

TAXONOMIC NOTES ON JUMPING SPIDERS FROM THE CAPE VERDE ISLANDS (ARANEAE: SALTICIDAE)

WANDA WESOŁOWSKA *

With 39 figures

ABSTRACT. Redescription of the genus *Luxuria* WESOŁOWSKA, 1989 is presented, “*Baryphas*” *dubius* WESOŁOWSKA, 1989 is synonymized with *Luxuria lymphatica* WESOŁOWSKA, 1989. *Salticus lepidus* BLACKWALL, 1865 is replaced to the genus *Luxuria* and redescribed. Description of *Pellenes vanharteni* sp. n., and redescription of *Phlegra bifurcata* SCHMIDT, GEISTHARDT et PIEPHO, 1994 are presented, too.

KEY WORDS: Cape Verde Islands, Araneae, Salticidae, new species, redescritions.

RESUMO. A autora apresenta uma redescrção do género *Luxuria* WESOŁOWSKA, 1989. “*Baryphas*” *dubius* WESOŁOWSKA, 1989 é considerado sinónimo de *Luxuria lymphatica* WESOŁOWSKA, 1989. *Salticus lepidus* BLACKWALL, 1865 é redescrito e colocado no género *Luxuria*. São ainda fornecidas a descrção de *Pellenes vanharteni* sp. n. e a redescrção de *Phlegra bifurcata* SCHMIDT, GEISTHARDT et PIEPHO, 1994.

PALAVRAS CHAVE: Cabo Verde, *Aranea*, *Salticidae*, nova espécie, redescrção.

Dispersed data on the *Salticidae* from the Cape Verde Islands have been recently collated by SCHMIDT *et al.* 1994. Eleven species of jumping spiders, nine from them endemics, have been reported from the islands so far. This paper adds one new species to this list, at the same time synonymising another.

It is based on materials collected by A. van HARTEN, kept in the Musée Royal de l’Afrique Centrale (MRAC) at Tervuren, as well as, thanks to co-operation of Dr. Ch. ROLLARD, on materials from the collection of Muséum National d’Histoire Naturelle (MNHN) in Paris.

* Zoological Institute, Wroclaw University, Sienkiewicza 21, 50-335 Wroclaw, Poland

Genus *Luxuria* WESOLOWSKA, 1989type species: *Luxuria lymphatica* WESOLOWSKA, 1989

Second, closely related species is added to the hitherto monotypic genus. The genus is characterised by presence of apical row of bristles on prolateral surfaces of first femora (Fig. 5) and by structure of copulatory organs. Male palp with thin, long embolus encircling bulbus; with distinct process opposite the embolus base; rather narrow cymbium; single thin and long tibial apophysis with recurved tip. Epigyne rounded, with large crescent-like depression anteriorly, and two distinct pockets near epigastric furrow. Copulatory canals long, coiled. This genus is doubtless closely related to the afrotropical genera *Tusitala* PECKHAM et PECKHAM, 1902 and *Blaisea* SIMON, 1903. Body shape, and especially structure of copulatory organs, show many essential similarities, cheliceral dentition, however, differs among all three genera (Figs. 1-3). Elucidating the definite taxonomic relationships within this group will demand further study.

Luxuria lepida (BLACKWALL, 1865), comb. n.
(Figs. 8-9, 12-13, 16-17, 20)

Salticus lepidus BLACKWALL 1865: 83.

Menemerus marginellus SIMON 1883: 303.

Plexippus lepidus: BERLAND 1936: 81; DENIS 1944: 55.

Diagnosis. Closely related to *L. lymphatica*, but slightly larger. Male may be distinguished by details of palp structure: tibial apophysis more curved; embolus distinctly longer, its base nearer by top of cymbium (cf. Figs. 8-9 with Figs. 10-11). Female rather difficult to recognise, but epigynal pockets placed differently in relation to epigastric furrow (cf. Figs. 12-13 with Figs. 14-15), in some specimens pockets not well visible. Internal structure of epigyne easily distinguishable: size of their spermathecae and course of terminal part of seminal ducts differ (cf. Figs. 16-17 with Figs. 18-19).

Material: "Ins. Cap Vert" (without detailed data): coll. E. Simon, 1 male (probably type of *Menemerus marginellus*) (MNHN 5762); Santo Antão: Campo de Chão, 14.IX.1834, leg. M. Chevalier, 1 male, 1 female (MNHN), Ribeira da Garca, 19.IV.1984, leg. A. van HARTEN, 1 female, 1 imm. (MRAC).

Measurements [in mm] (male/female): Carapace: length 2.8/2.6, width 2.0/1.9, height 0.9/0.9. Eye field: length 1.2/1.1, width I 1.6/1.4, width III 1.7/1.6. Abdomen: length 2.7/4.1, width 1.5/2.6.

Description. Coloration as in *L. lymphatica* (see below), but slightly larger size. Three-four bristles apically on prolateral surfaces of first femora (like in *L. lymphatica*, see below). Palpal organ shown in Figs. 8-9, epigyne and its internal structures in Figs. 12-13 and 16-17.

Luxuria lymphatica WESOLOWSKA, 1989
(Figs. 4-7, 10-11, 14-15, 18-19, 21)

Luxuria lymphatica WESOLOWSKA 1989: 271-272.

Luxuria lymphatica: SCHMIDT, GEISTHARDT and PIEPHO 1994: 114.

"*Baryphas*" *dubius* WESOLOWSKA, 1989: 264-265, syn. n.

Hyllus dubius: SCHMIDT, GEISTHARDT and PIEPHO 1994: 113-114.

Diagnosis. See under *L. lepida*.

Material: Fogo: São Filipe, VIII.1934, leg. M. Chevalier, 1 male (MNHN), Curral Grande, 10.VIII.1934, leg. M. Chevalier, 1 female, Mosteiros, 24.VII.1934, leg. M. Chevalier, 1 male, 1 female (MNHN); São Tiago: São Jorge dos Orgãos, XII.1988, leg. A. van HARTEN, 2 males, 2 females (MRAC), II.1987, 1 female (MRAC), 25.VI.1988, 3 females (MRAC), in suction trap, 7.VIII.1987, 1 female (MRAC), Santa Cruz, 22.II.1984, 1 female (MRAC), Jaracunda, 16.II.1984, leg. J. Prinsen, 1 female (MRAC).

Measurements (male/female): Carapace: length 2.1/1.9, width 1.6/1.4, height 0.8/0.8. Eye field: length 0.9/1.0, width I 1.3/1.3, width III 1.4/1.4. Abdomen: length 2.1/3.1, width 1.3/2.0.

Description. Male. Carapace russet-brownish, eye field dark brown with metallic shine, near eyes black. Long brown bristles in vicinity of eyes. Clypeus covered with white hairs reaching also to carapace sides. Sides of abdomen covered with dense white hairs, orange-yellowish stripe medially; stripe sometimes irregular (Fig. 7). In some specimens white hairs on sides of abdomen well-worn, sides brownish then. Venter with broad longitudinal dark streak. Spinnerets beige. Legs orange, their lateral surfaces brown (especially of first and second pair). Leg hairs brown. Spines numerous, long. Three-four bristles (sensual organ?) apically on prolateral surfaces of first femora. Palpal organ as in Figs. 10-11.

Female. General appearance in Fig. 4. Carapace as in male. Abdomen light yellowish to dark beige, posteriorly always two distinct large black patches with central contrasting white dots (Fig. 6). Legs yellowish. Pronounced sensory bristles on first femora

(Fig. 5). Epigyne in Figs. 14-15, its internal structure in Figs. 18-19.

Remark. It seems that, *L. lepida* is limited to northern (Island Santo Antão) and *L. lymphatica* to southern islands (São Tiago, Fogo, Brava). Unfortunately, materials are often labelled only as “Cape Verde Islands”, so one cannot track the exact places of their collection. As the two *Luxuria* species were not distinguished by the earlier authors (e.g. BERLAND 1936, mentions differences between males from Santo Antão and Fogo, but includes both forms in *L. lepida*), it is necessary to verify all the earlier distributional records.

Pellenes vanharteni sp. n.
(Figs. 22-25)

Diagnosis. This species may be distinguished by coloration pattern and structure of palpal organ.

Material: Sal: Santa Maria, 16.VIII.1988, leg. A. van Harten, 1 male (holotype), 2 imm. (MRAC).

Measurements: Carapace: length 1.3, width 1.1, height 0.7. Eye field: length 0.6, width I 0.9, width III 1.1. Abdomen: length 1.2, width 0.9.

Description. Male. General appearance in Fig. 22. Very small spider. Cephalothorax rather convex, wider than abdomen, swollen, the widest about half of its length. Carapace dark brown, eye field black. Near anterior eyes long brown hairs; short adherent white hairs cover anterior part of eye field and form two longitudinal streaks behind eyes of row III. Clypeus with white hairs. Chelicerae brown, promargin with two teeth, retromargin with single tooth. Maxillae and labium brown. Sternum yellow. Abdomen yellowish-white with greyish-brown pattern (Fig. 22), ventrally light. Whole abdomen covered with sparse brown hairs. Legs of first pair slightly larger than remaining ones, third legs are distinguishable by very long femora (Fig. 22). First legs black, only dorsal surface of patellae lighter, second legs yellow with brown lateral surfaces, remaining legs pale. Leg hairs brown, few white scales on patellae of first legs. Palps light, only base of femora darker. Tibial apophysis straight, rather wide, bulbous (Figs. 23-24), embolus with accompanying membrane stretching on bristles (Fig. 25).

Female unknown.

Etymology. This species is dedicated to ANTONIUS van HARTEN, an entomologist and spider lover who has collected the type.

Pellenes sp.
(Figs. 26-29)

Material: São Tiago: São Jorge dos Orgãos, VIII.1988, leg. A. van HARTEN, 1 female (MRAC).

Measurements: Carapace: length 1.9, width 1.6, height 0.9. Eye field: length 0.9, width I 1.3, width III 1.5. Abdomen: length 2.1, width 1.5.

Description. Male unknown.

Female. Carapace dark, almost black, covered with scarce short white hairs, in vicinity of eyes long brown setae. Sternum, chelicerae and labium brown, maxillae brown with yellow margins. Abdomen blackish-grey with yellow longitudinal median stripe in its posterior half, covered with dense grey hairs, ventrally abdomen grey. Spinnerets greyish. Legs brown, only dorsal surfaces of femora II-IV lighter. Palps light brown. Epigyne typical for the genus, oval with central pocket (Fig. 26), its internal structure shown in Figs. 27-28.

Remark. Probably it is a new species, however, because females of the *Pellenes* are rather difficult to identify, and coloration pattern of this individual is not characteristic, it is necessary to wait with establishment of its formal status till the male is discovered.

Phlegra bifurcata SCHMIDT, GEISTHARDT et PIEPHO, 1994
(Figs. 30-39)

Phlegra bifurcata SCHMIDT, GEISTHARDT and PIEPHO 1994: 115-117.

Diagnosis. Internal structure of epigyne resembles slightly that of *Phlegra festiva* (C.L. KOCH, 1834). This species may be separated by its copulatory organs; male by shape of tibial apophysis, female by very tortile seminal ducts and characteristically placed accessory glands.

Material: São Nicolau: near airport, 4.VI.1988, leg. A. van HARTEN, 1 female (MRAC), Monte Gordo, 3.VI.1988, 1 male, 1 imm. (MRAC); Santo Antão: Cova, 15.VII.1988, leg. A. van HARTEN, 1 female (MRAC); São Vicente: Baia das Gatas, 30.VI.1988, leg. A. van HARTEN, 1 female (MRAC).

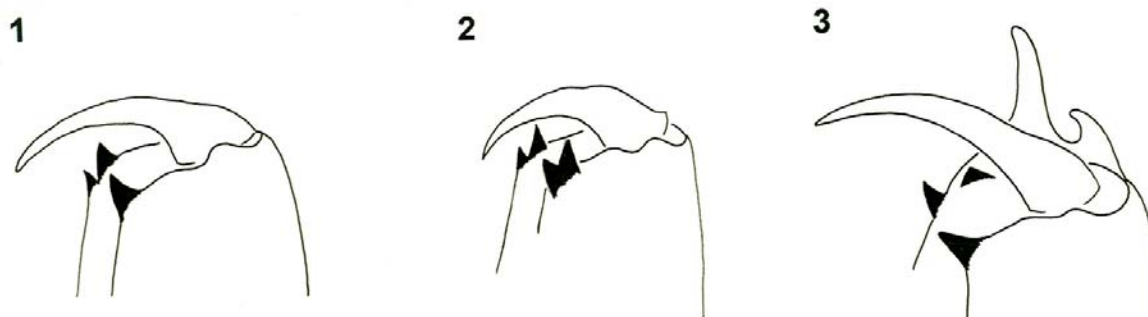
Measurements (male/female). Carapace: length 2.2/2.8, width 1.6/2.1, height 1.0/

1.2. Eye field: length 1.2/1.1, width I 1.3/1.6, width III 1.2/1.5. Abdomen: length 2.2/3.2, width 1.5/2.2.

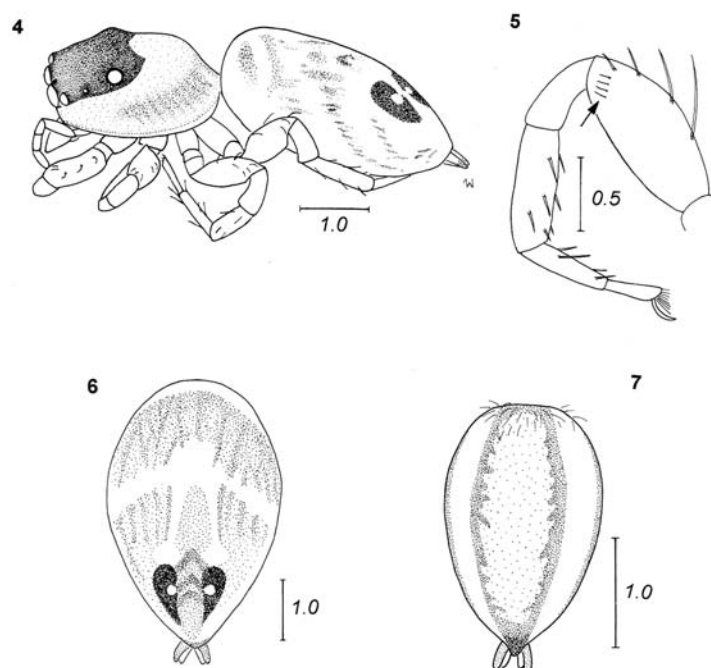
Description. Male. General appearance in Fig. 30. Cephalothorax long, rather flattened, eye field short, occupies third part of cephalothorax length. Coloration pattern typical for the genus. Carapace dark brown, eye field black, two longitudinal stripes composed with white hairs on dorsal surface of carapace, and transversal band of white hairs behind first row of eyes (Fig. 30). Abdomen russet with wide light longitudinal stripe and light sides. Spinnerets dark. Legs dark brown. Palps almost black, covered with very dense black hairs, near apophysis, and on apical part of cymbium some light hairs. Tibial apophysis double (Figs. 32-33, 35), bulbus convex, embolus very thin and delicate (Fig. 31).

Female. Body shape as in male. Carapace dark brown with black eye field, covered with dense adherent light hairs; hairs brown on eye field. Clypeus very low. Chelicerae brown, promargin with two teeth, retromargin with single tooth. Maxillae and labium yellow with darker basal parts. Sternum yellow. Abdomen greyish-brown with irregular light streak medially and light sides, but pattern poorly visible. Ventrally abdomen yellowish-grey. Legs yellow with irregular brown spots, distal parts of segments darker. Leg hairs long brown, spines brown. Epigyne with two rather narrow openings and single pocket (Fig. 36). Seminal ducts heavily convolute, accessory glands long and thin, placed paracentrally (Figs. 37- 38).

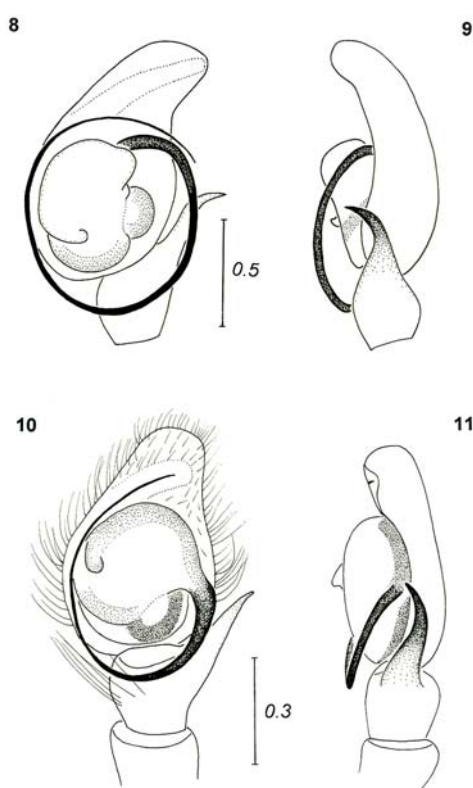
Remark. This species demands redescription, as the drawings of copulatory organs in the original description are rather inadequate and identification of this species on their base is impossible.



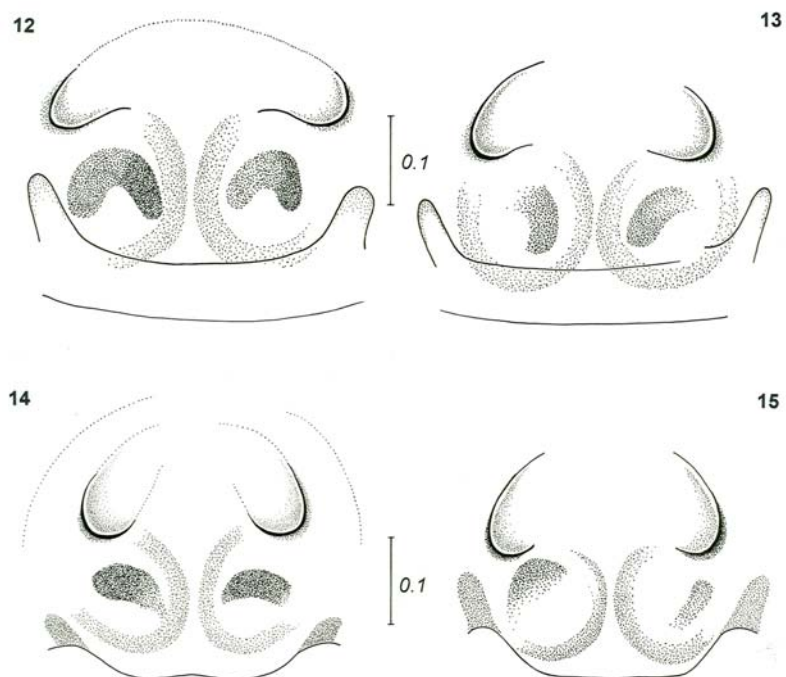
Figs. 1-3 - Cheliceral dentition of male: 1 - *Luxuria* sp., 2 - *Tusitala* sp., 3 - *Blaisea* sp.



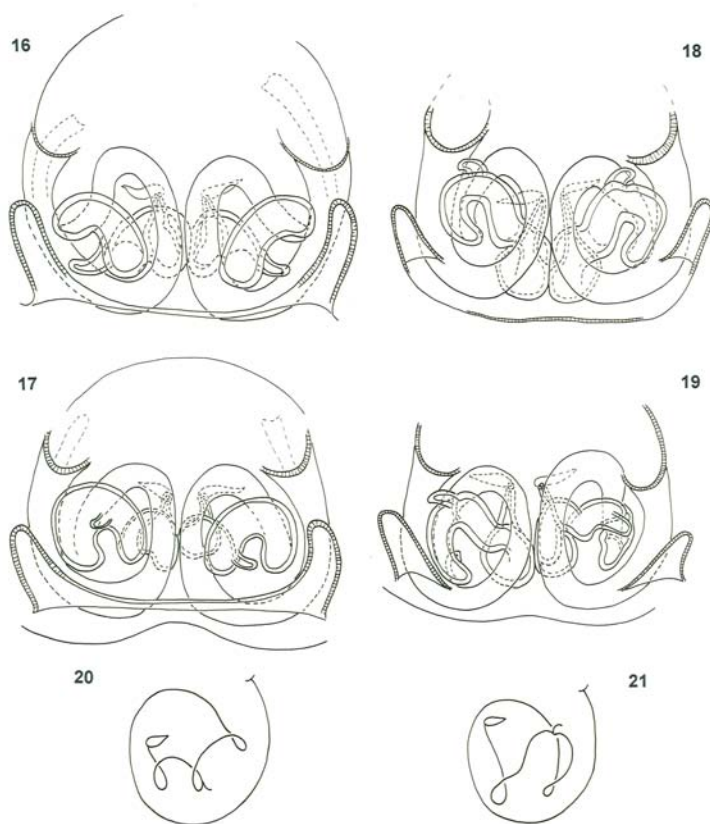
Figs. 4-7 - *Luxuria lymphatica* WESOL.: 4 - general appearance of female, lateral view, 5 - first leg, 6 - male abdominal pattern, 7 - female abdominal pattern.



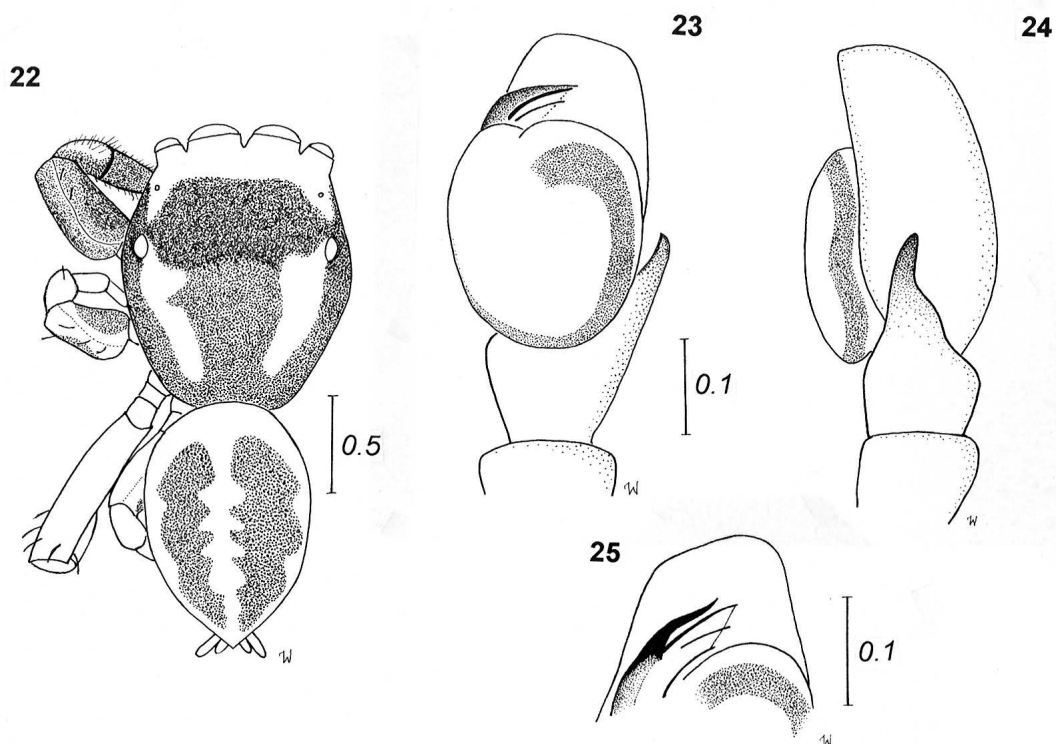
Figs. 8-11 - Palpal organ, ventral and lateral views: 8-9 - *Luxuria lepida* (BLACK.), 10-11 - *Luxuria lymphatica* WESOL.



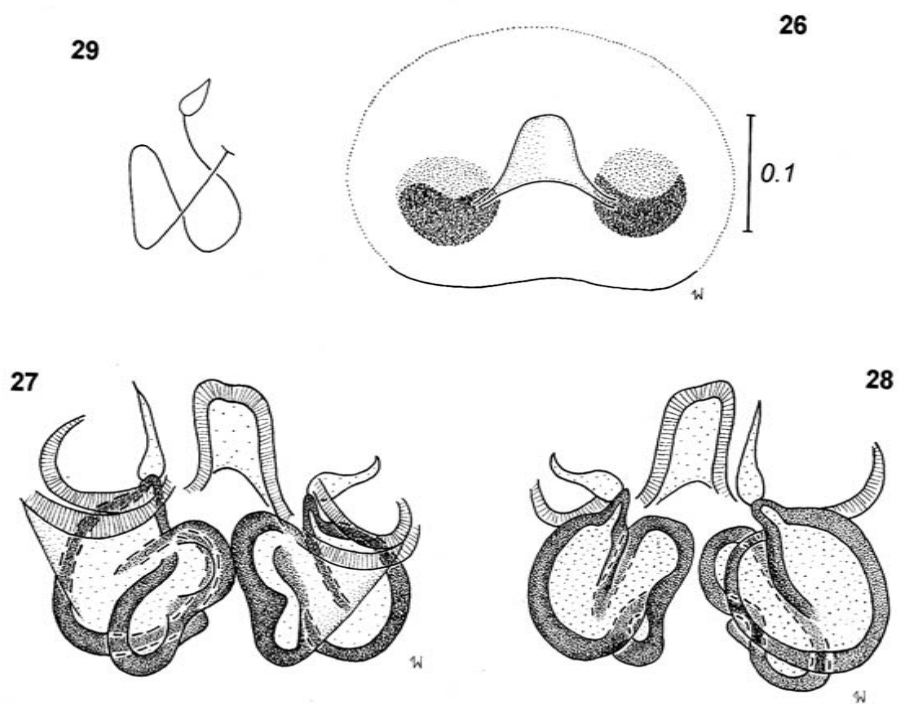
Figs. 12-15 - Epigyne: 12-13 - *Luxuria lepida* (BLACK.), 14-15 - *Luxuria lymphatica* WESOL.



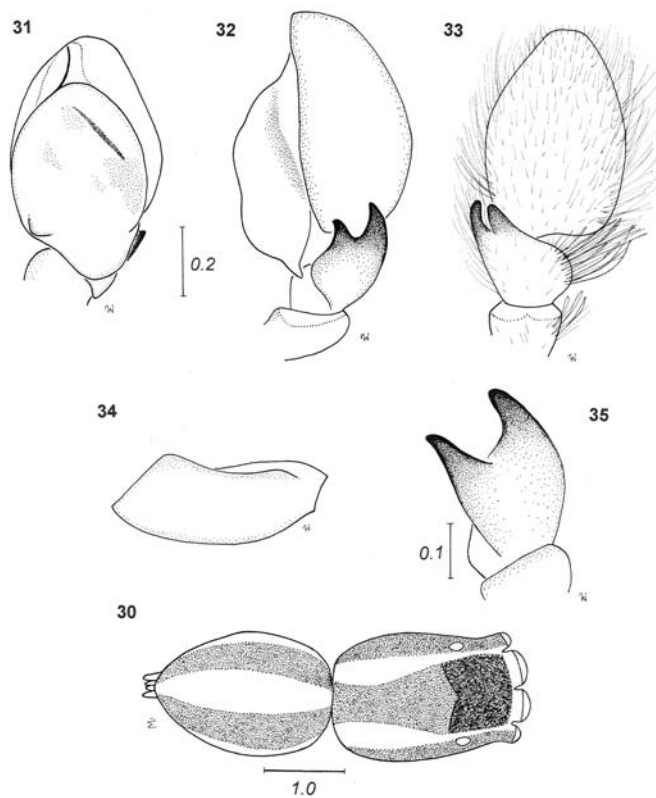
Figs. 16-21 - Internal structure of epigyne and diagrammatic course of seminal duct: 16-17, 20 - *Luxuria lepida* (BLACK.), 18-19, 21 - *Luxuria lymphatica* WESOL.



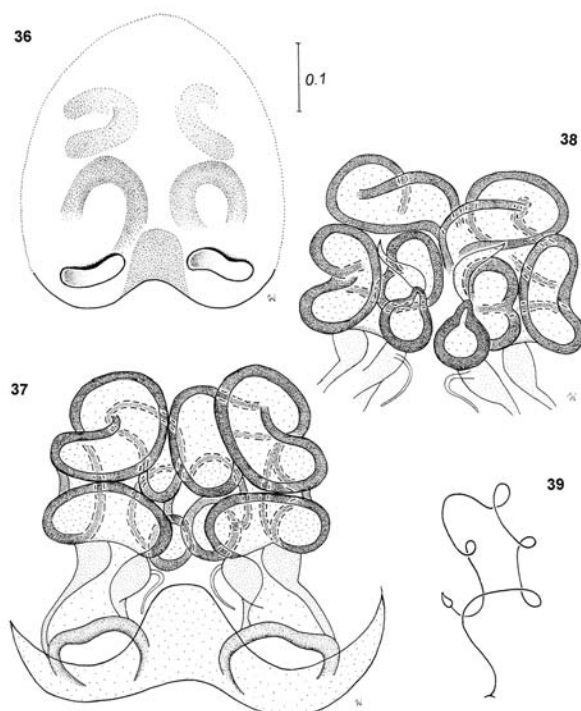
Figs. 22-25 - *Pellenes vanharteni* sp. n., holotype: 22 - general appearance, 23-24 - palpal organ ventral and lateral views, 25 - details structure of embolus.



Figs. 26-29 - *Pellenes* sp.: 26 - epigyne, 27-28 - its internal structure, ventral and dorsal views, 29 - diagrammatic course of seminal duct.



Figs. 30-35 - *Phlegra bifurcata* SCHM.: 30 - general appearance of male, 31-33 - palpal organ, ventral, lateral and dorsal views, 34 - palpal femur, 35 - tibial apophyses, dorsal view.



Figs. 36-39 - *Phlegra bifurcata* SCHM.: 36- epigyne, 37-38 - its internal structure, ventral and dorsal views, 39 - diagrammatic course of seminal duct.

REFERENCES

BERLAND L.:

1936. Mission de M.A. Chevalier aux Iles du Cap Vert (1934) I. Araignées. Rev. franc. Ent., Paris, 3(1): 67-88.

BLACKWALL J.:

1865. Descriptions of recently discovered spiders collected in the Cape Verde Islands by J. Gray. Esq. Ann. Mag. Nat. Hist., London, (3)16: 80-101.

DENIS J.:

1944. Descriptions d'Araignées de Nord-Afric. Bull. Soc. Hist. Nat., Toulouse, 79(1): 41-57.

SCHMIDT G., GEISTHARDT M., PIEPHO F.:

1994. Zur Kenntnis der Spinnenfauna der Kapverdinseln. Mitt. intern. entomol. Ver., Frankfurt a. M., 19(3/4): 81-126.

SIMON E.:

1883. Études arachnologiques. 14e Mémoire. XXI. Matériaux pour servir a la faune arachnologique des iles de l'Océan Atlantique. Ann. Soc. ent. Fr., Paris, (6) 3: 302-305.

WESOLOWSKA W.:

1989. Notes on the Salticidae (Aranei) of the Cape Verde Islands. Ann. Mus. civ. St. nat., Genova, 87: 263-273.