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## Research article

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# A revision of the genus *Pochytoides* Berland & Millot, 1941 (Araneae: Salticidae), with descriptions of six new species

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[urn:lsid:zoobank.org/author:E362DE8A-ECB7-4C6E-B373-9E1821D214F7](https://zoobank.org/author/E362DE8A-ECB7-4C6E-B373-9E1821D214F7)

**Abstract.** The concept of the jumping spider genus *Pochytoides* Berland & Millot, 1941 is reviewed, based on the examination of described and undescribed species. *Pochytoides* is elevated from the subgeneric to the generic rank and a short diagnosis and description of the genus are presented. Redescriptions or descriptions of all species are provided together with a key to the species. Two new combinations are proposed: *Pochytoides perezii* (Berland & Millot, 1941) comb. nov. and *P. poissoni* (Berland & Millot, 1941) comb. nov. (both from *Pochyta*). *Pochyta remyi* Berland & Millot, 1941 originally placed in the subgenus *Pochytoides* is excluded; new combination *Thiratoscirtus remyi* (Berland & Millot, 1941) comb. nov. is proposed for it (but its generic status is uncertain). Six new species are described: *Pochytoides monticola* sp. nov., *P. obstipa* sp. nov., *P. lamottei* sp. nov., *P. patellaris* sp. nov., *P. securis* sp. nov. and *P. spiniger* sp. nov. The genus has a West African distribution.

**Key words.** New species, new combinations, biodiversity, Nimba Mts, afrotropics.

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## Introduction

*Pochytoides* was originally designated as a subgenus of *Pochyta* Simon, 1901 by Berland & Millot (1941) for three species from Guinea.

It is proposed that *Pochytoides* be removed from *Pochyta* and elevated to full generic rank based on morphological evidence. This paper presents redescriptions of the species of this genus as well as descriptions of six new related species from the Nimba Mountains (W Africa). Members of *Pochytoides* are small jumping spiders, belonging to the subtribe Thiratoscirtina (Bodner & Maddison 2012) and they share features with other members of this group. These include a high cephalothorax, sloping abruptly in its posterior part, very long ventral spines on the tibia and metatarsus of the first leg, relatively large anterior median eyes, the eye field wider anteriorly and the female palp with a tarsal spine. The general

pattern of the genitalic structure in *Pochytooides* is unique and clearly separates the genus from the other thiratoscirtine genera (see diagnosis of the genus below).

## Material and methods

All spiders considered here have been collected in Guinea. Three species, *P. perezi* comb. nov., *P. poissoni* comb. nov. and *P. remyi*, were described by Berland & Millot (1941) and were collected by J. Millot in 1937 in the vicinity of Macenta (Guinea). Types of these species are kept in the collection of MNHN.

The specimens from the Nimba Mountains were collected during the expeditions led by M. Lamotte (with collaborators) in the years 1942, 1951, 1956 and in 1961. A substantial part of this collection is kept in MNHN and has already been examined by Rollard & Wesołowska (2002). Another part of the material, used in the present study, is deposited in the NHM and has not been studied so far. Unfortunately, the majority of labels do not contain precise data on localities and dates, referring only to the ‘Nimba Mts’. Additional abundant material was collected by Arnaud Henrard (with associates) during expeditions to the Nimba Mountains in 2011 and 2012. These newly collected specimens were deposited in the MRAC.

Six new species described in this article come from the latter two collections and their type specimens are deposited in NHM and MRAC.

Male-female matching was based on the co-occurrence of specimens, but in some cases more than one species was found in a single vial. Comparison of the embolus length to the length of the epigynal copulatory ducts was helpful in these cases, but it is still possible, that the matched sexes actually do not belong to the same species.

The specimens are preserved in 70% ethanol and were examined in ethanol. Some of the studied specimens are heavily bleached and the colours given in the descriptions may differ from those in the living spiders. The drawings were made with the aid of a reticular eyepiece attached to a stereo microscope. The epigynes and the male pedipalps were removed for study. The epigynes were macerated in cold 5% KOH for 24 hours, dehydrated with 100 ethanol, cleared in xylene and put in eugenol in temporary mounts. After examination, the genitalia were placed in micro-vials with ethanol and stored in the vials containing the specimens from which they had been removed. Terminology is standard for Araneae. The term ‘spine’ is used for a stout, rigid, pointed seta. Specimens were measured as in Metzner (1999), dimensions are given in millimetres. A Nikon Coolpix 8400 mounted on the stereo microscope was used to take digital photos, which were stacked using Helicon Focus image stacking software to increase the depth of field.

## Institutional abbreviations

MNHN = Muséum national d’Histoire naturelle, Paris, France  
MRAC = Musée Royal de l’Afrique Centrale, Tervuren, Belgium  
NHM = Natural History Museum, London, UK

## Results

Class Arachnida Cuvier, 1812  
Order Araneae Clerck, 1757  
Family Salticidae Blackwall, 1841  
Subfamily Salticinae Blackwall, 1841  
Clade Simonida Maddison, 2015  
Tribe Aelurillini Simon, 1901  
Subtribe Thiratoscirtina Bodner & Maddison, 2012

Genus *Pochytoides* Berland & Millot, 1941 stat. nov.**Gender**

Feminine

**Type species***Pochyta poissoni* Berland & Millot, 1941**Diagnosis**

The genus is characterized by the structure of the genitalia. The male palps have a retrolateral tibial apophysis which is broad and straight, with a blunt tip and a dorsal apophysis which is long, thin and perpendicular to the palpal axis. The cymbium is narrow and the bulb is short, more or less triangular, with a well separated basal part and a large embolic division. The presence of a small, spike-like tegular apophysis on the prolateral side of the bulb is a distinctive feature. The epigynes have copulatory openings hidden in a deep and extremely sclerotized cup-shaped atria. The internal structure is simple with seminal ducts more or less short and straight and the spermathecae ovoid or spherical. The genitalic pattern is consistent throughout the whole genus.

**Description**

Small to medium spiders, ranging from about 3 to 5 mm in length. Carapace brown, oval, high and broad, with steep posterior slope beginning just behind the eye field. Eyes on small tubercles, with black rings around each (except as noted), eye field trapezoid, anterior row of eyes slightly wider than the posterior row. Anterior median eyes large. Fovea visible, sulciform, lying on small concave area. Clypeus vertical, low. Chelicerae large and long, fang relatively short, two teeth on promargin and a single large tooth on retromargin (Figs 9C, 11C). Endites slightly convergent. Labium trapezoid. Sternum shield-shaped. Pedicel short, not visible in dorsal view. Abdomen ovoid, slightly narrower than carapace. Legs more or less subequal, anterior pair slightly longer than others, especially in males. Spination of leg I in male: femur dorsally 0–1–1 and 0–0–1 prolaterally, patella 1 prolaterally, tibia ventrally 2–2–2–2 and prolaterally 1–1–0 or 1–0, metatarsus ventrally 2–2 and 2 apically on dorsal surface. Ventral spines on tibia and metatarsus extremely long (Fig. 9D). Spination of leg I in female similar, but spines on patella and prolateral surface of tibia absent. Female palp with single retrolateral spine on tarsus (Fig. 10A). Structure of genitalia: see Diagnosis.

**Remarks**

A large part of the bulb is enveloped by the cymbium, so that the study of this structure, and understanding its functional morphology, requires separation of the bulb from the cymbium. Unfortunately, insufficient numbers of male specimens prevented such study and the detailed bulb structure of only one species, *P. spiniger* sp. nov., is shown (Fig. 13E–G).

**Affinities**

The morphological characters mentioned in the introduction clearly show that *Pochytoides* is related to other genera included in the subtribe Thiratoscirtina Bodner & Maddison, 2012 (sensu Maddison 2015) in the subfamily Salticinae Blackwall, 1841. At the moment, closer relationships of the genus remain unresolved and demand further molecular studies.

**A key to the species of *Pochytoides*****Males**

1. Pedipalp with short apophysis on the patella (Fig. 7C) ..... *P. patellaris* sp. nov.
- Pedipalp without patellar apophysis ..... 2

2. Embolic division serrated distally (Fig. 3A) ..... *P. monticola* sp. nov.  
– Embolic division smooth distally ..... 3
3. Embolus almost straight, with accompanying membrane (Fig. 9E) .....  
..... *P. poissoni* (Berland & Millot, 1941) comb. nov.  
– Embolus bent, without conspicuous membrane ..... 4
4. Anterior lobe of bulb expanding distally, axe-shaped (Fig. 11E) ..... *P. securis* sp. nov.  
– Anterior lobe of bulb tapering distally ..... 5
5. Embolic division curved toward prolateral side of the palp (Fig. 5A) ..... *P. obstipa* sp. nov.  
– Embolic division sigmoid, its tip curved toward retrolateral side ..... 6
6. Prolateral edge of anterior lobe of bulb with spine at base (Fig. 13C) ..... *P. spiniger* sp. nov.  
– Prolateral edge of anterior lobe of bulb strongly sclerotized, but without spine (Fig. 1B) .....  
..... *P. lamottei* sp. nov.

#### Females

1. Epigyne without pockets ..... 2  
– Epigyne with paired pockets at epigastric furrow ..... 3
2. Area occupied by atria broader than spermathecae area (Fig. 8D) .....  
..... *P. perezi* (Berland & Millot, 1941) comb. nov.  
– Area occupied by atria narrower than spermathecae area (Fig. 15C) ..... *P. spiniger* sp. nov.
3. Atria weakly sclerotized (Fig. 12C) ..... *P. securis* sp. nov.  
– Atria strongly sclerotized ..... 4
4. Area occupied by atria narrower than spermathecae area (Fig. 2C) ..... *P. lamottei* sp. nov.  
– Area occupied by atria broader than spermathecae area ..... 5
5. Two semicircular hoods in front of atria, spermathecae spherical (Fig. 10D) .....  
..... *P. poissoni* (Berland & Millot, 1941) comb. nov.  
– Shallow depression in front of atria, spermathecae oval ..... 6
6. Posterior edge of epigynal depression straight, pockets placed posteriorly to spermathecae (Fig. 4B) ..... *P. monticola* sp. nov.  
– Posterior edge of epigynal depression arched, pockets placed at spermathecae level (Fig. 6C) .....  
..... *P. obstipa* sp. nov.

#### *Pochytoides lamottei* sp. nov.

[urn:lsid:zoobank.org:act:64040FFC-964C-424B-AB7B-55B1B64A7AD4](https://doi.org/10.21203/rs.3.rs-2000000/v1)

Figs 1–2

#### Etymology

The species is dedicated to Prof. M. Lamotte, an ecologist who collected many spiders in the Nimba Mts.

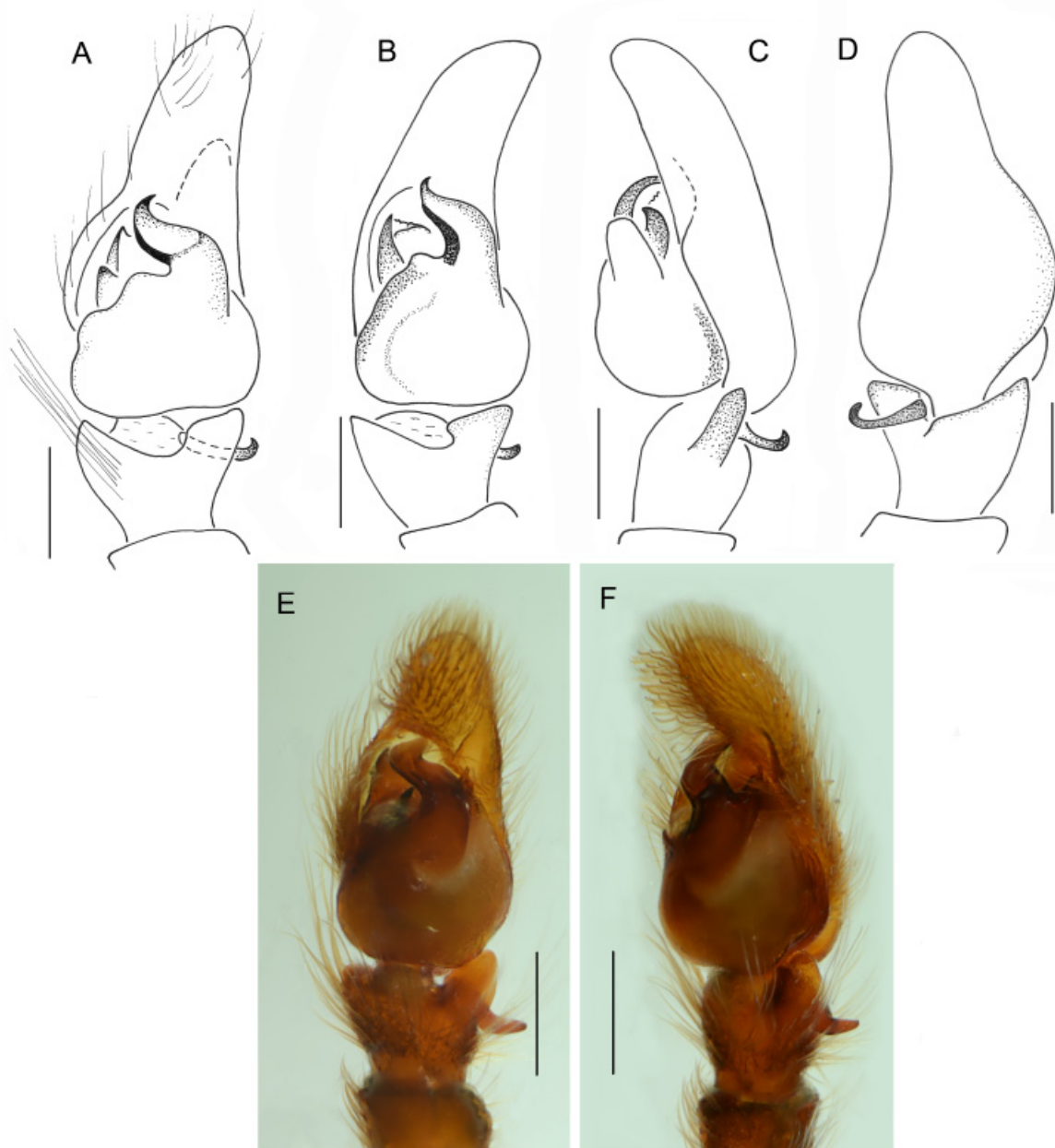
#### Type material

##### Holotype

GUINEA: ♂, Mts Nimba, Praira, 7°34' N, 8°28' W, 1600 m a.s.l., savanna with *Andropogon*, 20 Jun. 1942, M. Lamotte leg. (NHM).

**Paratypes**

GUINEA: 1 ♀, together with holotype (NHM); 1 ♀, Mts Nimba, savanna, 1952–1962, M. Lamotte leg. (NHM); 1 ♀, Mts Nimba, Seringbara forest, 606 m a.s.l., pitfall, 19 Mar. 2012, A. HERNARD *et al.* leg. (MRAC 239 473B); 1 ♀, same locality, in litter, sieving, 13 Mar. 2012, A. HERNARD *et al.* leg. (MRAC 239 034A); 1 ♀, same locality, in litter, sieving, 18 Feb. 2012, A. HERNARD *et al.* leg. (MRAC 239 176A); 4 ♀♀, Mts Nimba, station de pompage Zié, 1250 m a.s.l., forest, litter under high grass, sieving, 11 Oct. 2011, Van den Spiegel and A. HERNARD leg. (MRAC 237 944); 1 ♂, same locality, 1 Oct. 2011 (MRAC 238 094); 1 ♂, same locality, gallery forest, on vegetation, hand collecting,

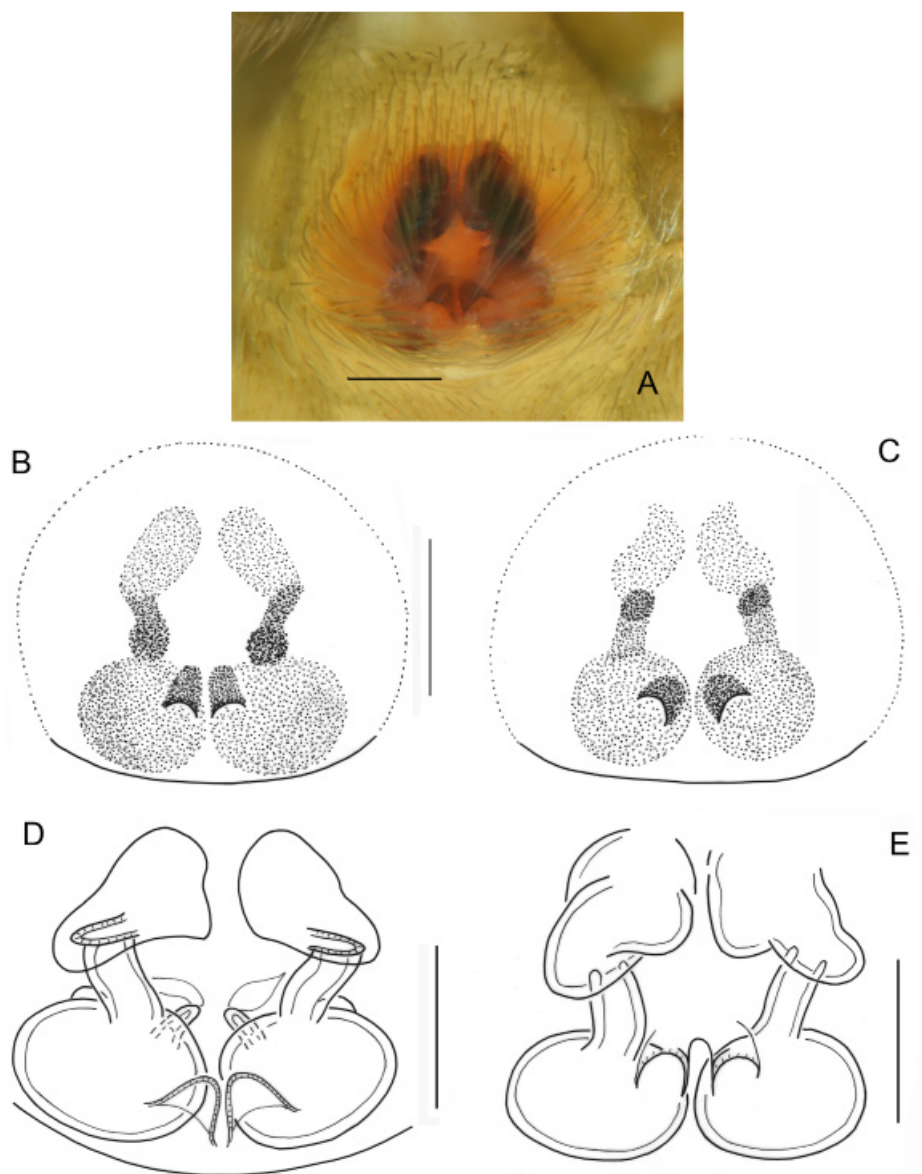


**Fig. 1.** *Pochytoides lamottei* sp. nov., ♂, holotype (A–D) and paratypes (E–F). A–E. Palpal organ. A, E. Ventral view. B. Ventroprolateral view. C. Retrolateral view. D. Dorsal view. F. Ventroretrolateral view. Scale bars: 0.3 mm.

1 Oct. 2011 (MRAC 237 901); 1 ♂, Mts Nimba, Gba valley, 880 m a.s.l., primary forest, hand collecting, 9 Oct. 2012, Van den Spiegel and A. Hernard leg. (MRAC 238 015A); 1 ♂, Mts Nimba, Newené, 545 m a.s.l., near river, dry litter, sieving, 25 Feb. 2012, A. Hernard *et al.* leg. (MRAC 238 900A).

### Differential diagnosis

The male palp is similar to that of *P. spiniger* sp. nov. in having a sinusoid anterior lobe of the bulb, but may be recognized by the strongly sclerotized keel on the prolateral edge of this lobe and the absence of a spine at the base (compare Fig. 1A–C with Fig. 13A–C). The female slightly resembles those of *P. securis* sp. nov. and *P. spiniger* sp. nov. They share an epigyne in which the distance between the lateral edges of the atria is smaller than the distance between the lateral edges of the spermathecae. However, *P. lamottei* sp. nov. may be distinguished by the atria, which are cup-shaped (narrower in the other species,



**Fig. 2.** *Pochytoides lamottei* sp. nov., paratypes, ♀. **A–C.** Epigyne. **D–E.** Internal structure of epigyne. Scale bars: 0.2 mm.

compare Fig. 2A–C with Figs. 12A–B and 15A–C). *Pochytooides lamottei* sp. nov. also differs from *P. spiniger* sp. nov. by the presence of epigynal pockets and from *P. securis* sp. nov. by clearly shorter seminal ducts.

## Description

### Male

**DIMENSIONS.** Cephalothorax: length 2.1–2.2, width 1.7–1.9, height 1.4–1.5. Eye field: length 1.0–1.1, anterior width 1.6–1.8, posterior width 1.7–1.4. Abdomen: length 1.8–2.0, width 1.3–1.5.

**COLOUR AND BODY.** Carapace and eyes as in genus description. Greyish brown with pale chevrons on posterior half. Legs yellow, ventral spines on tibia and metatarsus I very long.

**GENITALIA.** Palpal organ as in Fig. 1A–F. Cymbium very long, with prolateral edge slightly wrapped toward the ventral side of the palp. Bulb short, prolateral border of its anterior lobe heavy sclerotized, but not forming separate spine (Fig. 1A–B).

### Female

**DIMENSIONS.** Cephalothorax: length 1.9–2.0, width 1.6–1.7, height 0.9–1.0. Eye field: length 1.1–1.2, anterior width 1.5–1.6, posterior width 1.3–1.4. Abdomen: length 2.1–2.4, width 1.5–1.7.

**COLOUR AND BODY.** Faint colourless hairs on carapace, anterior eyes encircled by small grey scales. Abdomen oval, dark, brownish grey with light chevrons posteriorly. Venter yellowish, sides with grey marks. Spinnerets pale. Legs brown, femora darker, tarsi slightly lighter. Pedipalps yellowish.

**GENITALIA.** Epigyne rounded, with pair of pockets (Fig. 2A–C). Internal structure as in Fig. 2D–E, copulatory openings hidden in large atria, seminal ducts short.

### *Pochytooides monticola* sp. nov.

[urn:lsid:zoobank.org:act:22EDF7B4-5660-41B0-BB80-794BDB27AF08](https://zoobank.org/act:22EDF7B4-5660-41B0-BB80-794BDB27AF08)

Figs 3–4

## Etymology

The specific name is Latin, meaning a dweller among the mountains, it refers to the occurrence of the species in montane habitats.

## Type material

### Holotype

GUINEA: ♂, Mts Nimba, Nion, 7°36' N, 8°28' W, 16 Jun. 1942, M. Lamotte leg. (NHM).

### Paratypes

GUINEA: 1 ♀, together with holotype (NHM); 1 ♀, Mts Nimba, 7°34' N, 8°28' W, grassy area, 1952–1962, M. Lamotte leg. (NHM).

## Differential diagnosis

The male differs from the other males of *Pochytooides* in having a uniquely shaped of the embolic division that is serrated at the tip (Fig. 3A). The female may be distinguished by the form of the epigyne, similar to that of *P. perezi* comb. nov. and *P. obstipa* sp. nov., all of which have a wide field occupied by atria. However, *P. monticola* sp. nov. can be distinguished from *P. perezi* comb. nov. by the shape of the epigynal depression, which is a narrow horizontal gap (V-shaped in *P. perezi* comb. nov., compare

Fig. 4A–B, with Fig. 8B–C). *Pochytoides monticola* sp. nov. differs from *P. obstipa* sp. nov. by the position of the pockets (posterior to the spermathecae, Fig. 4A–B), whereas *P. obstipa* sp. nov. has pockets placed closer to the centre of the spermathecae (Fig. 6A–D).

## Description

### Male

**DIMENSIONS.** Cephalothorax: length 2.4, width 2.0, height 1.5. Eye field: length 1.5, anterior width 1.9, posterior width 1.7. Abdomen: length 2.0, width 1.5.

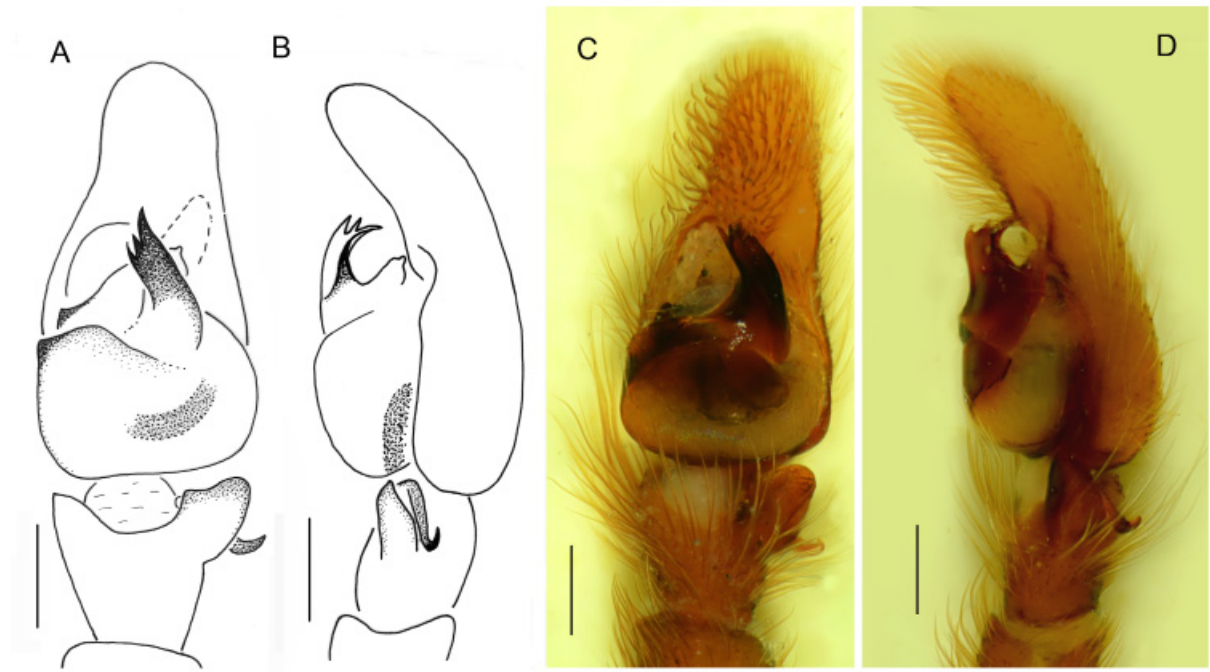
**COLOUR AND BODY.** Carapace and eyes as in genus description. Abdomen ovoid, beige greyish with white chevrons in posterior half. Body clothed in fine hairs, some longer bristles only at first row of eyes and on anterior edge of abdomen. Legs dark yellow, bearing light hairs.

**GENITALIA.** Palpal organ with short bulb, embolic division with characteristic tip, terminated by three teeth (Fig. 3A–D).

### Female

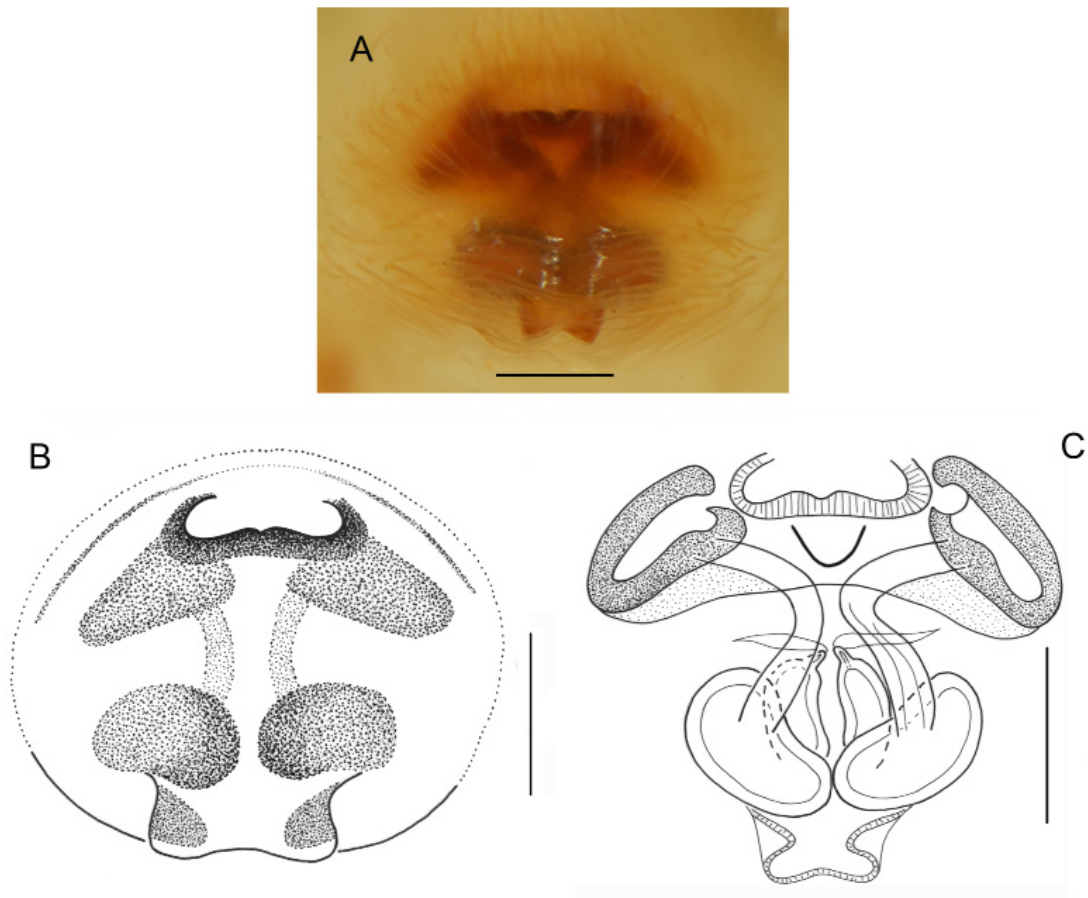
**DIMENSIONS.** Cephalothorax: length 1.8, width 1.7, height 1.2. Eye field: length 1.2, anterior width 1.6, posterior width 1.4. Abdomen: 2.2, width 1.8.

**COLOUR AND BODY.** Morphologically similar to other species. Carapace dark, covered with fine brown hairs, light greyish white hairs only on slopes. Abdomen bleached, with traces of large butterfly-shaped pale patch on dorsum.



**Fig. 3.** *Pochytoides monticola* sp. nov., holotype, ♂. A–D. Palpal organ. A, C. Ventral view. B, D. Retrolateral view. Scale bars: 0.3 mm.





**Fig. 4.** *Pochytoides monticola* sp. nov., paratypes, ♀. **A–B.** Epigyne. **C.** Internal structure of epigyne. Scale bars: 0.2 mm.

**GENITALIA.** Epigyne with wide but low depression anteriorly and posterior plate with two separated pockets (Fig. 4A–B). Atria deep, strongly sclerotized, copulatory canals relatively long (Fig. 4C).

**Remarks**

Matching of sexes uncertain.

*Pochytoides obstipa* sp. nov.

[urn:lsid:zoobank.org:act:173C9B4F-1596-4BEB-BE51-FE45B344E820](https://zoobank.org/act:173C9B4F-1596-4BEB-BE51-FE45B344E820)

Figs 5–6

**Etymology**

The specific epithet is Latin for shrunken and refers to the short bulb.

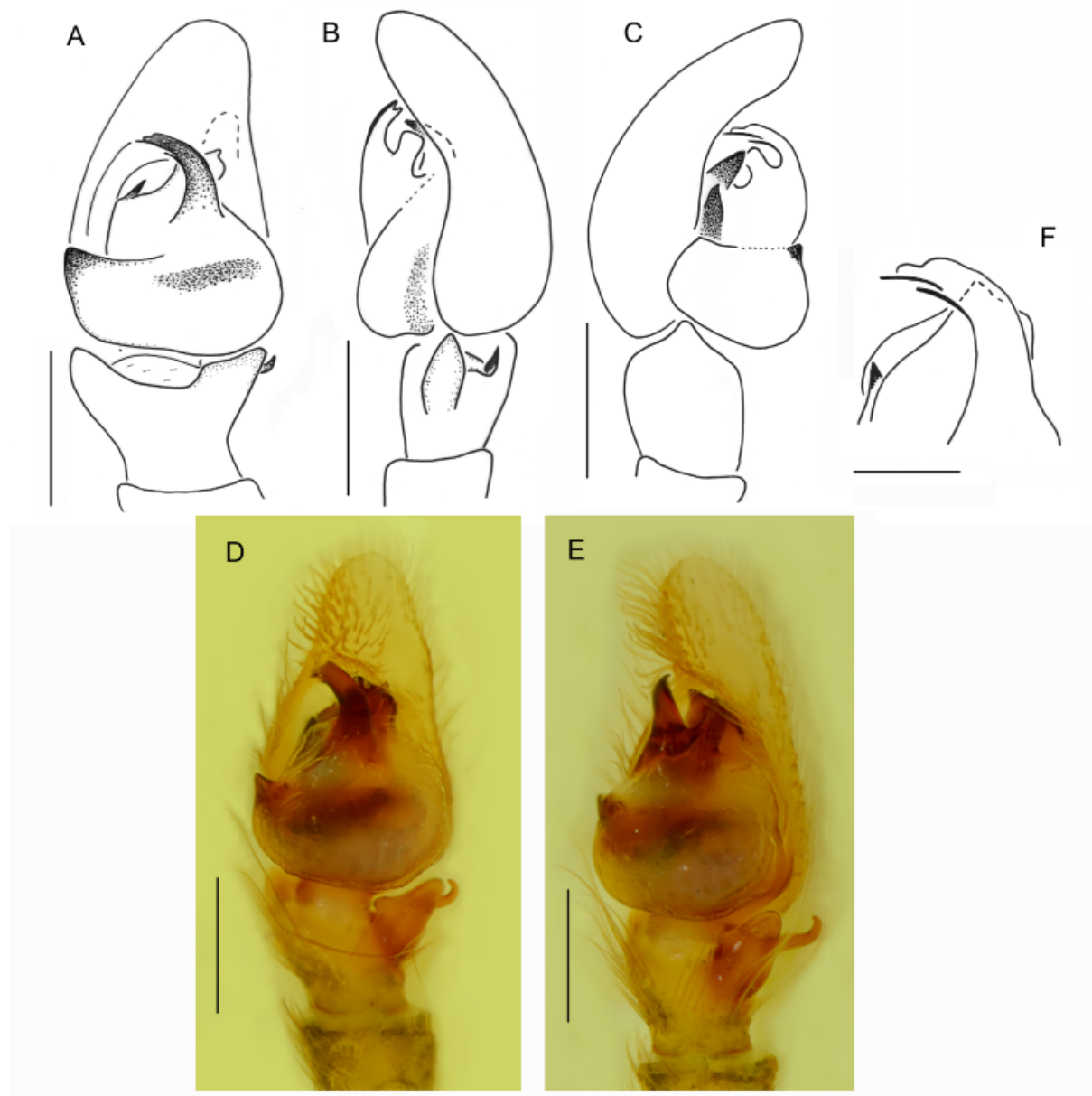
**Type material**

**Holotype**

GUINEA: ♂, Mts Nimba, Seringbara, Isro forest, 593 m a.s.l., secondary forest, soil litter, 24 Feb. 2012, A. Hernald, C. Allard, P. Bimou and M. Sidibé leg. (MRAC 239 091).

**Paratypes**

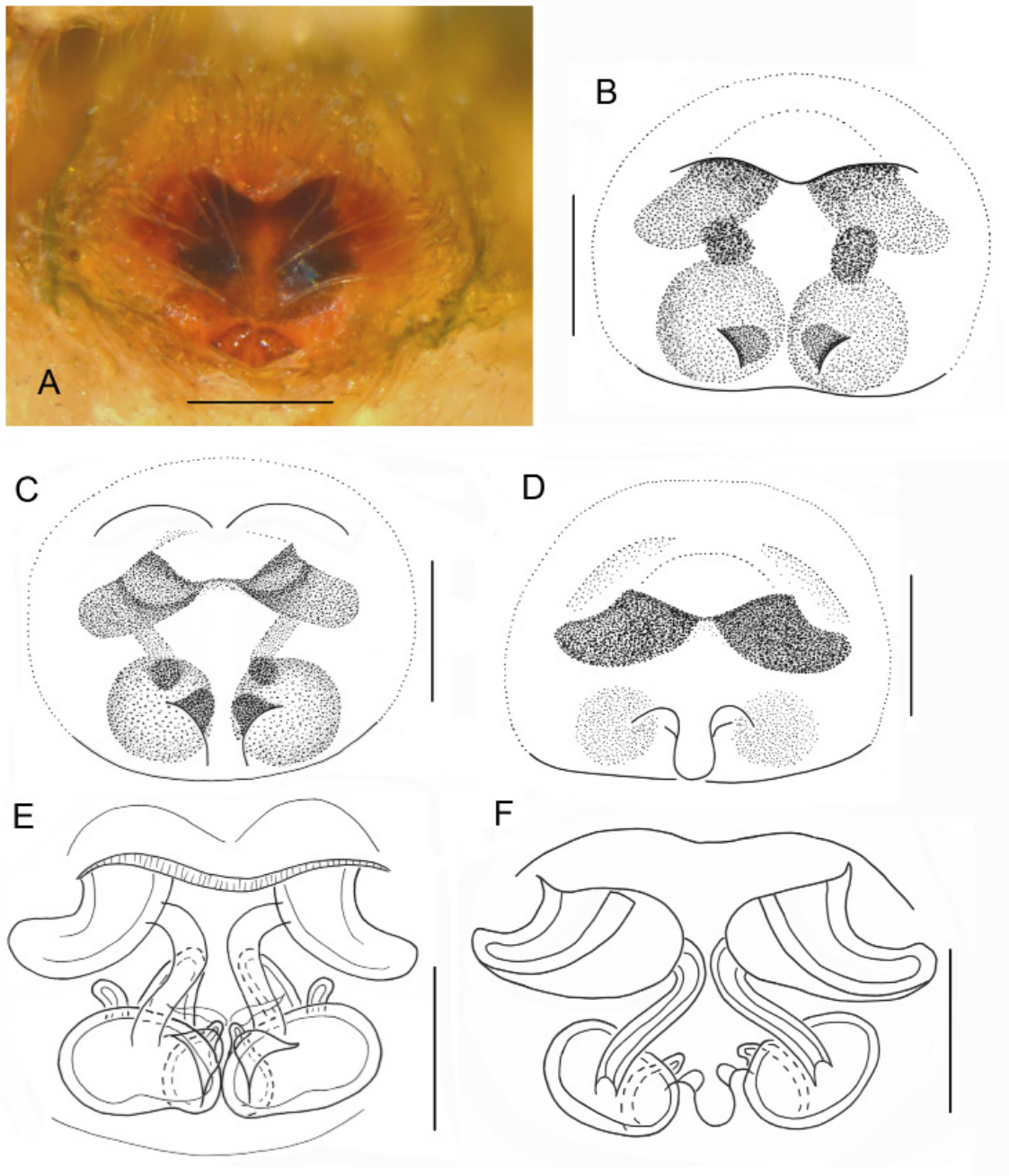
GUINEA: 1 ♀, same locality as holotype, 24 Feb. 2012, A. Hernard *et al.* leg. (MRAC 239 249); 1 ♂, 1 ♀, Mts Nimba, Oct.1951, M. Lamotte leg. (NHM); 2 ♀♀, Mts Nimba, Praira, 7°34' N, 8°28' W, 1600 m a.s.l., savanna with *Andropogon*, 20 Jun. 1942, M. Lamotte leg. (NHM); 1 ♀, Mts Nimba, bank of Véblo stream, 7°41' N, 8°18' W, 23 Dec. 1956, M. Lamotte leg. (NHM); 1 ♂, 1 ♀, Mts Nimba, Gbié, 469 m a.s.l., near river, in litter, sieving, 15 Mar. 2012, A. Hernard *et al.* leg. (MRAC 238 738B); 1 ♀, Mts Nimba, station de pompage Zié, 1250 m a.s.l., forest, litter under high grass, sieving, 11 Oct. 2011, Van den Spiegel and A. Hernard leg. (MRAC 237 989); 1 ♀, Mts Nimba, Freton, 572 m a.s.l., soil litter, sieving, 10 Mar. 2012, A. Hernard *et al.* leg. (MRAC 238 689).



**Fig. 5.** *Pochytooides obstipa* sp. nov., paratypes, ♂. **A–E.** Palpal organ, **A, D.** Ventral view. **B.** Retrolateral view. **C.** Ventroprolateral view. **E.** Ventroretrolateral view **F.** Embolic division. Scale bars: A–E = 0.3 mm, F = 0.1 mm.

**Differential diagnosis**

The male of *P. obstipa* sp. nov. is similar to that of *P. monticola* sp. nov., but can be distinguished by the shape of the embolic division, which is ribbon-like in the former species (Fig. 5A) and serrated in the latter (Fig. 3A). The female is similar to that of *P. poissoni* comb. nov., sharing the epigyne with paired pockets placed at the level of the spermathecae, but can be distinguished from it by the shape of the shallow anterior depression which does not have a clearly marked anterior edge (Fig. 6A–D) as opposed to a distinct two-arched edge in *P. poissoni* comb. nov. (Fig. 10A–F).



**Fig. 6.** *Pochytoides obstipa* sp. nov., paratypes, ♀. A–D. Epigyne. E–F. Internal structure of epigyne. Scale bars: 0.2 mm.

## Description

### Male

DIMENSIONS. Cephalothorax: length 1.6–1.7, width 1.3–1.5, height 0.9–1.0. Eye field: length 0.8–0.9, anterior width 1.3–1.4, posterior width 1.1–1.2. Abdomen: length 1.3–1.4, width 1.0–1.2.

COLOUR AND BODY. Very small spider. Carapace light brown, eyes encircled by dark rings, some dark scales above anterior median eyes. Abdomen ovoid, bleached, beige greyish with traces of white chevrons. Body clothed in delicate colourless hairs, some white hairs on slopes of carapace. Legs dark yellow, bases and tips of their segments slightly darker, femora of first pair of legs brown.

GENITALIA. Palpal organ as in Fig. 5A–E, with short bulb, posterior lobe of the bulb wide, forming protruding prolateral rim. Embolic division curved toward prolateral side, ribbon like (Fig. 5F).

### Female

DIMENSIONS. Cephalothorax: length 1.7–2.0, width 1.5–1.8, height 1.0–1.1. Eye field: length 0.9–1.1, anterior width 1.3–1.5, posterior width 1.1–1.4. Abdomen: length 1.6–2.3, width 1.3–1.7.

COLOUR AND BODY. Similar to male. A few whitish scales between anterior median eyes and anterior laterals, long light bristles beside anterior eyes. Some white hairs on slopes of carapace. Sternum yellow, mouthparts light brown. Abdomen greyish with median pale serrate band, lateral sides mottled. Spinnerets grey. First pair of legs light brown, others yellowish with brown sides of femora and darker rings on bases and tips of segments. Spines brown, leg hairs light. Pedipalp brown, its tarsus yellow.

GENITALIA. Epigyne with two pockets, usually clearly visible, and small groove anteriorly (Fig. 6A–D; each of the following figures show individual variation). Copulatory openings hidden in very deep atria, accessory glands connected to spermathecae (Fig. 6E–F).

### *Pochytoides patellaris* sp. nov.

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Fig. 7

## Etymology

The specific name refers to the presence of an apophysis on the palpal patella.

## Type material

### Holotype

GUINEA: ♂, Mts Nimba, grassy area, 1952–1962, M. Lamotte leg. (NHM).

### Paratype

GUINEA: 1 ♂, together with holotype (NHM).

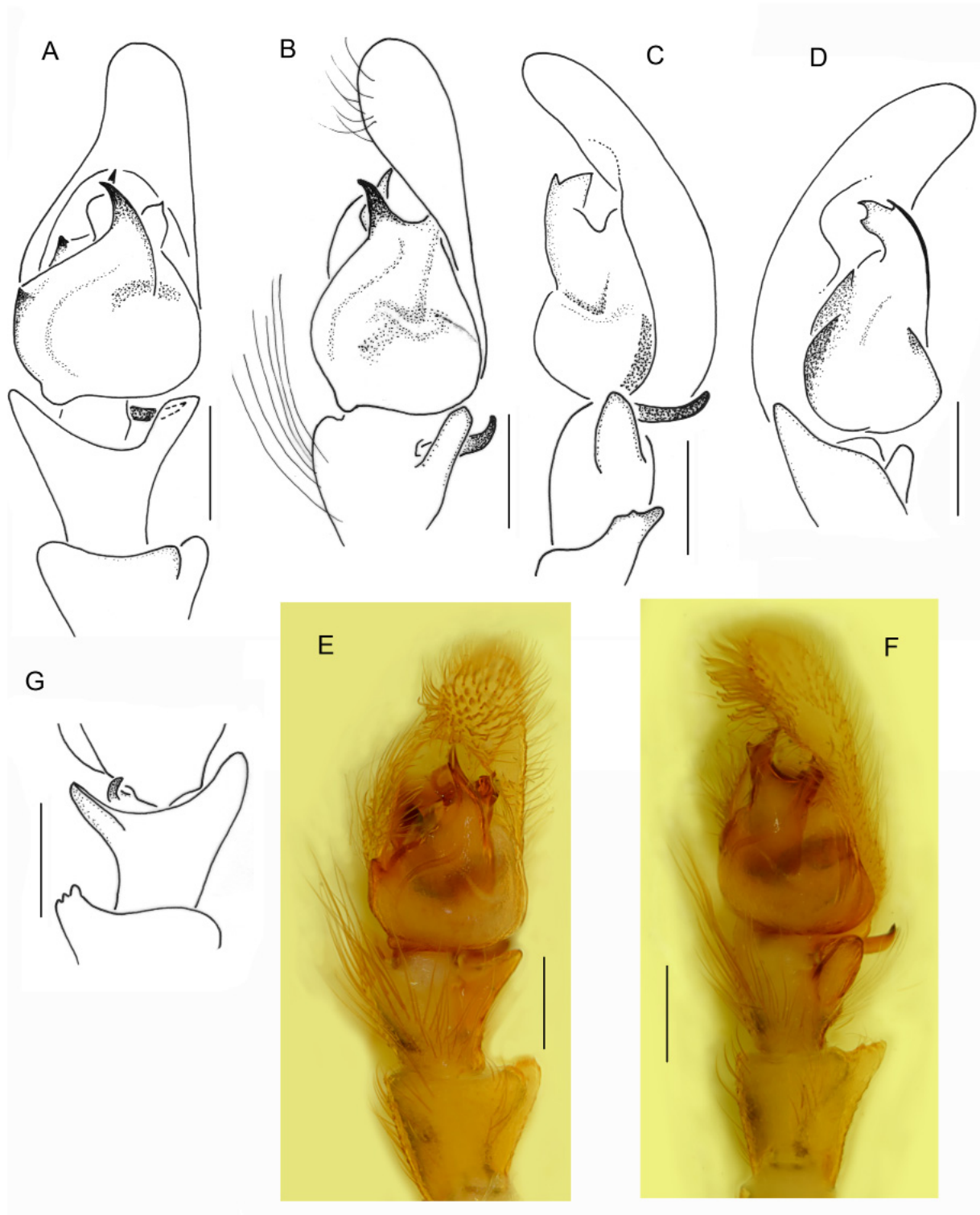
## Differential diagnosis

The male is similar to that of *P. poissoni* comb. nov. in having an embolus with accompanying membrane, but may be distinguished by the presence of a small patellar apophysis (Fig. 7A, C, F–G).

## Description

### Male

DIMENSIONS. Cephalothorax: length 2.3–2.4, width 1.9–2.1, height 1.3–1.5. Eye field: length 1.2–1.4, anterior width 1.8–1.9, posterior width 1.6–1.8. Abdomen: length 1.9–2.2, width 1.4–1.5.



**Fig. 7.** *Pochytoides patellaris* sp. nov., holotype, ♂. **A–F.** Palpal organ. **A, E.** Ventral view. **B, F.** Ventroretrolateral view. **C.** Retrolateral view. **D.** Ventroprolateral view. **G.** Palpal apophyses, dorsal view. Scale bars: 0.3 mm.

COLOUR AND BODY. Carapace brownish with slopes slightly darker but covered by light hairs. Anterior eyes encircled by fawn scales. Abdomen greyish with large light patch in anterior half and chevrons posteriorly, clothed in fine hairs, among them some longer bristles. Legs yellow with darker rings.

GENITALIA. Pedipalps pale, yellowish. Palpal organ as in Fig. 7A–G. Short but clear retrolateral apophysis on palpal patella (Fig. 7A, C, F–G). Embolus slightly curved to prolateral side, with accompanying membrane (Fig. 7A).

### Female

Unknown.

### *Pochytoides perezii* (Berland & Millot, 1941) comb. nov.

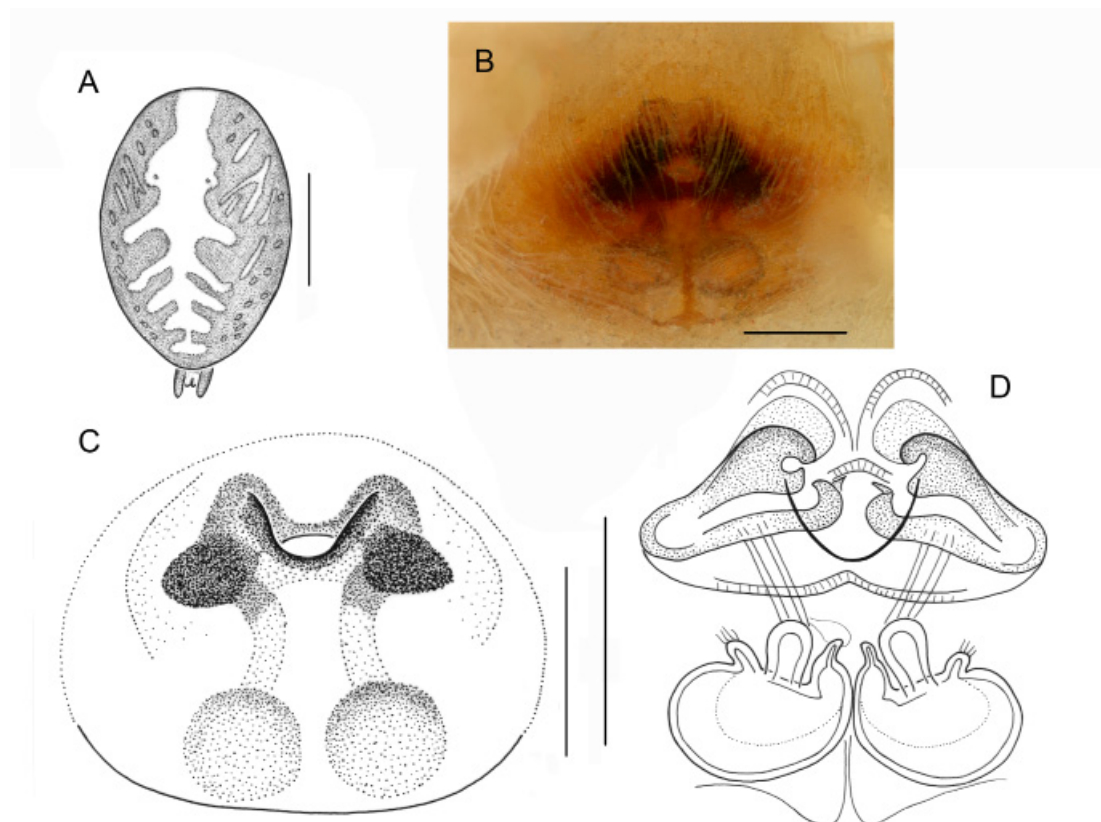
Fig. 8

*Pochyta (Pochytoides) perezii* Berland & Millot, 1941: 362, fig. 63a–c.

### Type material

#### Holotype

GUINEA: ♀, Macenta, 08°33' N, 09°28' W [620 m a.s.l.], [1937, leg. J. Millot] (MNHN).



**Fig. 8.** *Pochytoides perezii* (Berland & Millot, 1941) comb. nov., holotype, ♀. **A.** Abdominal pattern. **B–C.** Epigyne. **D.** Internal structure of epigyne. Scale bars: A = 1.0 mm, B–D = 0.2 mm.

**Differential diagnosis**

The female has an epigyne similar to that of *P. spiniger* sp. nov., sharing the V-shaped anterior epigynal depression and the absence of pockets, but may be distinguished by having a broader area occupied by the atria than that of *P. spiniger* sp. nov. in comparison to the area surrounding the spermathecae (compare Fig. 8B–C with Fig. 15A–C).

**Redescription****Male**

Unknown.

**Female**

DIMENSIONS. Cephalothorax: length 2.1, width 1.7, height 1.2. Abdomen: length 2.0, width 1.6. Eye field: length 1.1, anterior width 1.5, posterior width 1.4.

COLOUR AND BODY. Carapace dark brown, covered with fine hairs. Eye field darker, some brown bristles at anterior eyes. Abdomen brown with lighter herring-bone pattern dorsally and numerous patches on lateral sides (Fig. 8A). Spinnerets brownish. Legs long, yellow, with delicate yellowish hairs.

GENITALIA. Epigyne strongly sclerotized, especially anteriorly where characteristic plate with small depression between atria is situated (Fig. 8B–C). Copulatory openings hidden in very deep atria, accessory glands connected to spermathecae (Fig. 8D).

***Pochytoides poissoni* (Berland & Millot, 1941) comb. nov.**

Figs 9–10

*Pochyta (Pochytoides) poissoni* Berland & Millot, 1941: 363, fig. 64a–b.

**Type material****Holotype**

GUINEA: ♀, Macenta, 08°33' N, 09°28' W [620 m a.s.l.], [1937, leg. J. Millot] (MNHN).

**Other material**

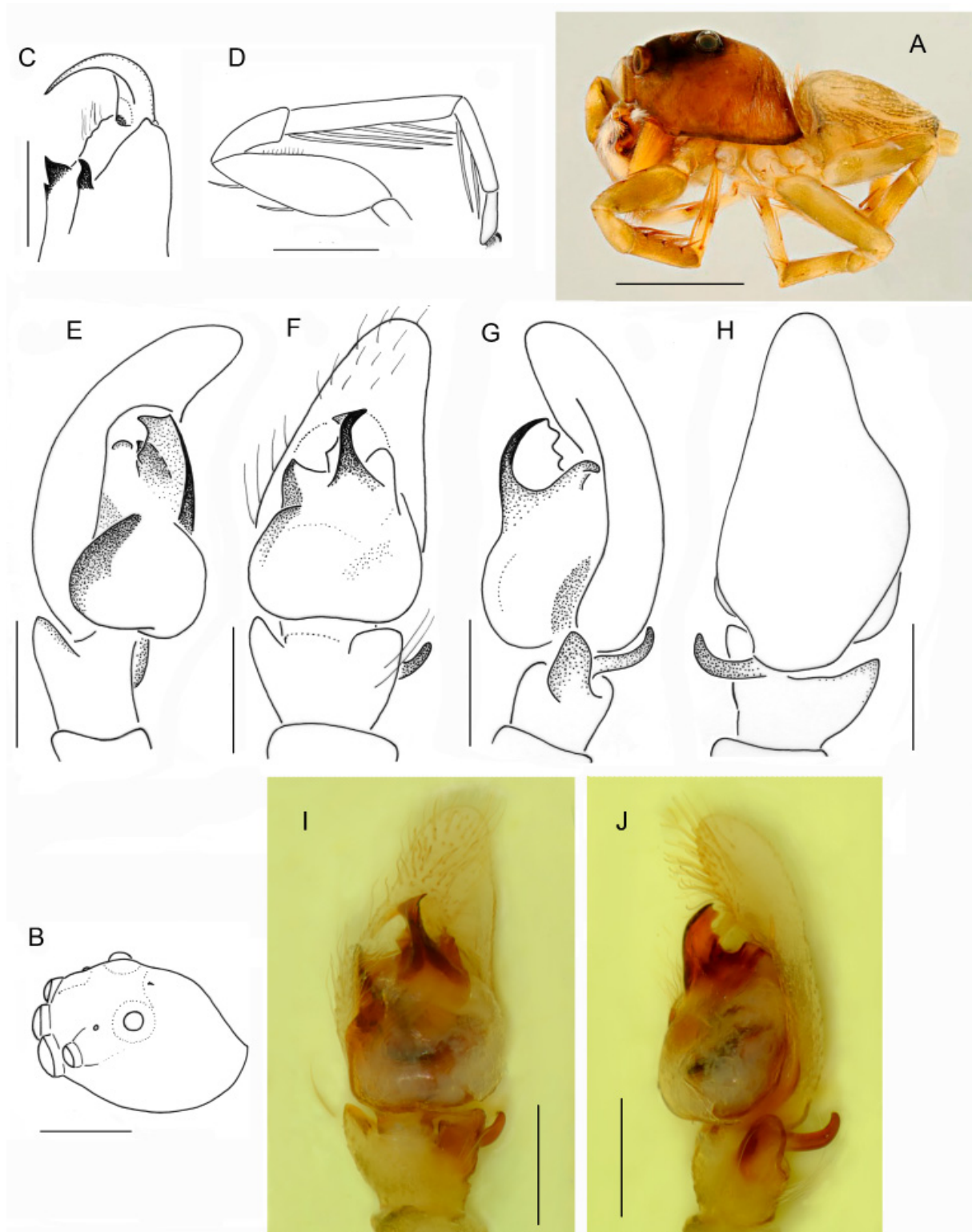
GUINEA: 1 ♂, together with holotype (MNHN); 1 ♀, Mts Nimba, Praira, 1600 m a.s.l., 7°34' N, 8°28' W, savanna with *Andropogon*, 20 Jun. 1942, M. Lamotte leg. (NHM); 1 ♀, Mts Nimba, Ziéla, 500 m a.s.l., 16–20 Dec. 1956, M. Lamotte leg. (NHM); 1 ♀, Mts Nimba, Fouenyi forest, 573 m a.s.l., soil litter, sieving, 1 Mar. 2012, A. Hernard *et al.* leg. (MRAC 238 838B).

**Differential diagnosis**

The male is similar to that of *P. patellaris* sp. nov. in having an embolus with accompanying membrane, but may be distinguished by the orientation of the embolar tip (retrolateral in *P. poissoni* comb. nov., prolateral in *P. patellaris* sp. nov.) and by the absence of a patellar apophysis. The female is slightly similar to that of *P. obstipa* sp. nov.; both species have an epigyne with paired pockets placed near the epigastric furrow at the level of the spermathecae, but *P. poissoni* comb. nov. can be separated by the clearly smaller atria and characteristic wavy edge of the atrial area (compare Fig. 10A–F with Fig. 6A–D).

**Redescription****Male**

DIMENSIONS. Cephalothorax: length 2.3, width 1.4, height 1.1. Abdomen: length 1.5, width 1.0. Eye field: length 0.9, anterior width 1.4, posterior width 1.3.



**Fig. 9.** *Pochytoides poissoni* (Berland & Millot, 1941) comb. nov., ♂. **A.** General appearance, lateral view. **B.** Carapace, dorsolateral view. **C.** Cheliceral dentition. **D.** First leg. **E–K.** Palpal organ. **E.** Ventroprolateral view. **F, I.** Ventral view. **G, J.** Retrolateral view. **H.** Dorsal view. Scale bars: A–B, D = 1.0 mm, C, E–K = 0.3 mm.

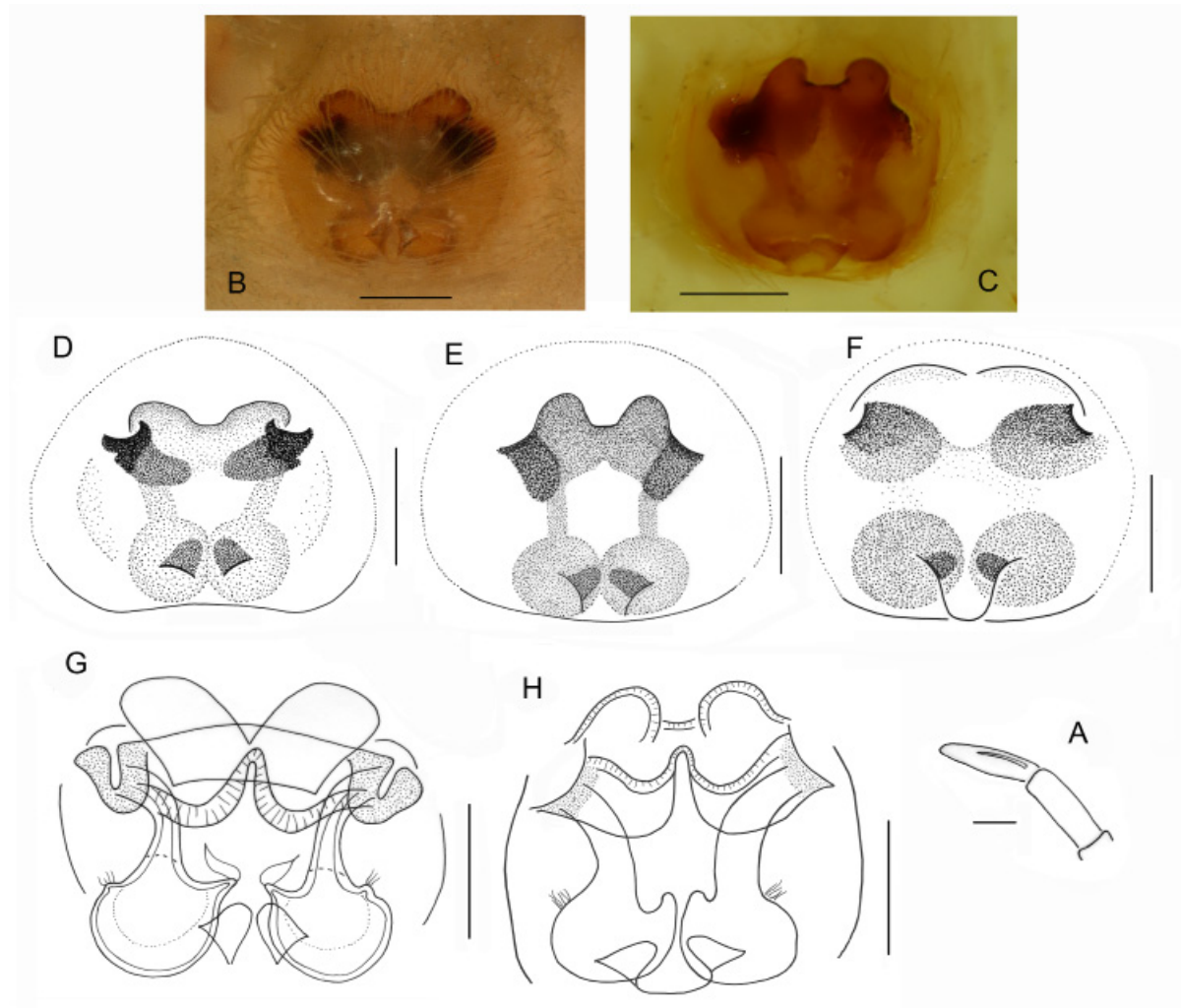


**COLOUR AND BODY.** General appearance as in Fig. 9A. Carapace abruptly sloping posteriorly (Fig. 9B), covered with delicate colourless hairs, some white hairs on slopes. Anterior medians lack black rings, long bristles near eyes. Fovea visible. Clypeus low, with white hairs. Chelicerae dark yellow, fang short, dentition as in Fig. 9C. Labium, endites and sternum dark yellowish. Abdomen smaller than cephalothorax, oval, yellowish grey (probably bleached) with traces of lighter chevrons in posterior half, some brown bristles on abdominal dorsum, denser at anterior edge. Spinnerets yellow. Legs long, light brown. Ventral spines of tibia and metatarsus extremely long (Fig. 9D). Short, stiff and sharp hairs on ventral surface of first femur.

**GENITALIA.** Pedipalps yellow with white hairs on cymbium, tibia short with short broad retrolateral and prolateral apophyses (Fig. 9F, J) and thin horizontal apophysis on dorsum (Fig. 9H). Embolus nearly straight, only the tip curved to retrolateral side, with large accompanying membrane (Fig. 9E–G, J–K).

### Female

**DIMENSIONS.** Cephalothorax: length 2.0–2.2, width 1.5–1.8, height 1.0–1.1. Abdomen: length 2.0–2.6, width 1.4–1.9. Eye field: length 1.0–1.2, anterior width 1.5–1.8, posterior width 1.4–1.7.



**Fig. 10.** *Pochytoides poissoni* (Berland & Millot, 1941) comb. nov., holotype, ♀ (B, D, G), specimen from Ziéla (A, C, E, H) and specimen from Fouenyi (F). A. Tip of female's palp. B–F. Epigyne. G–H. Internal structure of epigyne. Scale bars: A = 0.3 mm, B–H = 0.2 mm.

COLOUR AND BODY. Shape of body as in male, only leg I shorter. Some white hairs on slopes of carapace. Chelicerae as in male, only retromarginal tooth slightly smaller. Abdominal pattern with more contrast than in male, two parallel light bands on greyish background in anterior part and a few chevrons posteriorly. Legs yellow, darker rings on bases and ends of segments. Retrolateral spine on palpal tarsus (Fig. 10A).

GENITALIA. Epigyne strongly sclerotized, especially in the anterior part, with pair of pockets in front of the epigastric fold (Fig. 10A–F; figures show intraspecific variation). Internal structure as in Fig. 10G–H, copulatory openings placed in deep atria, small accessory glands connected to spermathecae.

### Remark

One male was found together with the holotype in the same vial, but this specimen is not mentioned in the original description.

### *Pochytoides securis* sp. nov.

[urn:lsid:zoobank.org:act:008FA360-997C-46A9-A2AB-326CE1BAD9CB](http://urn:lsid:zoobank.org:act:008FA360-997C-46A9-A2AB-326CE1BAD9CB)

Figs 11–12

### Etymology

The specific name is Latin for axe and refers to the shape of the anterior lobe of the bulb.

### Type material

#### Holotype

GUINEA: ♂, Mts Nimba, Zougué valley, near Gbakoré mine camp, 778 m a.s.l., fogging, young secondary gallery forest, 5 Oct. 2011, Van den Spiegel *et al.* leg. (MRAC).

#### Paratypes

GUINEA: 1 ♂, 1 ♀, together with holotype (MRAC 238 206); 1 ♂, 1 ♀, Mts Nimba, grassy area, 1952–1962, M. Lamotte leg. (NHM); 1 ♀, Mts Nimba, Ziela, 639 m a.s.l., primary forest, in litter, sieving, 15 Feb. 2012, A. Hernard *et al.* leg. (MRAC 238 729); 1 ♀, Mts Nimba, Freton, 572 m a.s.l., litter under trees, sieving, 10 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 305); 1 ♀, Mts Nimba, Riolou, secondary forest, beating, 5 Mar. 2012, A. Hernard *et al.* leg. (MRAC 243 453A); 1 ♀, Mts Nimba, Seringbara, near camp, secondary forest, beating, 18 Feb. 2012, A. Hernard *et al.* leg. (MRAC 243 477A); 1 ♀, Mts Nimba, Seringbara forest, 606 m a.s.l., secondary forest, fogging, 13 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 635); 1 ♀, Mts Nimba, Seringbara, Kpèlyi forest, 601 m a.s.l., secondary forest, litter under trees, sieving, 21 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 251).

### Differential diagnosis

The male differs from that of other species in having an unique anterior lobe of the bulb, broadening distally, with a small triangular process on the prolateral edge at mid-length (Fig. 11E). The female is easily recognized from congeners by the unique structure of the epigyne with relatively weakly sclerotized atria and long seminal ducts (Fig. 12A–B).

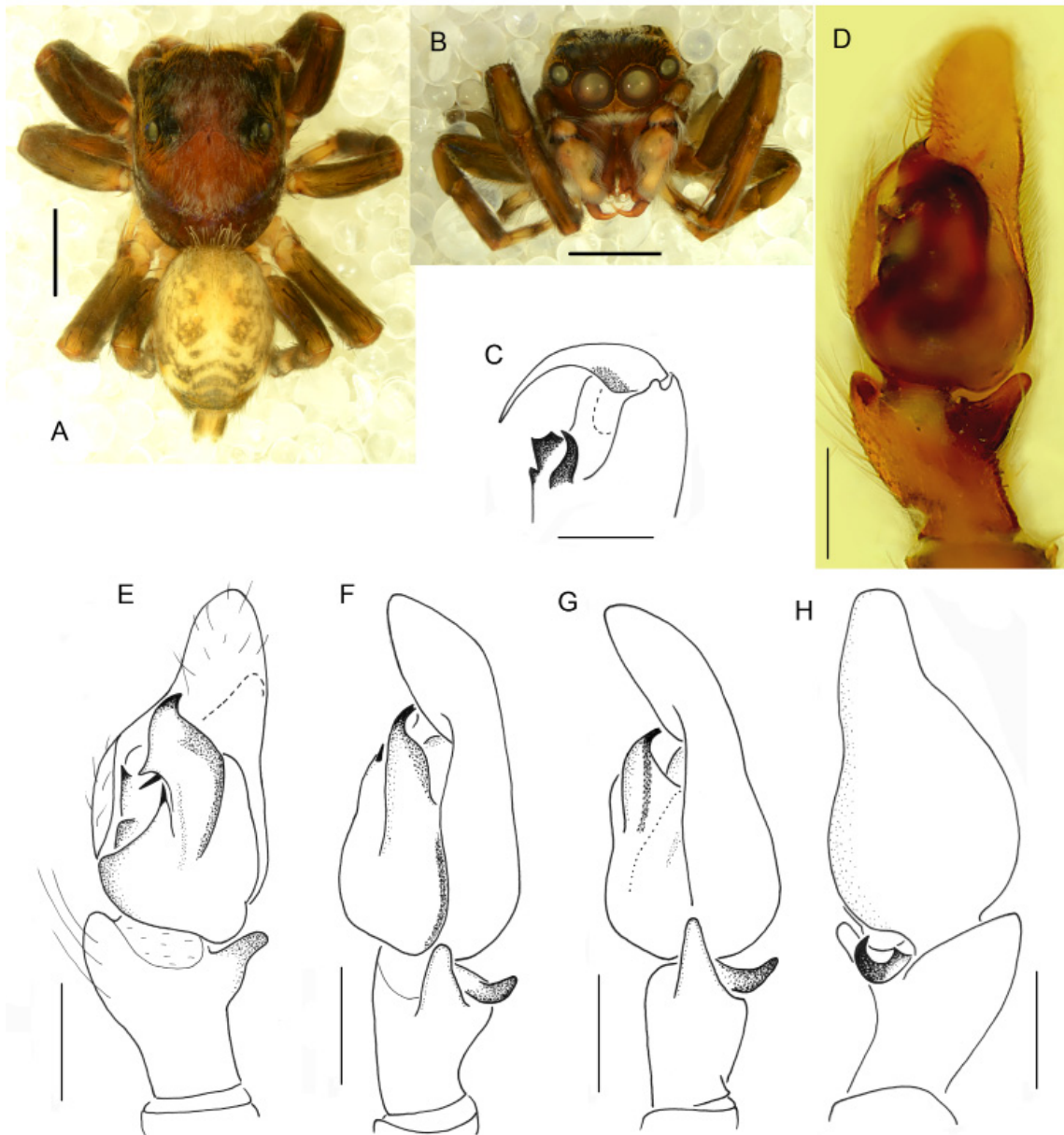
### Description

#### Male

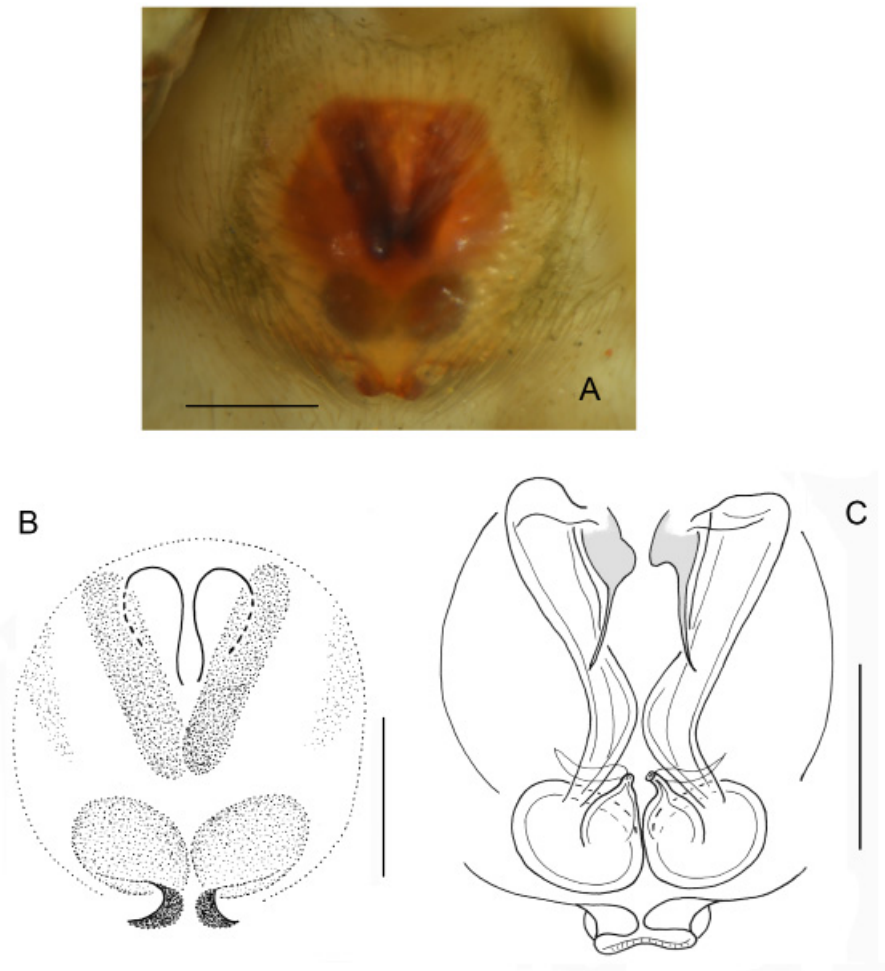
DIMENSIONS. Cephalothorax: length 2.2–2.3, width 1.7–1.8, height 1.1–1.2. Eye field: length 1.0–1.1, anterior width 1.6–1.7, posterior width 1.4–1.5. Abdomen: length 1.9–2.1, width 1.4–1.5.

**COLOUR AND BODY.** General appearance as in Fig. 11A. Carapace dark brown, black line along edges of carapace, white hairs on slopes and on foveal area. Anterior median eyes lack black rings but encircled by fawn scales, fawn hairs on eye field (Fig. 11B). Clypeus brown. Chelicera with an unusually large promarginal tooth (Fig. 11C). Mouthparts brownish, sternum yellow. Abdomen greyish beige to dark brown, with yellow serrated band medially (Fig. 11A), venter dark with four lines formed by white dots. Spinnerets dark. First pair of legs dark brown, metatarsus and tarsus lighter. Other legs brownish with darker femora. Coxae and trochanters of all legs pale.

**GENITALIA.** Pedipalps brown, cymbium clothed in dense pale hairs. Palpal organ as in Fig. 11D–H, bulb with characteristic wide anterior lobe. Dorsal apophysis slightly broader than in other species.



**Fig. 11.** *Pochytoides securis* sp. nov., paratypes, ♂. **A.** General appearance, dorsal view. **B.** Frontal view. **C.** Cheliceral dentition. **D–H.** Palpal organ. **D–E.** Ventral view. **F.** Ventroretrolateral view. **G.** Retrolateral view. **H.** Dorsal view. Scale bars: A–B = 1.0 mm, C–H = 0.3 mm.



**Fig. 12.** *Pochytooides securis* sp. nov., paratypes, ♀. **A–B.** Epigyne. **C.** Internal structure of epigyne. Scale bars: 0.2 mm.

### Female

**DIMENSIONS.** Cephalothorax: length 1.9–2.0, width 1.5–1.7, height 0.9–1.0. Eye field: length 1.0–1.1, anterior width 1.4–1.5, posterior width 1.3–1.4. Abdomen: length 1.7–2.2, width 1.3–1.6.

**COLOUR AND BODY.** Similar to male, slightly lighter coloured. Anterior median eyes encircled by grey scales, grey hairs on eye field. Abdomen yellowish.

**GENITALIA.** Epigyne rounded, less sclerotized than in other species (Fig. 12A–B). Atria small, weakly sclerotized, copulatory canals long (Fig. 12C).

### *Pochytooides spiniger* sp. nov.

[urn:lsid:zoobank.org:act:6772A649-48A0-41F5-8B92-E37549A6F462](https://doi.org/10.21203/rs.3.rs-1911111/v1)

Figs 13–15

### Etymology

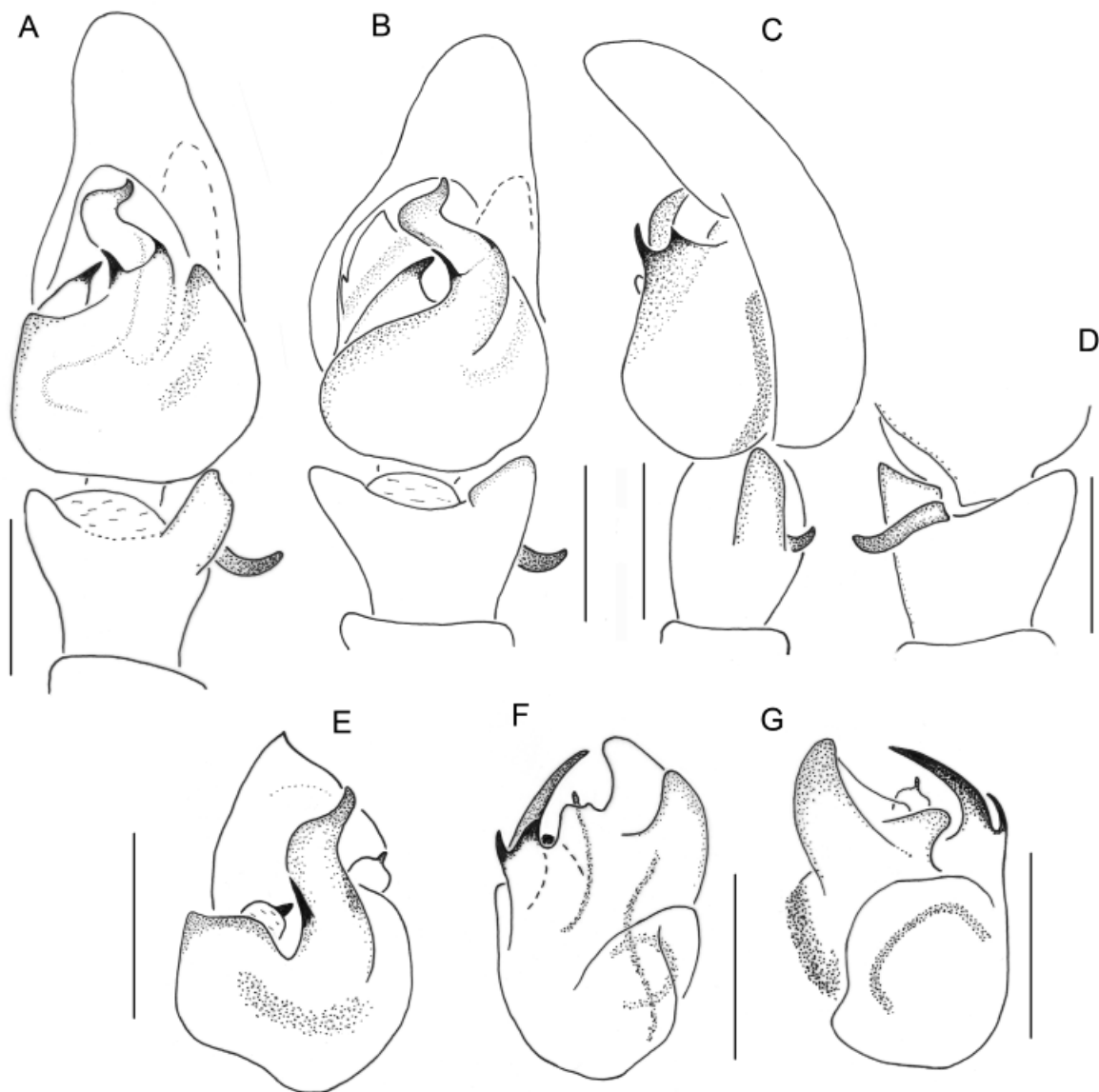
The specific name is Latin, meaning prickly and refers to the presence of spikes at the base of anterior lobe of the bulb.

**Type material****Holotype**

GUINEA: ♂, Mts Nimba, Blande Cave, in litter, sieving, 30 Jan. 2012, Van den Spiegel *et al.* leg. (MRAC 237 858).

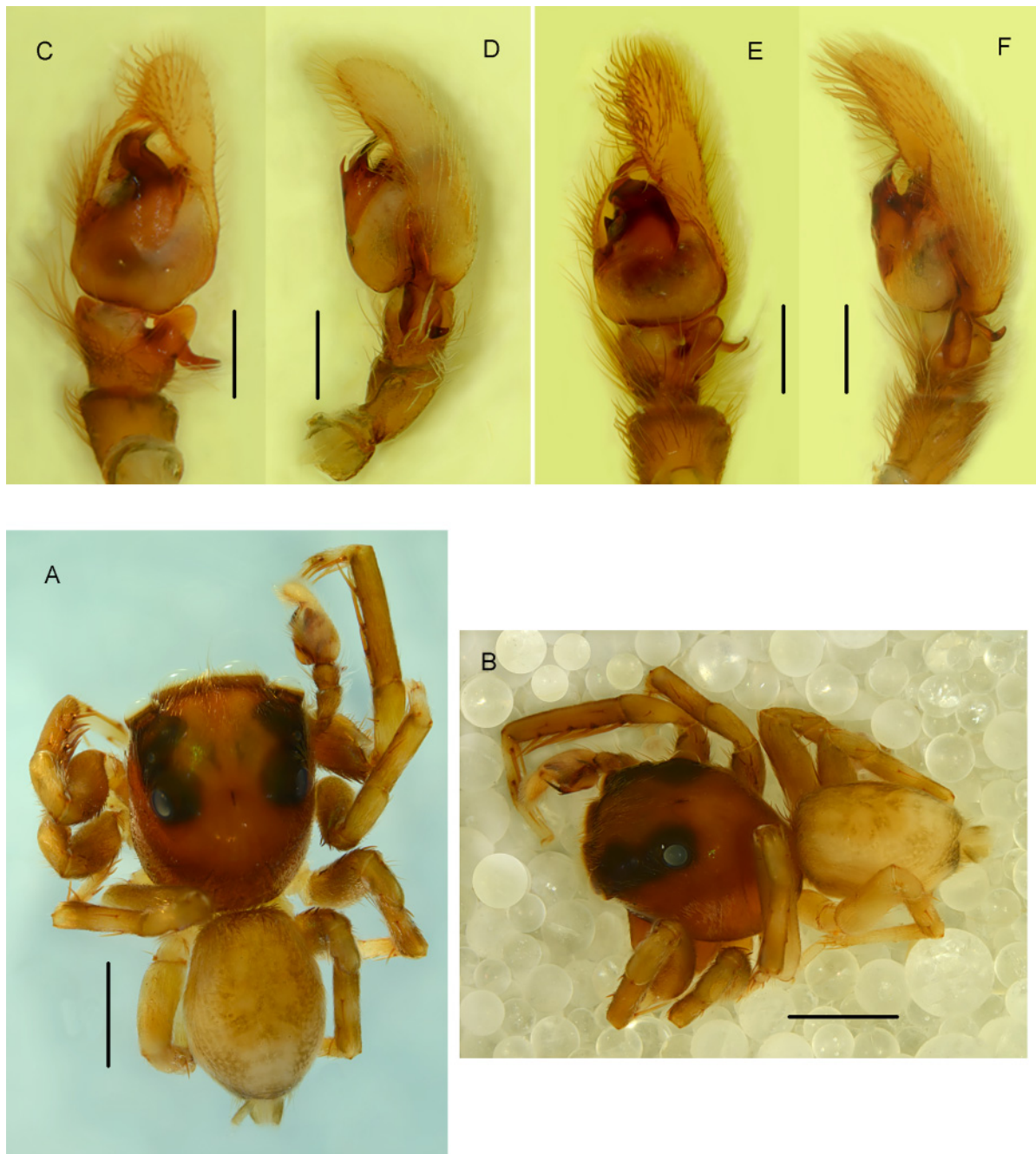
**Paratypes**

GUINEA: 4 ♂♂, 4 ♀♀, Mts Nimba, low grassy area, 1952–1962, M. Lamotte leg. (NHM); 1 ♀, Mts Nimba, savanna, 1952–1962, M. Lamotte leg. (NHM); 1 ♂, 1 ♀, Mts Nimba, Nion, 7°36' N, 8°28' W, 16 Jun. 1942, M. Lamotte leg. (NHM); 1 ♀, Mts Nimba, Gbié forest, near Deguelou, 595 m a.s.l., in soil litter, sieving, 18 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 149); 1 ♀, Mts Nimba, Gbié, Miau



**Fig. 13.** *Pochytoides spiniger* sp. nov., paratypes, ♂. **A–C.** Palpal organ. **A.** Ventral view. **B.** Anteroventral view. **C.** Retrolateral view. **D.** Palpal apophyses, dorsal view. **E–G.** Separated bulb. **E.** Ventral view. **F.** Retrolateral view. **G.** Prolateral view. Scale bar = 0.3 mm.

river, 469 m a.s.l., dry litter, sieving, 16 Mar. 2012, A. HERNARD *et al.* leg. (MRAC 238 706); 1 ♀, same locality, near river, in litter, sieving, 15 Mar. 2012, A. HERNARD *et al.* leg. (MRAC 238 738A); 2 ♂♂, Mts Nimba, Seringbara, Gouan, 601 m a.s.l., primary forest, in litter, sieving, 24 Feb. 2012, A. HERNARD *et al.* (MRAC 239 197A); 1 ♀, Mts Nimba, Seringbara, Gouan forest, near cliffs, in litter, sieving, 2 Oct. 2011, Van den Spiegel and A. HERNARD leg. (MRAC 237 986); 2 ♂♂, same locality, secondary forest, in litter, sieving, 29 Jan. 2012, Van den Spiegel *et al.* leg. (MRAC 237 849); 2 ♂♂, 1 ♀, Mts

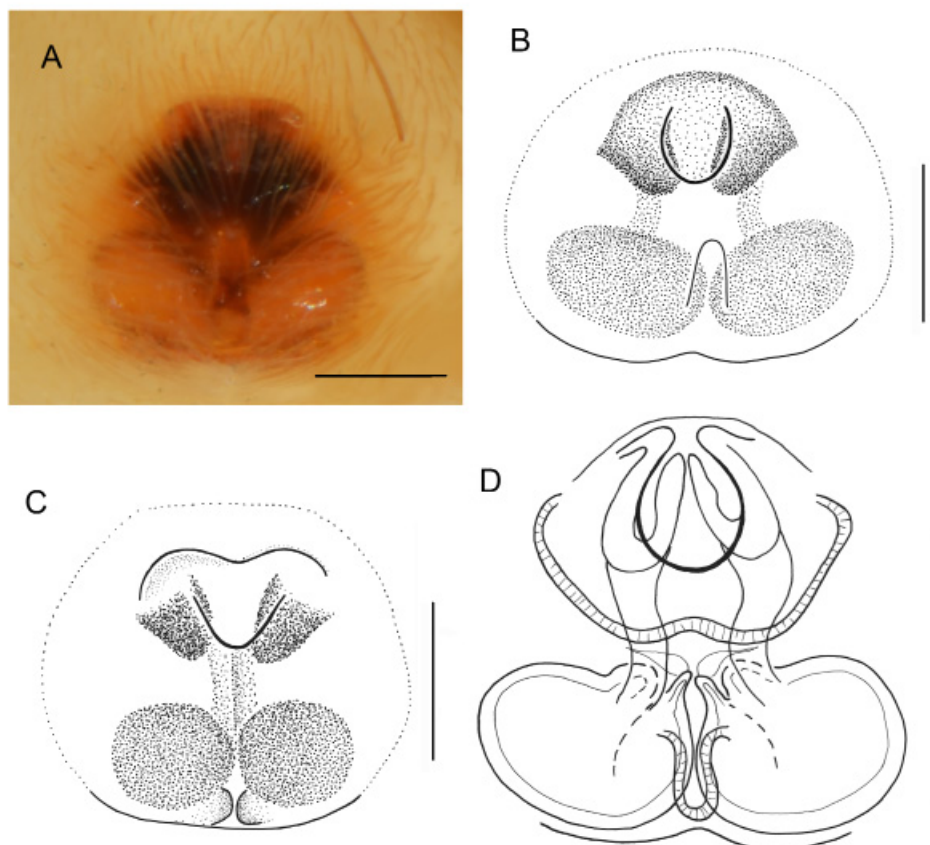


**Fig. 14.** *Pochytooides spiniger* sp. nov., paratypes, ♂ (E–F specimen from Nion). **A–B.** General appearance. **A.** Dorsal view. **B.** Dorsolateral view. **C–F.** Palpal organ. **C.** Ventral view. **D, F.** Retrolateral view. **E.** Ventroretrolateral view. Scale bars: A–B = 1.0 mm, C–F = 0.3 mm.

Nimba, Seringbara forest, in litter, sieving, 13 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 034B); 3 ♂♂, same locality, 606 m a.s.l., pitfall, 19 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 473A); 1 ♀, same locality, 722 m a.s.l., secondary forest, lower vegetation and dead tree trunks, hand collecting, 8 Oct. 2008, Van den Spiegel leg. (MRAC 225 727); 1 ♂, Mts Nimba, Fouenyi forest, 573 m a.s.l., soil litter, sieving, 1 Mar. 2012, A. Hernard *et al.* leg. (MRAC 238 838A); 2 ♀♀, Mts Nimba, Ga forest, 746 m a.s.l., primary forest, soil litter, sieving, 6 Mar. 2012, A. Hernard *et al.* leg. (MRAC 238 759); 1 ♀, Mts Nimba, Konilokho forest, 473 m a.s.l., pitfall, 16–19 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 192A); 1 ♀, Mts Nimba, Yeï forest, 601 m a.s.l., soil litter, sieving, 5 Mar. 2012, A. Hernard *et al.* leg. (MRAC 238 769); 1 ♂, Mts Nimba, Gbérémiyi, 469 m a.s.l., primary forest, sieving litter, 10 Mar. 2012, A. Hernard *et al.* leg. (MRAC 239 282); 1 ♀, Mts Nimba, station de pompage Zié, 1250 m a.s.l., forest, sieving litter under high grass, 11 Oct. 2011, Van den Spiegel and A. Hernard leg. (MRAC 237 943); 1 ♂, same locality, on litter, hand collecting, 3 Feb. 2012, A. Hernard *et al.* leg. (MRAC 239 068).

### Differential diagnosis

The male resembles that of *P. lamottei* sp. nov. in having a similar sinusoid shape of the anterior lobe of the bulb, but may be recognized by the presence of a short spike at the base of the lobe on its prolateral side (compare Fig. 13C with Fig. 1C). The female is similar to that of *P. perezi* comb. nov. in having



**Fig. 15.** *Pochytooides spiniger* sp. nov., paratypes, ♀. **A–C.** Epigyne. **D.** Internal structure of epigyne. Scale bars: 0.2 mm.

the epigyne with a V-shaped anterior depression, but may be distinguished by the atrial area narrower than the area occupied by spermathecae (Fig. 15A), quite the opposite to that of *P. perezi* comb. nov. (Fig. 8A–C).

## Description

### Male

**DIMENSIONS.** Cephalothorax: length 1.7–2.2, width 1.4–1.9, height 1.0–1.3. Eye field: length 0.9–1.3, anterior width 1.4–1.7, posterior width 1.2–1.5. Abdomen: length 1.5–1.8, width 1.2–1.5.

**COLOUR AND BODY.** General appearance as in Fig. 14A–B. Carapace brown, eye field blackish, anterior median eyes encircled by fawn scales. Some brown bristles near eyes of anterior row, white hairs form wide pale band on slopes of carapace. Clypeus with white hairs. Abdomen dark, greyish brown with light herring-bone pattern becoming in chevrons posteriorly, venter yellowish or greyish. Long brown bristles on anterior edge of abdomen. Anterior spinnerets yellow, posterior grey. Legs yellow with brown rings, femora brownish. Leg hairs and spines brown.

**GENITALIA.** Pedipalps clothed in dense whitish hairs. Palpal organ as in Figs 13A–G, 14 C–F. Retrolateral tibial apophysis blunt and wide, dorsal apophysis narrow perpendicular to retrolateral. Bulb triangular with narrowing anterior lobe. Sharp spike on prolateral side of this lobe at its base (Fig. 13A, C, F), retrolateral margin of the lobe strongly sclerotized basally (Fig. 13B, E).

### Female

**DIMENSIONS.** Cephalothorax: length 2.0–2.1, width 1.5–1.8, height 1.1–1.2. Eye field: length 1.1–1.2, anterior width 1.4–1.7, posterior width 1.3–1.5. Abdomen: length 2.1–2.5, width 1.2–1.6.

**COLOUR AND BODY.** Similar to male, abdomen slightly clearer, pattern with less contrast. Legs yellow with brownish rings at bases and ends of segments.

**GENITALIA.** Epigyne rounded with strongly sclerotized anterior part (Fig. 15A–C). Internal structure as in Fig. 15D, distinctly sclerotized edge around atria, spermathecae relatively large, accessory glands connected visible.

## *Thiratoscirtus (?) remyi* (Berland & Millot, 1941) comb. nov.

Fig. 16

*Pochyta (Pochytoides) remyi* Berland & Millot, 1941: 363, fig. 64c.

## Type material

### Holotype

GUINEA: ♀, cave Tassacouré (locality not identified), [1937, leg. J. Millot] (MNHN) [not examined].

The specimen was examined by Tamás Szűts (pers. com.). It is not a member of *Pochytoides* and the generic status of the species remains uncertain, requiring further study. The form of the epigyne (Fig. 16) is similar to that of some members of the genus *Thiratoscirtus* Simon, 1886.

## Discussion

*Pochytoides* is a small genus, currently containing eight species, which are known only from Guinea. Almost all of them are restricted to the Nimba Mountains. The species from the Nimba Mts are probably syntopic, in some cases specimens of 2–3 species were placed in the same vials, so they were possibly



collected together. The members of this genus are very similar in body shape, size and colouration. The differences in structure of their genitalia are nonetheless clear, although following the same general pattern. Because these species are closely related and well separated from the other groups, their generic status is postulated based on morphological dissimilarity.

Such a large a number of related species from the Nimba Mts fully supports recognition of this mountain range as an area of exceptional biological richness. The mountains are situated within the Guinean Forests of West Africa biodiversity hotspot, which harbours an especially rich flora and fauna with a high level of endemism (UNESCO World Heritage Centre 2016). In recognition of its unique value, the Nimba Range (jointly 180 km<sup>2</sup>) was declared a Strict Nature Reserve, after Guinea and Côte d'Ivoire became independent. UNESCO proclaimed Mount Nimba a biosphere reserve in 1980, and a World Heritage Site shortly thereafter.

This paper is a contribution to the knowledge of the spider diversity of the Nimba Mts and shows a high species diversity of this poorly known genus of jumping spiders.

### Acknowledgements

I would like to deeply thank Christine Rollard, Anthony Russell-Smith, Arnaud Henrard and Rudy Jocqué for sharing the material for this study. I am also grateful to Christine Rollard for her help with decoding the habitat abbreviations on some labels in M. Lamotte's collection and to Anthony Russell-Smith for valuable comments and improving the English.

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<https://doi.org/10.1016/j.ympev.2012.06.005>



**Fig. 16.** Holotype of *Pochyta remyi* Berland & Millot, 1941, ♀, epigyne (photo T. Szűts). Scale bar: 0.2 mm.

Maddison W.P. 2015. A phylogenetic classification of jumping spiders (Araneae: Salticidae). *Journal of Arachnology* 43: 231–292. <https://doi.org/10.1636/arac-43-03-231-292>

Metzner H. 1999. Die Springspinnen (Arachnida, Araneae, Salticidae) Griechenlands. *Andrias* 14: 1–279.

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UNESCO World Heritage Centre. 2016. *Mount Nimba Strict Nature Reserve*. Available from [whc.unesco.org](http://whc.unesco.org) [accessed 23 Feb. 2016].

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