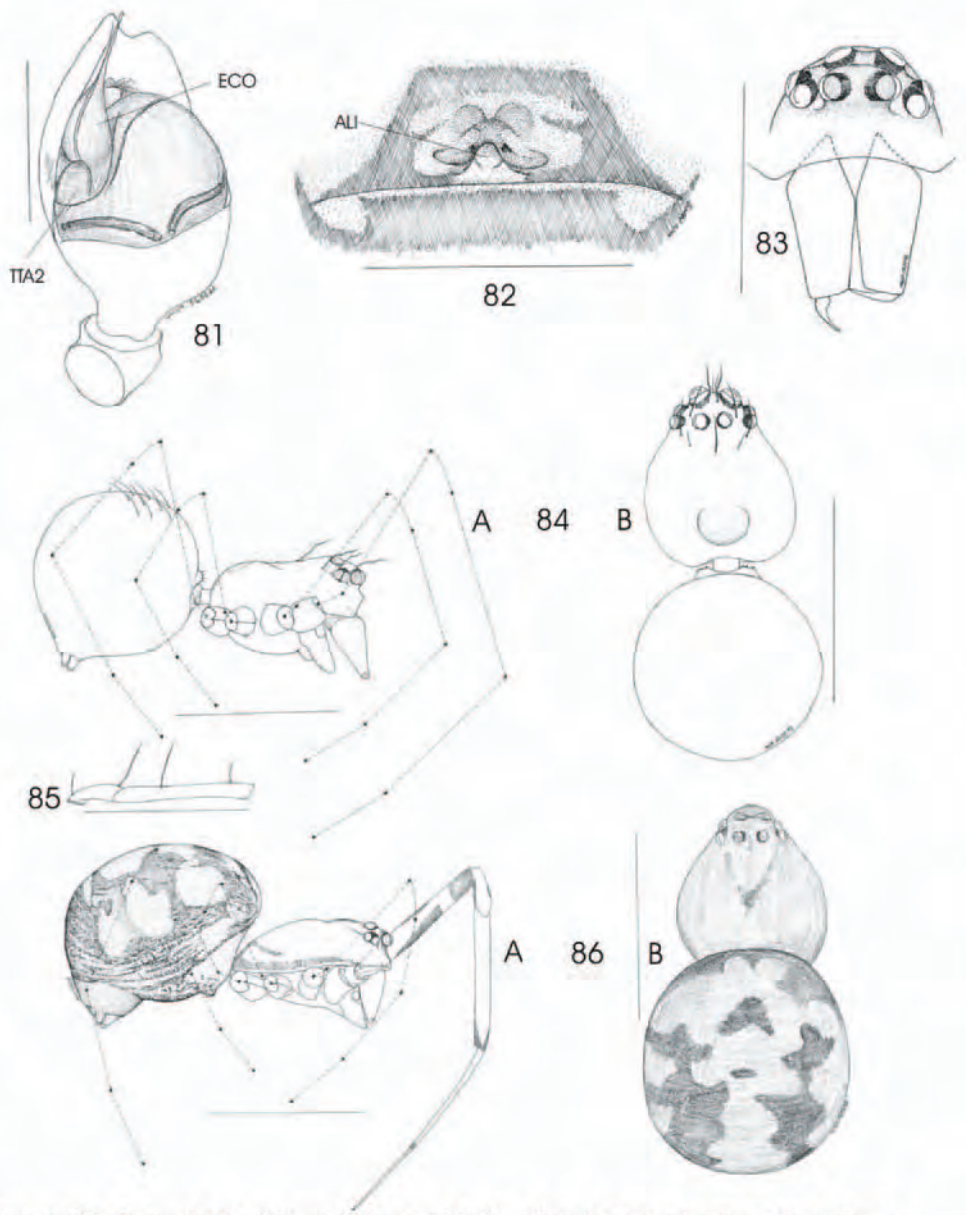
*Genus ign., G. sp. ign.*, Saaristo 1999

*Types:* Holotype male and allotype female from Silhouette, *Pisonia* forest, 1990, Justin Gerlach leg. (MZT AA 0.223/T5). Paratypes: La Passe, 4##4$$, 21.01.1999, M. Saaristo leg. (MZT AA 0.902), La Passe, 1$, 11.01.1999, M. Saaristo leg. (MZT AA 0.903), La Passe, 1#, 12.01.1999, M. Saaristo leg. (MZT AA 0.904), and Anse Lascars, 1$, 12.01.1999, M. Saaristo leg. (MZT AA 0.905).

*Diagnosis:* The male of this rather dull coloured species is easily recognised by the row of long thin apically pointing macrosetae on the ventral side of femur I (Fig. 79). The female may be distinguished by the pale median circular area enclosing a pair of dark, comma-like figures (Fig. 78).




Figs. 77-80. *Sesato setosa* n. sp. - 77: Male palp ventrally. – 78: Epigyne ventrally. – 79: Fel of male mesially. – 80: Female laterally. – Scale bars: Figs 77, 78 = 0.2 mm, 79, 80 = 0.5 mm. – Orig.




Figs. 81-86. *Spinembolia clabnum* (Roberts, 1978). – 81: Male palp laterally. – 82. Epigyne ventrally. – 83: Male carapace frontally. – 84: Male laterally (A) and dorsally (B). – 85: Patella and Til of male. – 86: Female laterally (A) and dorsally (B). – Scale bars: Fig. 81 = 0.2 mm, Figs 82, 83 = 0.5 mm, Figs 84.86 = 1.0 mm. – Orig.

*Description:* This is a mediun sized species (TL=1.65-1.86, CL=0.78-0.98). Carapace yellow-brown with a darker area behind the eyes, a few dark streaks radiating from that area toward with black suffused edges. Legs light ferruginous; all segments except tarsi suffused with black especially at apices. Chelicerae, maxillae, labium and sternum brown suffused with black. Abdomen blackish. Carapace fairly flat, abdomen globose, relative sparsely clothed with fairly long, curved hairs; on well elevated bases. Eyes moderate large, more or less equal in size. Chelicerae with two teeth, median one with small subtooth. No colulus. Male withdorsal stridulatory organ and long medially directed spines on ventral side of femur I. Male palp with all four tegular sclerites (Fig. 77).

Female (Fig. 80) much like male but slightle larger. Epigyneal atrium conspicuosly small and shallow with apair of dark, comma-like figures.

*Distribution:* This may be an endemic species and so far found only on Silhouette.

**Genus *Spinembolia* n. gen.**

*Type species: Theridion clabnum* Roberts, 1978 from Seychelles.

*Etymology:* Generic epithet refers to the spine-like apical part of the embolic complex. Gender feminine.

*Diagnosis*: This monotypic genus is characterized by the peculiar embolic complex consistying of a bulbous basal part and spine-like apical part (Fig. 81). Epigyne with a thick, anteriorly anteriorly pointing atrial lingua (Fig. 82)

***Spinembolia clabnum*** (Roberts, 1978) **n. comb. (**Figs. 81-86)

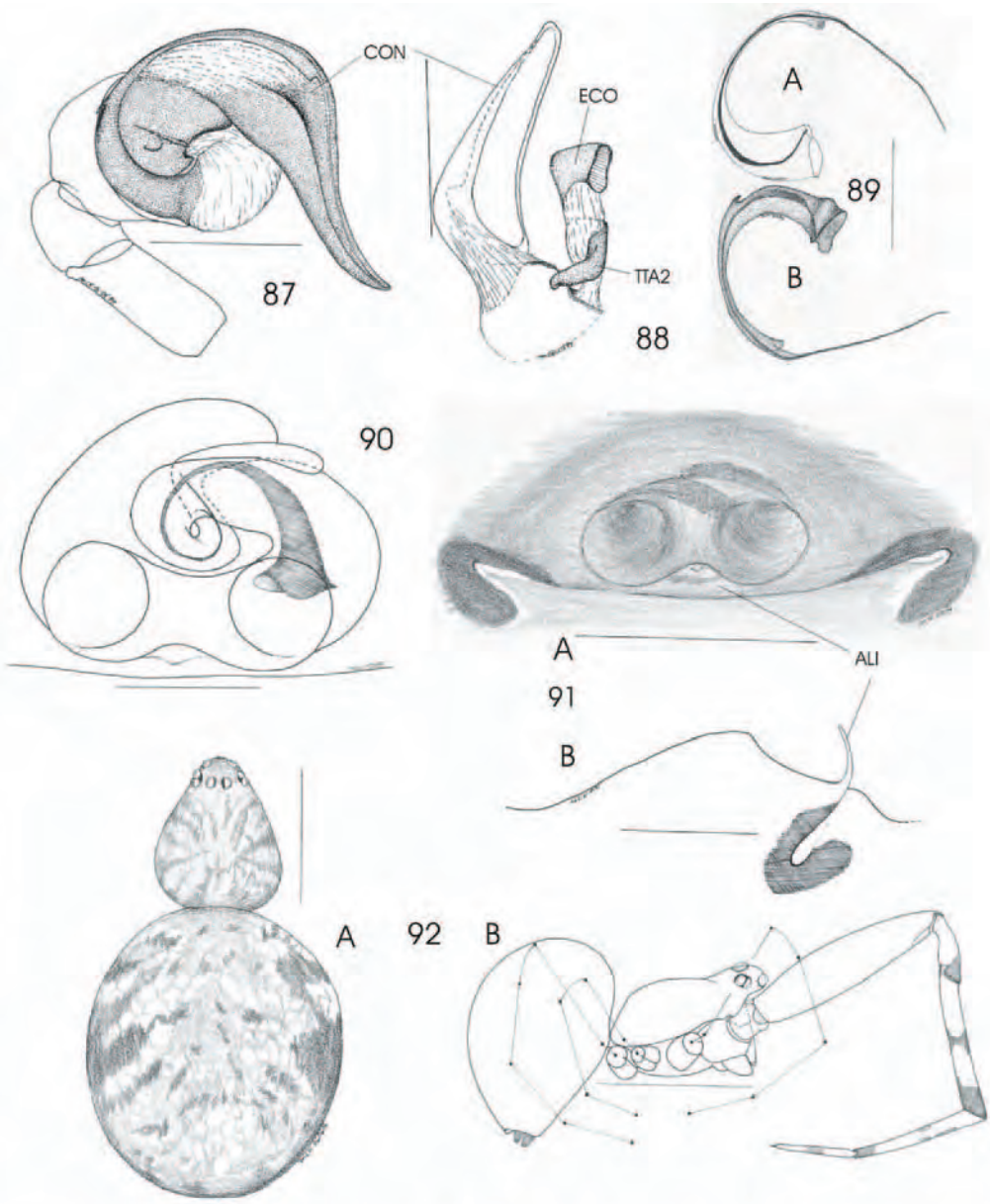
*Theridion clabnum* Roberts, 1978: 908, f. 10-14 (Df).

*Specimens examined:* Aride, 1#, 18.08.1975, M. Mühlenberg leg. (MZT AA 0.224 and litter sampling, 1$, July-November 2000, John Bowler leg. (MZT AA 2.138); Conception, pitfall, 1$, 25.09. 1999, coll. BirdLife leg. (MZT AA 1.954); Cousine, 2##11$$22juvs, 25.01.1999, M. Saaristo leg. (MZT AA 0.840 and 0.841); Curieuse, pitfall, 1#, 12.01.2000, coll. BirdLife leg. (MZT AA 1.958); Denis, pitfall, 2$$3juvs, 12.04.2000, coll. BirdLife leg. (MZT AA 1.956-1.957); Felicite, pitfall, 1$, 14.11. 1999, coll. BirdLife leg. (MZT AA 1.955); Grande Soeur, 2##, 17.09.1975, M. Mühlenberg leg. (MRAC 177.100 and 177.124); Mahé, Anse Louis, paratype female of *Theridion clabnum*, June 1972, P.L.G. Benoit & J.J. van Mol leg. (MRAC 143.320) and 7##3$$, 01-02.01.1999, M. Saaristo, P. Matyot and M. Kirkpatrick leg. (MZT AA 0.842-0.845); North, 2##6$$, 30.07.2000, J. Gerlach leg. (MZT AA 1.394) and by pitfalls, 2##2$$2juvs, 1999-2000, coll. BirdLife leg. (MZT AA 1.959-1.964); Praslin, Vallée de Mai, two paratype females of *Theridion clabnum*, July 1972, P.L.G. Benoit & J.J. van Mol leg. (MRAC 150.207); Silhouette, various places, 23##77$$8juvs, 07-23.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.816-0.839) and Belle Vue, (pitfall traps), 1#., 16-20.07.1999, J. Gerlach leg. (MZT AA 1.306), Jardin Marron, 10 pitfalls, 1#1subad.#, 08.07-09.08.2000, J. Gerlach leg. (MZT AA 1.393), Pisonia forest, sweep netting, 1$, 06.07.2000, J. Gerlach leg. (MZT AA 1.395), and Mon Plaisir, *Dracaena reflexa* crown, 1$, 10.07.2000, J. Gerlach leg. (MZT AA 1.396)

*Diagnosis:* The male is easily recognized by the the peculiar embolic complex consistying of a bulbous basal part and spine-like apical part (Fig. 81) and the female by the blunt-tipped light coloured anteriorly pointing atrial lingua immidiatelly before the epigastric furrow (Fig. 82).
*Description:* This is a medium sized species (TL=1.6-2.0, CL=0.74-0.76), length of carapace in both sexes about the same but gravid females somewhat larger than males. Carapace and sternum pale yellow suffused with black; chelicerae, maxillae and labium yellow-brown; legs and palpi pale yellow; dorsal abdominal colour pattern distinct similar in both sexes see fig. All patellae and tibiae with two dorsal spines; longest in tibia I (Fig. 85). Clypeys fairly high, slightly protruding medially in male (Fig. 84A). Chelicerae toothless; eyes relatively large, all about the same size (Fig. 83). Fovea notably large, very shallow, almost circular (Fig. 84B). Petiolar stridulatory organ present in male. Abdomen globular with distinct colour pattern (Fig. 86). No colulus. Tegular sclerites much simplified
*Distribution:* This possibly endemic species has been found on Aride (Bowler *et al.* 1999), Conception (Saaristo & Hill 2002), Cousine (Saaristo 1999), Curieuse (Saaristo & Hill 2002), Denis (Saaristo & Hill 2002), Felicite (Saaristo & Hill 2002), Grande Soeur, La Digue (Roberts 1978), Mahé (Roberts 1978), North (Saaristo & Hill 2002), Praslin (Roberts 1978) and Silhouette (Saaristo 1999).

**Genus *Stoda* n. gen.**
*Type species: Theridion libudum* Roberts, 1978 from Seychelles.
*Diagnosis:* Male palpus of the same simplified type as in *Parasteatoda*. It differs in having a special breaking point for the embolus. Bases of embolic complex and tegular apophysis connected by a membrane with each other and with a common membrane to tegulum; conductor considerably large (Figs 87-89).
*Discussion:* It is quite obvious that the breaking of embolus prevents additional pairing. The phenomen is not uncommen among spiders. During copulation the embolus is cut loose at the breaking point and left inside the vulva (Fig.90). In a sample of 14 females all individuals had the embolus inside both halves of the vulva.

***Stoda libudum*** (Roberts, 1978) **n. comb**. (Figs. 87-92)
*Theridion libudum* Roberts, 1978: 905, f. 5-9 (Df).
*Specimens examined:* Mahé: 3##11$$, 01. and 02.01.1999, M. Saaristo, P. Matyot and M. Kirkpatrick leg. (MZT AA 0.813-0.815); Silhouette, sweep netting *Pisonia*, 3##16$$1juv., 1990, J. Gerlach leg. (MZT AA 0.217-0.220) and Chemin Montagne Posee, 1subad.#6$$, 09.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.808-0.810), Jardin Marron, 2$$, 13. and 20.01.1999, M. Saaristo and J. Gerlach leg. (MZT AA 0.811-0.812); North, marsh edge, *Heliotropium* sweep netting, 1f2juvs., 30.07.2000, J. Gerlach leg. (MZT AA 1.397).
*Diagnosis:* The male is easily recognised by the large, grooved beak-like conductor and the female by oval shaped atrium with a thin atrial lingua and large openings on the entrance ducts (Figs 90 and 91).




Figs. 87-92. *Stoda libudum* (Roberts, 1978). – 87: Male palp laterally. – 88: Apex of bulbus treated with KOH and embolus removed. – 89: Embolus dorsally (A) and ventrally (B). 90: Adnexae dorsally with embols inside.– 91: Epigyne dorsally (A) and laterally (B). – 92: Female dorsally (A) and male laterally (B). – Scale bars: 87-91 = 0.2 mm, Fig. 92 = 1.0 mm. – Orig.

*Description:* Total length: m=1.80mm, f=3.75mm; length of carapace: m=0.96mm; 1.51mm; male decidedly smaller than female, dward-like compared with gravid female. Male carapace yellowish brown, heavily suffused with black that of femele dark brown. Chelicerae, maxillae, labium and sternum yellow – pale brown, more or less suffused with black. Legs pale yellow annulated with grey-black; metatarsi and tarsi more orange in colour. Abdomen with a complicated pattern of dirty white and black stripes and patches; here and there on dirty white areas snow white guanine corpuscles; in addition females with reddish/reddish-brown area dorsally. Abdomen rather densely clothed with fairly long curved hairs standing on small well chitinized basal plates. Ocular area of male strongly projecting forward, that of female only slightly (Fig. 92). Fovea roundish, very shallow. Legs thick and robust; first legs much bigger than the others. Male abdomen long ovoid, that of female more globular. Chelicerae with two teeth on anterior margin. No colulus present.
*Distribution:* This endemic species has been found on Mahé (Roberts 1978, Saaristo 1999 as *Theridion libudum*), Silhouette (Roberts 1978, Saaristo 1999 *Theridion libudum*) and North.
*Discussion:* Roberts (1978) placed this species with some hesitation in *Theridion* because he had only females in his disposal. Discovery of males have made it possible to asses that it is not congeneric with the type species of *Theridion*, viz. *Theridion pictum* (Walckenaer, 1802), but fairly close to *Parasteatoda*. However, a new genus is created to emphasise the peculiar mode of breaking the embolus during copulation to plug the entrance tube of the female epigyne.

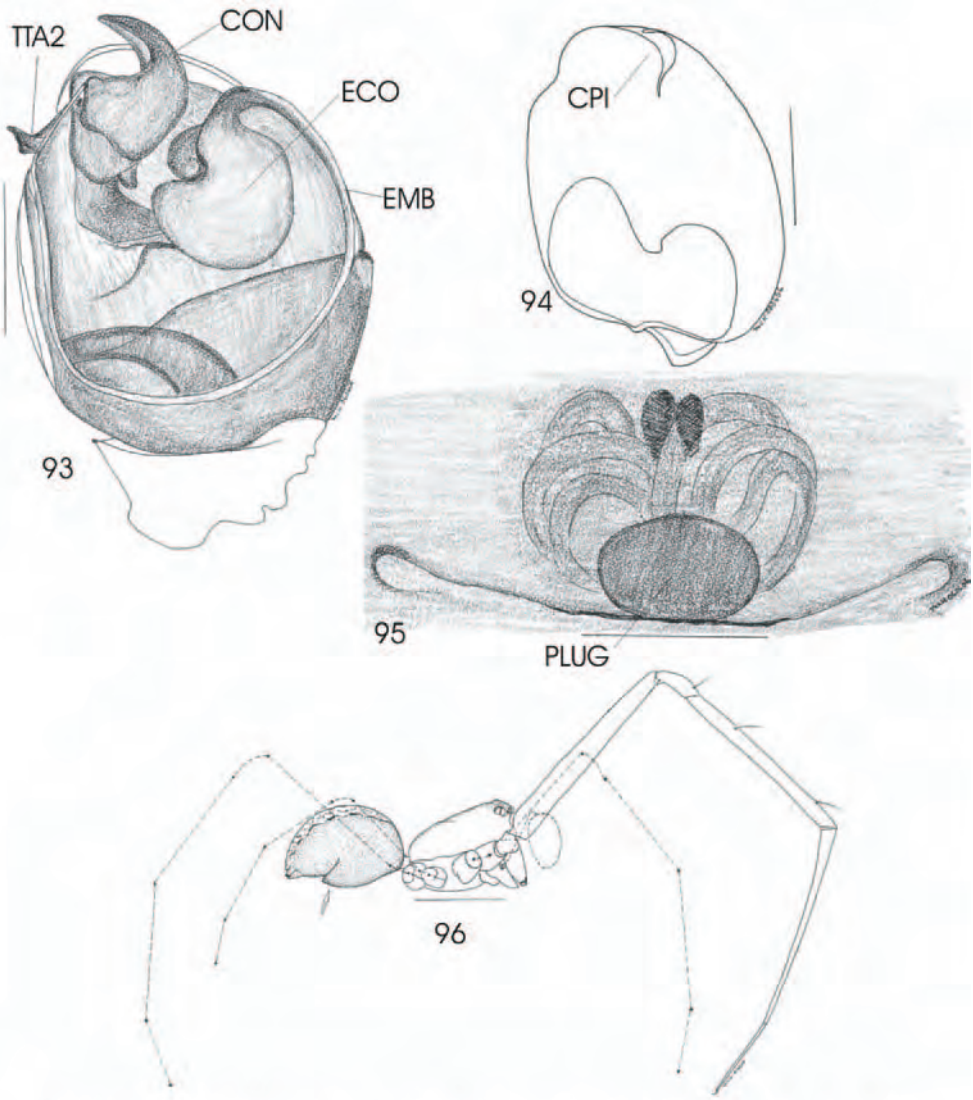
**Genus *Theridion*** Walckenaer, 1805
*Theridion* Walckenaer, 1805: 72. - Type species designated by Int. Comm. Zool. Nomencl., Opinion 517, 1958 as *Aranea picta* Walckenaer, 1802 from Europe.
*Diagnosis:* Male with a ventral, posteriorly thickening swelling epigastric area (Fig. 96, arrow). Base of embolic complex roughly circular disc with a small crooked basal extension, embolus proper long, filiform. Entrance openings of epigyne inside a spherical or oval atrium.

***Theridion melanostictum*** O. P.-Cambridge, 1876 (Figs. 93-96)
*Theridion melanostictum* O. P.-Cambridge, 1876b: 570 (Df).
*Theridion scorinum* Roberts, 1983: 233, f. 66-74 (Dmf).
*Theridion melanostictum*, Levy & Amitai 1982: 99, f. 32-37 (mf).
-*"-,* Yoshida, 2003a: 75, f. 178-181 (mf = *scorinum*).
N.B. For more references see Platnick 2006.
*Specimens studied:* Cousine, in house, 1$, 23.07.1995, O. Bourquin leg. (MZT AA 2.144); Silhouette, La Passe, 1#8$$, 11-15.01.1999, M. Saaristo & J. Gerlach leg. (MZT AA 0.906.-0.909).
*Diagnosis:* The male is easily recognised by its volumnious palp with finger-like pointing basal part of the tegular apophysis and the large beak-like conductor (Fig. 93) and the female by the usually pluged epigyne, long coiled entrance tubes and black

coloured elongated receptaculae (Fig. 95).

*Description:* Well described e.g. by Levy & Amitai (1982) and Roberts (1983 as *Theridion scorinum*).

*Distribution:* This is a widely distributed found from Mediterranean, Aldabra, China, Japan, USA, Hispaniola (Platnick 2005). On the granitic Seychelles islands found on Cousine and Silhouette (Saaristo 1999 as *Theridion scorinum*).

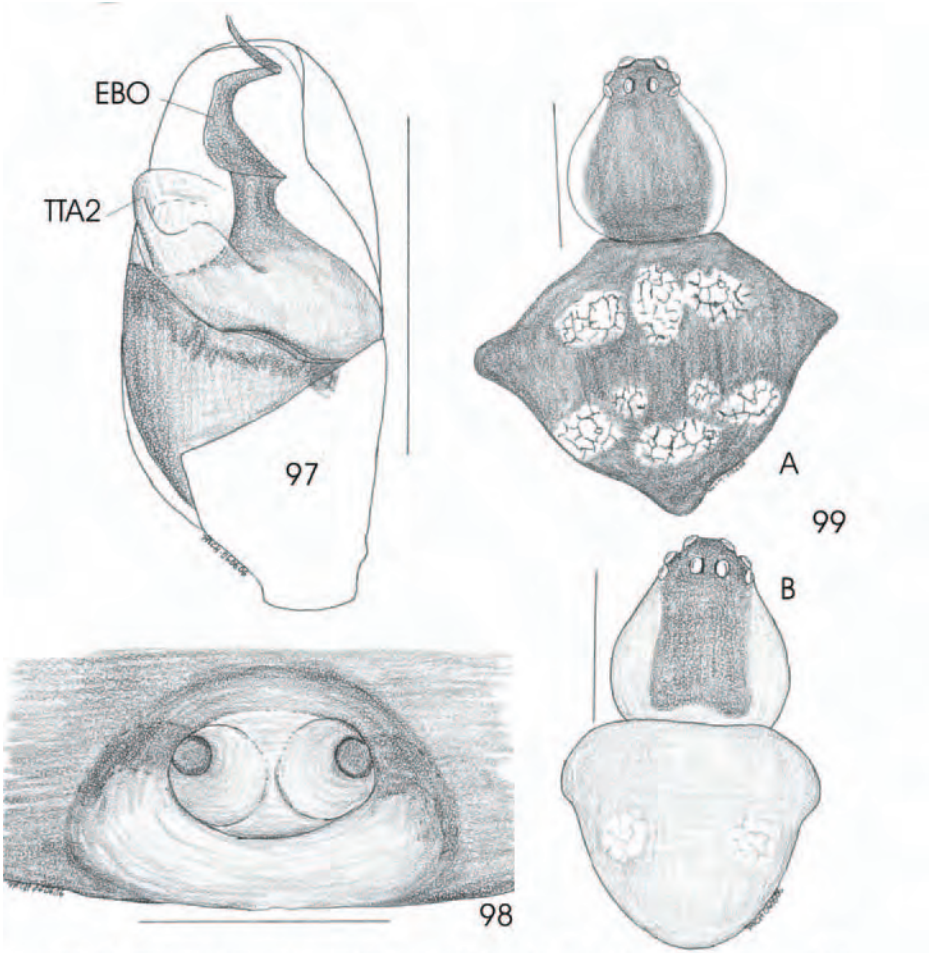



Figs. 93-96 *Theridion melanostictum* O. P.-Cambridge, 1876. – 93: Male palp laterally. – 94: Cymbium ventrally. – 95: Epigyne ventrally lightly treated with KOH. – 96: Male laterally. – Scale bars: 93-95 = 0.2 mm, 96 = 1.0 mm. – Orig.

**subfamily Theridulinae** Archer, 1950

*Diagnosis:* Tegular sclerites much reduced consisting only of the embolic complex and the theridiid terminal apophysis which has been modified to a membranous tube firmly attached to a circular area on the inner side of the cymbium (Fig. 97).

**Gen. *Theridula*** Emerton, 1882
*Theridula* Emerton, 1882: 25. - Type species by subsequent designation (Simon 1894: 545) *Theridion sphaerula* Henz, 1850 from USA = *Theridion opulentum* Walckenaer, 1841 from USA (Simon 1894: 545).




Figs. 97-99. *Theridula gonygaster* (Simon, 1881). - 97: Male palp ventrallyally. – 98: Epigyne ventrally. - 99: Female dorsally from Cousin (A) and Aldabra (B). – Scale bars: 97, 98 = 0.2 mm, 99 = 0.5 mm. – Orig.

***Theridula gonygaster*** (Simon, 1881) (Figs. 97-99)

*Theridion gonygaster* Simon, 1873a: 292, pl. 2, f. 24 (Dmf).
-"-, Levi 1967c: 176, f. 5-8 (mf).
-"-, Brignoli 1969: 262, f. 2-3, 6 (f).
-"-, Roberts 1983: 227, f. 36-37 (mf).
-"-, Chikuni 1989: 40, f. 50 (f).
-"-, Zhu 1998: 75, f. 43A-D (mf).
-"-, Song Zhu & Chen, 1999: 148, f. 83H-J (mf).
-"-, Melic 2000: 49, f. 1-4 (f).

N.B. For more references see Platnick 2005.

*Specimens examined:* Aldabra, Pickard, 3##3$$, 1974-1975, R. Prys-Jones leg. (MZT AA 2.475), Cousin, swept from Rangoon creeper, 1$1juv., 12.04.1978, Hugh Watkins leg. (MZT AA 0.226).

*Diagnosis:* This small species (TL=1.7-2.5mm) is usually easily recognized by its pale colouration contrasted by the wide dark band on dorsal side of the carapace (Fig. 99A). However there seem to be two colour morphs of females as in addition to the pale form there is a very dark form which also usually have the lateral and posterior sides of the abdomen characteristically bulged (Fig. 99A). Also the copulatory organs are distinct (Figs. 97 and 98).

*Description:* Well described by Levi (1954, 1967).

*Distribution:* This is a pantropical species (Platnick 2006) which is new to the granitic Seychelles islands. So far found only on Cousin and from Aldabra (Roberts 1983).


## Acknowledgements

I am greatly indebted to Dr. R. Jocqué, Musée Royal de l'Afrique Centrale, Tervuren (MRAC) and his family for their hospitality during my research visit in Tervuren. Many thanks are also due to the following persons who kindly helped me during my visit to Seychelles in 1999: Dr. Justin Gerlach, Mr. and Mrs Ron and Gill Gerlach, Mr. Pat Matyot, Dr. Maureen Kirkpatrick, Mr. Peter Hitchins and Mrs. Stella Hitchins. I am grateful for the large and important spider collection sent to me and collected by Dr. Michael Hill and colleagues as part of the project Management of Avian Ecosystems in the Seychelles. It is also my pleasure to thank the following persons for interesting and valuable spider samples from Seychelles: Dr. J. Gerlach, Dr. J. Bowler, Mr. P. Matyot and Mrs. S. Hitchins.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