
PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCES

Fourth Series

Volume 56, No. 25, pp. 337–377, 28 figs.

August 26, 2005

**Revision of the Spider Genus
Chrosioderma Simon (Araneae: Sparassidae)**

Diana Silva-Dávila

*Schlinger Chair of Arachnology Fellow, Department of Entomology,
California Academy of Sciences, 875 Howard Street, San Francisco, CA 94103;
Email: dsilva@calacademy.org*

Recent field work in Madagascar has yielded significant additional specimens of spiders attributable to the genus *Chrosioderma* Simon, 1897. Adults of *Chrosioderma albidum*, are here described for the first time. In addition, eight new species are represented in these collections and are described herein: *C. analalava*, *C. havia*, *C. mahavelona*, *C. mipentinapentina*, *C. namoroka*, *C. ranomafana*, *C. roaloha*, and *C. soalala*.

As a consequence of these studies, the spider genus *Chrosioderma* Simon, 1897, which previously was monotypic (excluding an undescribed specimen preserved in amber), is now comprised of nine species, all from Madagascar.

Madagascar is well known for the high endemism levels exhibited by many taxa. Sparassid spiders are not an exception inasmuch as about half of the recognized genera and 90% of the described species appear to be restricted to this island. Although there are currently only 35 sparassid species described from Madagascar (Platnick 2004), this number has been more than tripled as a result of our ongoing study.

An extensive faunal survey of spiders from Madagascar over a period of three years using various collecting techniques, in addition to the examination of museum collections, suggests that the Sparassidae is comprised of at least 160 morphospecies, some of which are now well represented by good series of male and female specimens. A comparison of population samples from various localities indicates a high species turnover, few widespread species, and numerous local endemics. A majority of the new species that have been discovered recently belong either to the sparassines or the heteropodines; a few others appear to represent groups of their own. Among the latter are the chrosiodermatines (Simon 1897:60).

The genus *Chrosioderma* is currently known from two species, one as yet undescribed in a piece of copal amber from eastern Africa (Simon 1897:61), and *C. albidum* Simon, 1897, apparently restricted to northeastern Madagascar. *Chrosioderma* appears to be rare in collections; the type species of this genus is known only from juvenile spiders, but recent field work has yielded some adult and additional juvenile specimens.

Although the phylogenetic relationships of *Chrosioderma* have not been studied yet, the examination of various sparassid taxa from a wide geographical range suggests at least three potential synapomorphies for supporting the monophyly of this genus, e.g., (1) the six to eight ventral paired-spines beneath anterior tibiae, seemingly occurring also in a new sparassid genus from Brasil (Rheims, pers. commun.); (2) the trapezoid shape of the abdomen, occurring also in an undescribed sparassid genus from Costa Rica and Colombia; (3) and the structure of the male and

female genitalia, which in part suggests a close relationship to an undescribed genus endemic to Madagascar.

Chrosioderma appears to comprise at least nine extant species, so far restricted to Madagascar. Unfortunately, the specimen reported in a piece of copal amber from eastern Africa (Simon 1897:61) could not be located.

MATERIAL AND METHODS

Specimens were examined following standard procedures for spiders. All measurements are in millimeters. Species descriptions are based upon a single individual, locality noted in parentheses. Digital images were made with a Leica stereoscope adapted to a digital camera and Auto-Montage software by Syncroscopy, Ltd.

ABBREVIATIONS.— AC, aciniform gland spigots; AER, anterior ocular row at its greatest width; AME, anterior median eyes; ALE, anterior lateral eyes; ALS, anterior lateral spinnerets; AN, anelli of subtegulum; BH, basal hematodocha; BS, base of spermatheca; C, conductor; CD, copulatory duct; CY, cylindrical gland spigots; Cym, cymbium; E, embolus; Eb, embolic base; Ep, embolic process; FD, fertilization duct; HS, head of spermatheca; LL, lateral lobes of epigynum; MA, tegular median apophysis; MAP, major ampullate gland spigots; mAP, minor ampullate gland spigots; MS, median sector of epigynum; nu, nubbin; OQA, ocular quadrangle, width of anterior median eye row; OQL, ocular quadrangle length at the greatest distance from AME to PME in frontal view; OQP, ocular quadrangle, width of posterior median eye row; P, petiole; PI, piriform gland spigots; PME, posterior median eye; PLE, posterior lateral eye; PER, posterior ocular row at their greatest width; PLS, posterior lateral spinnerets; PMS, posterior median spinnerets; Pp, pars pendula; RTA, retrolateral tibial apophysis; SC, scopula; ST, subtegulum; T, tegulum; tar, tartipore, Tsp, tegular subembolic process.

MUSEUM COLLECTIONS.— CAS – California Academy of Sciences, San Francisco (C. Griswold); MNHN – Museum National d'Histoire Naturelle, Paris (C. Rollard); MRAC – Royal Museum for Central Africa, Tervuren (R. Jocqué); ZMB – Museum für Naturkunde, Zoologisches Institut der Humboldt-Universität, Berlin (J. Dunlop).

Taxonomy

Genus *Chrosioderma* Simon, 1867

Chrosioderma Simon, 1897:61 (type species, by original designation, *Chrosioderma albidum* Simon, 1897:61, holotype juvenile female in MNHN, examined); Platnick, 2004.

Diagnosis.— Males and females differ from most other sparassids in the trapezoid-shaped abdomen (Figs. 1A–B, 5A). Males have a flagelliform embolus spiraling at least once around a large cymbial alveolus (as in Figs. 8A–C, 13A–D). Females have a lightly sclerotized epigynum, epigynal median sector bottle-shaped, lateral lobes with lateral hood-like projections (as in Figs. 11A–12A, 23A). Additionally, males and females have tibiae I–II with six to eight paired ventral spines.

DESCRIPTION.— Medium-sized spiders, total length 5.7–10.1. Slight sexual dimorphism. Carapace pale yellow (color in live specimens differs from those in ETOH; at least some species are green-colored), narrow pars cephalica, pars thoracica broad and slightly swollen (Figs. 1A–B). Carapace slightly longer than wide, ranging in length from 2.9–3.6 (♂♂) to 3.1–4.7 (♀♀). Fovea longitudinal, broad at front, sometimes absent. Eyes sometimes partly surrounded with black pig-

ment, arranged in two rows nearly as wide as pars cephalica (Figs. 1A–B, 2A); OQP/OQA 1.05–1.23. Clypeus $\frac{1}{4}$ or less AME diameter (Fig. 2A); chilum absent. Chelicerae slightly geniculate, small lateral condyle (Fig. 2A), three promarginal and three retromarginal teeth (Fig. 2B), often the most anterior promarginal tooth reduced to a small denticle, rarely absent. Endites convergent, roughly two times labium length. Serrula well developed (Figs. 2C–D). Labium as short or shorter than one half endite length, wider than long. Sternum longer than wide, obtuse and projecting between coxae IV.

Legs pale yellow, leg formula 1243, long and slender, femur I length/carapace width 1.68–3.18 ($\sigma\sigma$), 1.68–1.82 ($\varphi\varphi$); trochanters deeply notched. Preening combs absent. Both males and females have long, overlapping spines beneath tibiae-metatarsi I–II. Spination: Male (based on *C. albidum* CASENT 9002146): palpal femur d0-0-1-0; tibia d1-0-0-0, p2-0-0-0, r0-1-0-0; femur II d0-0-1-1-1, r0-0-0-1-0; III d0-0-1-1-0; IV d0-0-1-0-0, p0-0-0-0-1, r0-0-0-0-1; patella with no spines; tibia I missing but in a second male (CASENT 9001752) the spination pattern resembles that on tibia II; tibia II d01-1-1-0, v[6pairs]-0; III p0-1-0-1-0, v 2-0-0-2-0; IV d0-1-0-1-0, v0-0-0-2-0; metatarsi II p0-1-0-1-0, r0-1-0-1-0, v2-2-0-0-0; metatarsus III p0-1-0-1-0, v2-2-0-0-0; metatarsus IV p1-1-1-0-0, r0-1-1-1-0, v2-0-0-0-0. Female (based on *C. albidum* CASENT 9005610): palpal femur d0-0-1-0; tibia d1-0-0-0, p2-0-0-0, r0-1-0-0; tarsus p2-0-1-0, r1-0-1-0; femur I d0-1-1-1-0; II d0-1-1-1-0; III d0-0-1-1-0; IV d0-0-1-0-0, p0-0-0-0-1, r0-0-0-0-1; patella with no spines; tibiae I–II v[7pairs]-0; III p0-1-1-1-0, v 2-2-0-0-0; IV v2-2-0-0-0; metatarsi I–II p0-1-0-1-0, r0-1-0-1-0, v2-2-0-0-0; metatarsus III p0-1-0-1-0, r0-1-0-1-0, v2-2-0-0-0; metatarsus IV p0-1-0-1-1, r0-0-0-1-1, v2-2-0-0-0. Female pedipalp (Figs. 3A–B) with small claw bearing 4 teeth plus two or more denticles. Metatarsal membrane (Figs. 3C–D) with median lobe nearly as long as lateral lobes, occasionally truncated. Scopular brush of long hairs beneath metatarsi-tarsi (Figs. 3D, 4A). Legs with two tarsal claws, comb-like (Figs. 4A, 4C); claw tufts dense, at least some hairs with bifurcate tips (Fig. 4C). Tarsal organ capsulate (Figs. 3A, 4B, 4D, 22D). Tarsal and metatarsal trichobothria arranged in one to two rows, dorsal plate with fine longitudinal striations and one to four transversal ridges, basal plate sitting on a cup-like cuticular projection (Figs. 4B, 4D).

Abdomen pale yellow, trapezoidal in shape (Figs. 1A–B, 5A), ranging in length from 2.55–3.6 ($\sigma\sigma$) to 3.1–5.75 ($\varphi\varphi$), widest at truncated end; sometimes with two to four guanine markings around cardiac region (Figs. 1A–B); venter pale yellow; colulus absent; anal tubercle large and conical covered with long dorsal setae (Fig. 5A). Epiandrous spigots in small clusters along a nearly straight row (Fig. 5B).

Spinnerets (Fig. 6A): anterior laterals (ALS) conical and stout; posterior medians (PMS) conical, small; posterior laterals (PLS) cylindrical, large and widely separated (Fig. 5A). Male ALS (Fig. 6B) with one major ampullate gland spigot plus a nubbin, and more than 30 piriform gland spigots; PMS (Fig. 6C) with one minor ampullate gland spigot plus a nubbin and a tartipore, and 4 aciniform gland spigots; PLS (Fig. 6D) with at least 14 aciniform gland spigots. Female ALS (Fig. 7A) with 2 major ampullate gland spigots, a tartipore, and more than 30 piriform gland spigots; PMS (Figs. 7B–C) with one minor ampullate gland spigot (mAP) plus a tartipore separated from a second mAP, at least two cylindrical gland spigots, and more than 20 aciniform gland spigots; PLS (Fig. 7D) with at least one cylindrical gland spigot and more than 20 aciniform gland spigots.

Male palpal tibia (Figs. 8–9) as long as one half cymbium length or more; RTA long. Cymbium lacking spines, dorsal scopula present (Figs. 8–9). Cymbial bulb with small petiole (Fig. 9); subtegulum with two anelli (Figs. 9–10); tegulum (Figs. 8, 13A–D, 18A, C, 26A) shorter than cymbial alveolus, often swollen from middle to base; embolus (Figs. 8–9) flagelliform, often arising on prolateral side of tegulum (as in Fig. 26A), occasionally mesal (as in Fig. 18A); spermatheca duct encircles tegulum; conductor if present, a short hyaline lobate projection (as in Figs. 10D, 21B)

arising on prolateral side of tegular apex (as in Fig 22C); no median apophysis.

Epigynum (as in Figs. 11A–12A, 14A) lightly sclerotized; epigynal foldings weakly marked, epigynal median sector bottle-shaped; lateral lobes with hood-like projections. Vulva (as in Figs. 11B–12B, 14B) with greatly enlarged sac like copulatory ducts; spermathecae head small, sometimes bifurcated (as in Fig. 11B); spermathecal base projecting into a long, slender tube, separated from head by a short stalk (Figs. 11B, 12B); fertilization ducts small, directed forward.

COMPOSITION.— Nine species, eight new to science.

NATURAL HISTORY.— Juvenile specimens were green-colored when collected; they became pale yellow in ETOH 75%. Adult specimens were found at day or night while doing general collecting; or in malaise traps; juveniles specimens were mostly found by beating low vegetation. The habitat comprises various types of vegetation ranging from tropical dry forest to montane and lowland rainforests throughout Madagascar (Fig. 28).

DISTRIBUTION.— Known from eastern Africa (a piece of copal amber) and Madagascar (Maps 1–2).

Key to the Species of *Chrosioderma*

- 1a. Males 2
- 1b. Females..... 8
- 2a. Conductor present (as in Fig. 21B)..... *C. ranomafana*
- 2b. Conductor absent..... 3
- 3a. Tegulum shorter than one half cymbial length, strongly projecting at base (Figs. 18A–C) *C. mahavelona*
- 3b. Tegulum as long or longer than one half cymbial length (as in Fig. 13B)..... 4
- 4a. Tegulum spherical, embolic base strongly projecting forwards (Figs. 25A–C).... *C. soalala*
- 4b. RTA and tegulum otherwise; embolic base not so projected 5
- 5a. RTA swollen at middle (Fig. 20C); tegulum nearly oval, slightly projecting forward (Figs. 20A, D); legs with dark spots, spine sockets with black hairs (Fig. 1A)..... *C. namoroka*
- 5b. RTA and tegulum otherwise; legs lacking markings..... 6
- 6a. Tegulum speckled (as in Fig. 19B)..... *C. mipentinapentina*
- 6b. Tegulum lacking specks 7
- 7a. RTA strongly indented at apex (Fig. 13C); tegulum vertically oriented, proximal edge almost rounded, hiding subtegulum entirely (Figs. 13A–B)..... *C. albidum*
- 7b. RTA not so shaped; tegulum tilted to the left, proximal edge partly overlapping subtegular projection (Figs. 16A, 16D)..... *C. havia*
- 8a. Epigynal hood-like projections medial (Fig. 17A), base of spermatheca (BS) swollen near fertilization ducts (Fig. 17B)..... *C. havia*
- 8b. Epigynal hood-like projections posterior or anterior, BS otherwise..... 9
- 9a. Epigynal hood-like projections postero-lateral (Fig. 14A–15A, 27A)..... 10
- 9b. Epigynal hood-like projections antero-lateral (Figs. 11A, 12A, 23A)..... 12
- 10a. Epigynum large, CD with nearly transverse posterior loop (Fig. 14B) *C. albidum*
- 10b. Epigynum smaller, CD lacking a transverse posterior loop 11

- 11a. Epigynal hood-like projections small, hardly noticeable (Fig. 15A) *C. analalava*
 11b. Epigynal hood-like projections wider, conspicuous (Fig. 27A) *C. soalala*
- 12a. Head of spermatheca asymmetrically bifid (Figs. 11B, 24B) *C. roaloha*
 12b. Head of spermatheca oval-shaped (Figs. 12B, 19B) *C. ranomafana*

***Chrosioderma albidum* Simon**

Figs. 13–14; Map 1

Chrosioderma albidum Simon, 1897:61, two juvenile syntypes (jar 1660, number 16.971) from Diego Suarez, in MNHN, examined); Platnick, 2004.

DIAGNOSIS.— Males with RTA strongly indented at apex (Figs. 13A–B), tegulum (Figs. 13A–D) deeply excavated at middle; they differ from *C. mahavelona* in having an oval-shaped tegulum, nearly as long as $\frac{3}{4}$ cymbial length. Females have a large epigynum with small postero-lateral hood like processes (Fig. 14A) and vulva as in Fig 14B.

MALE (7 km N Joffreville).— Total length 7.2. Carapace and abdomen pale yellow; abdomen with four guanine spots on cardiac region. Carapace 3.7 long, 3.1 wide; ocular area 0.49 long, 1.4 wide; OQA 0.7; OQP 0.79; diameter of eyes AM:AL:PM:PL, 0.24:0.21:0.19:0.17; AME-AME 0.24; AME-ALE 0.09; ALE-ALE 0.86; PME-PME 0.4; PME-PLE 0.13; PLE-PLE 1.08. Clypeal height 0.05. Sternum 1.88 long, 1.58 wide; labium 0.4 long, 0.64 wide; endites 0.9 long, 0.56 wide. Femur II 2.7 times carapace width. Spination: leg I missing; leg II – tibia v6 pairs, metatarsus v2-2-0. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	0	8.4	5.0	7.1	2.03
Patella	0	2	1.5	1.6	0.7
Tibia	0	9.5	4.5	6.9	1.08
Metatarsus	0	9.6	4.8	9.0	---
Tarsus	0	1.9	1.2	1.5	2.38
Total	0	31.4	17.0	19.2	6.19

RTA (Figs. 13A–B) strongly indented at apex; tegulum oval-shaped (Figs. 13 A–D) nearly as long as $\frac{3}{4}$ cymbial length, tegular sclerotized process as in Figures 13A–B; conductor absent.

FEMALE (Forêt Andavakoera).— Total length 10.1. Pale yellow spider, abdomen with four guanine spots. Carapace 4.7 long, 4.0 wide; ocular area 0.62 long, 1.72 wide; OQA 0.78; OQP 0.96; diameter of eyes AM:AL:PM:PL, 0.24:0.22:0.22:0.2; AME-AME 0.32; AME-ALE 0.18; ALE-ALE 1.1; PME-PME 0.52; PME-PLE 0.22; PLE-PLE 1.4. Clypeal height 0.05. Sternum 1.97 long, 2.28 wide; labium 0.54 long, 0.86 wide; endites 1.24 long, 0.8 wide. Femur I 1.68 times carapace width. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	6.7	6.9	4.2	5.9	1.08
Patella	2.4	2.4	1.6	2.0	0.9
Tibia	7.5	7.1	3.6	5.3	1.4
Metatarsus	7.2	6.6	3.7	6.4	---
Tarsus	1.6	1.4	1.0	1.2	2.4
Total	25.4	24.4	14.1	20.8	5.78

Epigynum (Fig. 14A) with small postero-lateral hood-like projections; vulva as in Fig. 14B.

MATERIAL EXAMINED.— MADAGASCAR: **Antsiranana:** 7 km N Joffreville, 12°20'S, 49°15'E, 360 m, malaise trap in dry forest, 27.iv–13.v.2001 (R. Harin'Hala, CASENT 9002146), 1 ♂ 1 immature ♂; Forêt

Andavakoera, 21 km 75° ENE Ambilobe, 13°07.1'S, 49°33.8'E, 425 m, general collecting, 15–17.xii.2003 (B. L. Fisher et al., CASENT 9018714), 1 ♀; Parc National Montagne d'Ambre, 12°31'S, 49°11'E, 975 m, malaise trap, 4–19.iii.2001 (R. Harin'Hala, CASENT 9001752), 1 ♂; Madagascar, (jar 1660, MNHN 9177), 1 juvenile ♀.

DISTRIBUTION.— Known from northern Madagascar (Map 1).

***Chrosioderma analalava* Silva-Davila, sp. nov.**

Fig. 15; Map 1

TYPES.— Female holotype from Forêt d'Analalava, 29.6 km 280° W Ranohira, 22°35'30"S, 045°7'42"E, 700 m, dry forest on sandy soil, general collecting day, 1–15.ii.2003 (Fisher, Griswold et al. BLF 7389), deposited in CAS.

ETYMOLOGY.— The species name is a noun in apposition taken from the type locality.

DIAGNOSIS.— Females have a nearly unsclerotized, small epigynum (Fig. 15A) with weakly marked postero-lateral hood like projections.

MALE.— Unknown.

FEMALE (holotype).— Total length 6.4. Carapace and abdomen pale yellow; abdomen with four guanine spots. Carapace 3.1 long, 2.8 wide; ocular area 0.48 long, 1.16 wide; OQA 0.56; OQP 0.64; diameter of eyes AM:AL:PM:PL, 0.14:0.11:0.13:0.13; AME-AME 0.28; AME-ALE 0.13; ALE-ALE 0.8; PME-PME 0.39; PME-PL 0.18; PL-PL 0.98. Clypeal height 0.06. Sternum 1.56 long, 1.53 wide; labium 0.38 long, 0.58 wide; endites 0.86 long, 0.62 wide. Femur I 1.82 times carapace width. Spination: tibia I-II v6 pairs, metatarsi I-II v2-2-0. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	5.1	5.25	3.1	4.5	1.28
Patella	1.55	1.6	1.1	1.3	0.63
Tibia	5.6	6.0	2.75	3.95	0.98
Metatarsus	4.85	5.5	2.55	4.75	---
Tarsus	1.1	1.3	0.75	0.95	1.7
Total	18.2	19.65	10.25	15.45	4.59

Epigynum and vulva as in Figures 15A–B.

NOTES.— Right book lung with one dipteran larva; II right tarsus lacking claw tufts and tarsal claw with no teeth, probably lost in a previous stage and regenerated in the next moult.

MATERIAL EXAMINED.— MADAGASCAR: **Fianarantsoa**: HOLOTYPE above (CASENT 9015910); Forêt d'Analalava, 29.6 km 280° W Ranohira, 22°35'30"S, 045°7'42"E, 700 m, dry forest on sandy soil, general collecting day, 1–15.ii.2003 (Fisher, Griswold et al., CASENT 9015958), 1 juvenile.

DISTRIBUTION.— Known from South central Madagascar (Map 1).

***Chrosioderma havia* Silva-Davila, sp. nov.**

Figs. 16–17; Map 2

TYPES.— Male holotype from Parc National de Montagne d'Ambre, 12°30'52"S, 49°10'53"E, 960 m, malaise trap, 21–26.i.2001 (M.E. Irwin, E.I. Schlinger, R. Harin'Hala), deposited in CAS.

ETYMOLOGY.— The species name is from the Malagasy for “left” in reference to the orientation of the tegulum.

DIAGNOSIS.— Males have a tegulum (Fig. 16A) with a rounded sub-embolic process tilted towards the left, and subtegulum projecting from beneath the embolus base (Fig. 16A). Females have epigynal lateral lobes with large mid-lateral hood like projections (Fig. 17A).

MALE (holotype).— Total length 6.7. Carapace and abdomen pale yellow. Carapace 3.2 long,

2.9 wide; ocular area 0.45 long, 1.24 wide; OQA 0.68; OQP 0.76; diameter of eyes AM:AL:PM:PL, 0.25:0.16:0.16:0.16; AME-AME 0.25; AME-ALE 0.09; ALE-ALE 0.81; PME-PME 0.44; PME-PL 0.11; PLE-PL 1.0. Clypeal height 0.05. Sternum 1.72 long, 1.54 wide; labium 0.32 long, 0.6 wide; endites 0.88 long, 0.5 wide. Femur I 2.6 times carapace width. Spination: tibia I v7 pairs, tibia II v6 pairs, metatarsi I-II v2-2-0. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	6.6	6.5	3.8	5.3	1.75
Patella	1.6	1.6	1.2	1.3	0.65
Tibia	7.8	7.3	3.6	5.2	1.0
Metatarsus	8.4	7.6	3.8	6.9	---
Tarsus	2.0	1.8	1.0	1.4	2.25
Total	26.4	24.8	13.4	20.1	5.65

RTA in retrolateral view, nearly rectangular (Fig. 16B); oval-shaped tegulum, nearly as long as $\frac{3}{4}$ cymbial length; tilted towards the left and with a rounded sclerotized process (Fig. 16A), slightly swollen at middle, embolus base projecting basally over subtegulum (Figs. 16A, 16C–D); conductor absent.

FEMALE (Forêt Bekaraoka).— Total length 8. Pale yellow as in male. Carapace 3.55 long, 3.15 wide; ocular area 0.59 long, 1.39 wide; OQA 0.69; OQP 0.78; diameter of eyes AM:AL:PM:PL, 0.23:0.18:0.18:0.18; AME-AME 0.25; AME-ALE 0.13; ALE-ALE 0.91; PME-PME 0.48; PME-PL 0.13; PLE-PL 1.13. Clypeal height 0.06. Sternum 2.03 long, 1.63 wide; labium 0.4 long, 0.68 wide; endites 0.92 long, 0.62 wide. Femur I 1.75 times carapace width. Spination: tibiae I-II v7 pairs, metatarsi I-II v2-2-0. Legs III-IV right and IV left missing. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	5.5	5.5	3.3	0	1.53
Patella	1.85	1.8	1.3	0	0.68
Tibia	6.5	6.15	2.9	0	1.03
Metatarsus	5.9	5.35	2.8	0	---
Tarsus	1.25	1.15	0.8	0	1.95
Total	21.1	20.2	11.1	0	5.19

Epigynum (Fig. 17A) with large mid-lateral hood-like projections. Vulva as in Fig. 17B.

MATERIAL EXAMINED.— MADAGASCAR: **Antsiranana**: HOLOTYPE above (CASENT 9001631); Forêt Bekaraoka, 6.8 km 60° ENE Daraina, 13°10.0'S, 49°42.6'E, 150 m, general collecting at night, 7–9.xii.2003 (B.L. Fisher et al., CASENT 9018732), 1 ♀.

NOTES.— Between the carapace and the first right coxa of the male holotype, there is one small dipteran larva; the female specimen has a small larva inside the left booklung (only visible after removal of epigynum).

DISTRIBUTION.— Known from northern Madagascar (Map 1).

***Chrosioderma mahavelona* Silva-Davila, sp. nov.**

Fig. 18; Map 1

TYPES.— Male holotype from Tamatave, Foulpointe, [17°40'S, 049°31'E, 0 m], forest on sandy soil, vii.1995 (A. Pauly), deposited in MRAC, #205-946.

ETYMOLOGY.— The species name is a noun in apposition taken from the type locality (Mahavelona = Foulpointe).

DIAGNOSIS.— Males differ by having a stout, nearly round tegulum about one half cymbial length and strongly projecting at base (Figs. 18A–C).

MALE (holotype).— Total length 7.3. Carapace and abdomen pale yellow. Carapace 3.35 long, 2.85 wide; ocular area 0.56 long, 1.3 wide; OQA 0.7; OQP 0.56; diameter of eyes AM:AL:PM:PL, 0.24:0.19:0.19:0.16; AME-AME 0.21; AME-ALE 0.05; ALE-ALE 0.78; PME-PME 0.41; PME-PL 0.08; PLE-PL 1.03. Clypeal height 0.03. Sternum 1.78 long, 1.6 wide; labium 0.4 long, 0.6 wide; endites 0.9 long, 0.54 wide. Femur I 2.27 times carapace width. Spination: tibia I v7 pairs (1 spine missing on one side of left leg), tibia II v6 pairs, metatarsi I-II v2-2-0. Leg measurements:

	I	II	III	IV	Palp
Femur	7.6	7.7	4.4	7.8	1.78
Patella	1.6	1.5	1.2	1.2	0.63
Tibia	9.1	9.0	4.4	6.2	1.0
Metatarsus	9.4	9.0	4.5	7.8	---
Tarsus	1.9	1.8	1.0	1.4	2.48
Total	29.6	29.0	15.5	21.5	5.89

RTA (Figs. 18A–C) slightly indented at apex; tegulum (Figs. 18A–C) nearly one half cymbial length, strongly projecting forwards.

FEMALE.— Unknown

MATERIAL EXAMINED.— MADAGASCAR: **Toamasina**: HOLOTYPE above.

DISTRIBUTION.— Known from eastern Madagascar (Map 1).

***Chrosioderma mipentinapentina* Silva-Davila, sp. nov.**

Fig. 19; Map 1

TYPES.— Male holotype from 7 km SE Andasibe National Park, 18°57.67'S, 048°27.01'E, 3020 ft, rainforest, malaise, 22.i–9.iii.2001 (R. Harin'Hala), deposited in CAS.

ETYMOLOGY.— The species name is from the Malagasy for “speckled” in reference to the texture of the tegulum.

DIAGNOSIS.— Males are recognized by having a tegulum (Figs. 19A–B) covered with speckles.

MALE (holotype).— Total length 7.4. Carapace and abdomen pale yellow. Carapace 3.6 long, 3.1 wide; ocular area 0.54 long, 1.32 wide; OQA 0.72; OQP 0.8; diameter of eyes AM:AL:PM:PL, 0.26:0.18:0.18:0.16; AME-AME 0.26; AME-ALE 0.00; ALE-ALE 0.86; PME-PME 0.44; PME-PL 0.16; PLE-PL 1.1. Clypeal height 0.08. Sternum 1.9 long, 1.8 wide; labium 0.4 long, 0.56 wide; endites 1.0 long, 0.56 wide. Femur I 1.92 times carapace width. Spination: tibia I-II v6 pairs (+1, one side of left Ti I), metatarsi I-II v2-2-0. Leg measurements:

	I	II	III	IV	Palp
Femur	6.9	6.7	4.3	5.6	1.85
Patella	1.9	1.9	1.4	1.4	0.68
Tibia	8.4	7.8	4.0	5.5	0.93
Metatarsus	8.9	8.3	4.2	7.2	---
Tarsus	2.2	1.8	1.0	1.4	2.4
Total	28.3	26.5	14.9	21.1	5.86

Male palp (Figs. 19A–D) with tegulum nearly as long as $\frac{3}{4}$ cymbial length and covered with speckles, rounded sclerotized process.

FEMALE.— Unknown

MATERIAL EXAMINED.— MADAGASCAR: **Toamasina**: HOLOTYPE above (CASENT 9005627).

DISTRIBUTION.— Known from eastern Madagascar (Map 1).

***Chrosioderma namoroka* Silva-Davila, sp. nov.**

Figs. 1A, 20; Map 1

TYPES.— Male holotype from Parc National de Namoroka, 16.9 km 317°NW Vilanandro, 16°24'24"S, 045°18'36"E, 100 m, tropical dry forest, beating low vegetation, 12–16.xi.2002 (Fisher, Griswold et al.), deposited in CAS.

ETYMOLOGY.— The species name is a noun in apposition taken from the type locality.

DIAGNOSIS.— Males are recognized by having a tegulum extending as long as one half cymbial length and a 'J' shaped sclerotized process (Fig. 20A); additionally, all legs have dorsal black hairs surrounding the spine sockets (Fig. 1A).

MALE (holotype).— Total length 6.9. Carapace and abdomen pale yellow; carapace partly coated with black hairs; legs with dark markings and black hairs surrounding spine sockets (Fig. 1A); abdomen with two guanine spots (Fig. 1A). Carapace 3.05 long, 2.55 wide; ocular area 0.48 long, 1.19 wide; OQA 0.67; OQP 0.73; diameter of eyes AM:AL:PM:PL, 0.25:0.17:0.17:0.17; AME-AME 0.21; AME-ALE 0.05; ALE-ALE 0.76; PME-PME 0.4; PME-PL 0.13; PL-PL 0.92. Clypeal height 0.05. Sternum 1.58 long, 1.45 wide; labium 0.34 long, 0.52 wide; endites 0.8 long, 0.44 wide. Femur I 3.18 times carapace width. Spination: tibia I-II v7 pairs; metatarsi I-II v2-2-0. Left legs I-II, IV missing. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	8.1	7.8	4.5	6.5	1.8
Patella	1.6	1.6	1.1	1.1	0.65
Tibia	9.9	9.3	4.4	6.9	0.93
Metatarsus	10.8	9.7	4.7	8.4	---
Tarsus	2.1	1.8	1.0	1.4	2.2
Total	32.5	30.2	15.7	24.3	5.58

Male palp as in Figures 20A–D.

FEMALE.— Unknown

MATERIAL EXAMINED.— MADAGASCAR: **Mahajanga**: HOLOTYPE above (CASENT 9017956).

DISTRIBUTION.— Known from north western Madagascar (Map 1).

***Chrosioderma ranomafana* Silva-Davila, sp. nov.**

Figs. 10, 12, 21–23; Map 1.

TYPES.— Male holotype from Ranomafana, Radio Tower, 21°15.05'S, 047°24.4'E, 3700 ft, forest edge, malaise canopy trap, 27.ii–9.iii.2003 (R. Harin'Hala), deposited in CAS.

ETYMOLOGY.— The species name is a noun in apposition taken from the type locality.

DIAGNOSIS.— Males have a prolateral conductor arising on tegular apex (Figs. 10D, 21A–C, 22A, 22C). Females have epigynal lateral lobes with small antero-lateral hood like projections (Figs. 12A, 23A); they differ from *C. roaloha* in having an elongate spermathecal head (Figs. 12B, 23B).

MALE (holotype).— Total length 6.6. Carapace and abdomen pale yellow. Carapace 3.2 long, 2.75 wide; ocular area 0.5 long, 1.24 wide; OQA 0.68; OQP 0.74; diameter of eyes AM:AL:PM:PL, 0.21:0.18:0.15:0.18; AME-AME 0.25; AME-ALE 0.06; ALE-ALE 0.79; PME-PME 0.43; PME-PL 0.13; PL-PL 0.96. Clypeal height 0.05. Sternum 1.74 long, 1.66 wide; labium 0.36 long, 0.62 wide; endites 0.96 long, 0.62 wide. Femur I 2.54 times carapace width. Legs I left and II missing. Spination: tibia I v7 pairs, metatarsi I v2-2-0. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	7.0	-	4.1	5.9	1.8
Patella	1.6	-	1.3	1.3	0.7
Tibia	8.8	-	4.3	6.1	0.9
Metatarsus	9.3	-	4.5	8.0	---
Tarsus	1.9	-	1.0	1.4	2.4
Total	28.6	-	15.2	22.7	5.8

RTA (Figs. 21A, 21C, 22A) elongate and sinuous, projecting into a small hook; cymbium with a short lobate retrolateral projection (Fig. 22B); tegulum (Figs. 21A–D; 22A–C) shorter than ½ cymbial length, nearly as wide as alveolus width; embolus originating mesally (Figs. 21B, 22A–B); conductor short, arising on prolateral side of tegular apex (Figs. 10D, 21A–C, 22A, 22C).

FEMALE (Ranomafana, Belle Vue).— Total length 9.5. Pale yellow as in male. Carapace 3.55 long, 3.15 wide; ocular area 0.46 long, 1.43 wide; OQA 0.75; OQP 0.86; diameter of eyes AM:AL:PM:PL, 0.24:0.17:0.17:0.17; AME-AME 0.29; AME-ALE 0.13; ALE-ALE 1.0; PME-PME 0.52; PME-PLE 0.17; PLE-PLE 1.16. Clypeal height 0.08. Sternum 2.0 long, 1.8 wide; labium 0.4 long, 0.68 wide; endites 1.0 long, 0.66 wide. Femur I 1.61 times carapace width. Spination: tibiae I-II v7 pairs, metatarsi I-II v2-2-0. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	5.7	5.8	3.8	5.1	1.53
Patella	1.7	1.7	1.2	1.3	0.73
Tibia	6.7	6.6	3.3	4.8	1.13
Metatarsus	6.2	5.9	3.4	5.7	---
Tarsus	1.5	1.4	0.9	1.2	2.08
Total	21.8	21.4	12.6	18.1	5.47

Epigynum (12A, 23A) with small antero-lateral hood-like projections. Vulva as in Figures 12B, 23B.

MATERIAL EXAMINED.— MADAGASCAR: **Fianarantsoa**: Ranomafana, HOLOTYPE above (CASENT 1018736); Ranomafana, Belle Vue, 21°15.99'S, 047°25.21'E, 3340 ft, rainforest, malaise canopy trap, 14–21.i.2002 (R. Harin'Hala, CASENT 9005610), 1 ♀; Ranomafana, Radio Tower, 21°15.05'S, 047°24.43'E, 3700 ft, forest edge, open area, malaise trap (28.i–04.ii.2002 (R. Harin'Hala, CASENT 9010722), 1 ♂; Madagascar (Hildebrandt, ZMB 7871), 1 ♀ 6J.

DISTRIBUTION.— Known from central Madagascar (Map 1).

***Chrosioderma roaloha* Silva-Davila, sp. nov.**

Figs. 11, 24; Map 2.

TYPES.— Female holotype from Parc National Ranomafana, Talatakely, 21°15'S, 047°25.26'E, 915–1000m, 30.x–20.xi.1998 (V.F. Lee and K. Ribardo), deposited in CAS.

ETYMOLOGY.— The species name is from the Malagasy for “two heads” in reference to the bifid spermatheca head.

DIAGNOSIS.— Females have epigynal lateral lobes with small antero-lateral hood like projections (Fig. 11A, 24A); they differ from *C. ranomafana* in having the spermathecal head projecting into two asymmetrical branches (Figs. 11B, 24B).

MALE.— Unknown.

FEMALE (holotype).— Total length 9.1. Carapace and abdomen pale yellow. Carapace 3.9 long, 3.4 wide; ocular area 0.51 long, 1.49 wide; OQA 0.71; OQP 0.86; diameter of eyes AM:AL:PM:PL, 0.19:0.17:0.17:0.13; AME-AME 0.3; AME-ALE 0.14; ALE-ALE 0.98; PME-PME 0.52; PME-PLE 0.19; PLE-PLE 1.24. Clypeal height 0.05. Sternum 1.95 long, 1.75 wide;

labium 0.42 long, 0.7 wide; endites 1.06 long, 0.9 wide. Femur I 1.61 times carapace width. Spination: tibia I-II v7 pairs (+1, one side of right Ti I), metatarsi I-II v2-2-0. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	5.7	5.8	3.6	4.9	1.55
Patella	1.8	1.8	1.3	1.3	0.4
Tibia	6.6	6.5	3.4	4.7	1.13
Metatarsus	6.1	5.8	3.3	5.6	---
Tarsus	1.5	1.5	1.0	1.2	2.1
Total	21.7	21.4	12.6	16.5	5.18

Epigynum (Figs. 11A, 24A) with small antero-lateral hood-like projections. Vulva as in Figures 11B, 24B.

MATERIAL EXAMINED.— MADAGASCAR: **Fianarantsoa:** HOLOTYPE above (CASENT 9008465); Talatakely, 21°12'S, 047°27'E, 18.v.1992 (V. and B. Roth and Albert, CASENT 9008508), 1 juvenile ♂.

DISTRIBUTION.— Known from central Madagascar (Map 2).

***Chrosioderma soalala* Silva-Davila, sp. nov.**

Figs. 8–9, 25–27; Map 2.

TYPES.— Male holotype from Parc National de Baie de Baly, 12.4 km 337° NNW Soalala, 16°0'36"S, 045°15'54"E, 10 m, tropical dry forest, beating low vegetation, 26–30.xi.2002 (Fisher, Griswold et al.), deposited in CAS.

ETYMOLOGY.— The species name is a noun in apposition taken from the type locality.

DIAGNOSIS.— Males are recognized by having a spherical tegulum and a large sclerotized process at the embolus base (Figs. 8A–C, 9, 25A–C, 26A–D).

MALE (holotype).— Total length 5.65. Carapace and abdomen pale yellow. Carapace 2.85 long, 2.3 wide; ocular area 0.41 long, 1.03 wide; OQA 0.6; OQP 0.63; diameter of eyes AM:AL:PM:PL, 0.24:0.16:0.17:0.17; AME-AME 0.17; AME-ALE 0.00; ALE-ALE 0.86; PME-PME 0.29; PME-PL 0.09; PLE-PL 0.75. Clypeal height 0.03. Sternum 1.55 long, 1.28 wide; labium 0.32 long, 0.48 wide; endites 0.74 long, 0.42 wide. Femur I 2.83 times carapace width. Spination: tibia I-II v6 pairs ; metatarsi I-II v2-2-0. I left leg missing. Leg measurements:

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>Palp</i>
Femur	6.5	6.2	3.6	5.4	1.55
Patella	1.6	1.5	0.9	1.1	0.55
Tibia	7.7	7.1	3.2	5.1	0.83
Metatarsus	8.8	7.3	3.5	6.6	---
Tarsus	1.9	1.5	0.8	1.1	1.48
Total	24.6	23.6	12.0	19.3	4.41

Tegulum partly sclerotized (Figs. 25–26); embolus base with large proximal process; subtegulum projecting into a large ventral lobe (Figs. 8A–C, 9, 25A–C, 26A–D).

FEMALE (Tombeau Vazimba).— Total length 8.0. Ornamentation pattern as in male. Carapace 3.45 long, 3.1 wide; ocular area 0.43 long, 1.23 wide; OQA 0.6; OQP 0.68; diameter of eyes AM:AL:PM:PL, 0.19:0.15:0.14:0.15; AME-AME 0.25; AME-ALE 0.09; ALE-ALE 0.81; PME-PME 0.38; PME-PL 0.18; PLE-PL 0.99. Clypeal height 0.05. Sternum 1.75 long, 1.69 wide; labium 0.32 long, 0.54 wide; endites 0.86 long, 0.52 wide. Femur I 1.74 times carapace width. Leg measurements:

	I	II	III	IV	Palp
Femur	5.4	5.5	3.4	4.7	1.38
Patella	1.7	1.7	1.2	1.3	0.63
Tibia	5.8	5.9	2.9	4.2	1.0
Metatarsus	5.4	5.0	2.6	5.0	---
Tarsus	1.4	1.3	0.9	1.1	1.53
Total	19.7	19.4	11.0	16.3	4.54

Epigynum (Fig. 27A) with flattened postero-lateral hood-like projections. Vulva as in Figure 27B.

MATERIAL EXAMINED.— MADAGASCAR: **Mahajanga:** HOLOTYPE above (CASENT 9018006); Parc National de Baie de Baly, 12.4 km 337° NNW Soalala, 16°0'36"S, 045°15'54"E, 10 m, tropical dry forest, general collecting at night, 26–30.xi.2002 (Fisher, Griswold et al., CASENT 9018047), 1 ♂; Parc National Tsingy de Bemaraha, 3.4 km 93° E Bekopaka, Tombeau Vazimba, 19°8'31"S, 044°49'41"E, 50 m, tropical dry forest, general collecting ground spiders, 6–10.xi.2001 (B.L. Fisher et al., CASENT 9008803), 1 ♀; Forêt de Tsimembo, 8.7 km 336° NNW Soatana, 19°1'17"S, 044°26'26"E, 20 m, tropical dry forest, general collecting/beatting, 21–25.xi.2001 (Fisher, Griswold et al., CASENT 9018047), 1 ♂; TOLIARA: Parc National de Kirindy Mite, 16.3 km 125°SE Belo sur Mer, 20°47'43"S, 044°8'49"E, 80m, tropical dry forest, general collecting/beatting, 6–10.xii.2001 (B.L. Fisher et al., CASENT 9004644), 1 ♂ 1 juvenile ♂; Forêt de Kirindy, 15.5 km 64° ENE Marofandilia, 20°2'42"S, 066°39'44"E, 100 m, tropical dry forest, beating low vegetation, 28.xi–3.xii.2001 (B.L. Fisher et al., CASENT 9005038), 1 ♂ 1 juvenile ♂.

DISTRIBUTION.— Known from western Madagascar (Map 2).

ACKNOWLEDGMENTS

I am deeply indebted to Dr. C. Rollard (MNHN) and Dr. R. Jocqué (MRAC) for their kind hospitality and access to their unsorted collection of sparassid spiders. Also, I wish to thank Dr. J. Dunlop (ZMB) and Dr. P. Jäger (Senckenberg Museum, Frankfurt) for lending additional specimens for this project. I am most thankful to Charles Griswold for his continuous support to my research work and time for reviewing drafts of this paper. I gratefully acknowledge Giovanni Maki for the illustrations, Michelle Koo and Xinpeng Wang for their assistance with the maps. This project was partially funded by the NSF grant DEB-0072713 to C. Griswold and B. Fisher and by the Frizzell and Planidium funds of CAS; additional support for examining various museum collections was provided by the Schlenger Foundation.

LITERATURE CITED

- PLATNICK, N.I. 2004. The World Spider Catalog, version 4.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/index.html>.
- SIMON, E. 1897. Histoire naturelle des Araignées. Pages 1–192 and figs. 1–200 in *Encyclopédie Roret*, 2nd ed., vol. 2, pt. 1. L. Mulo, Paris, France.

Illustrations

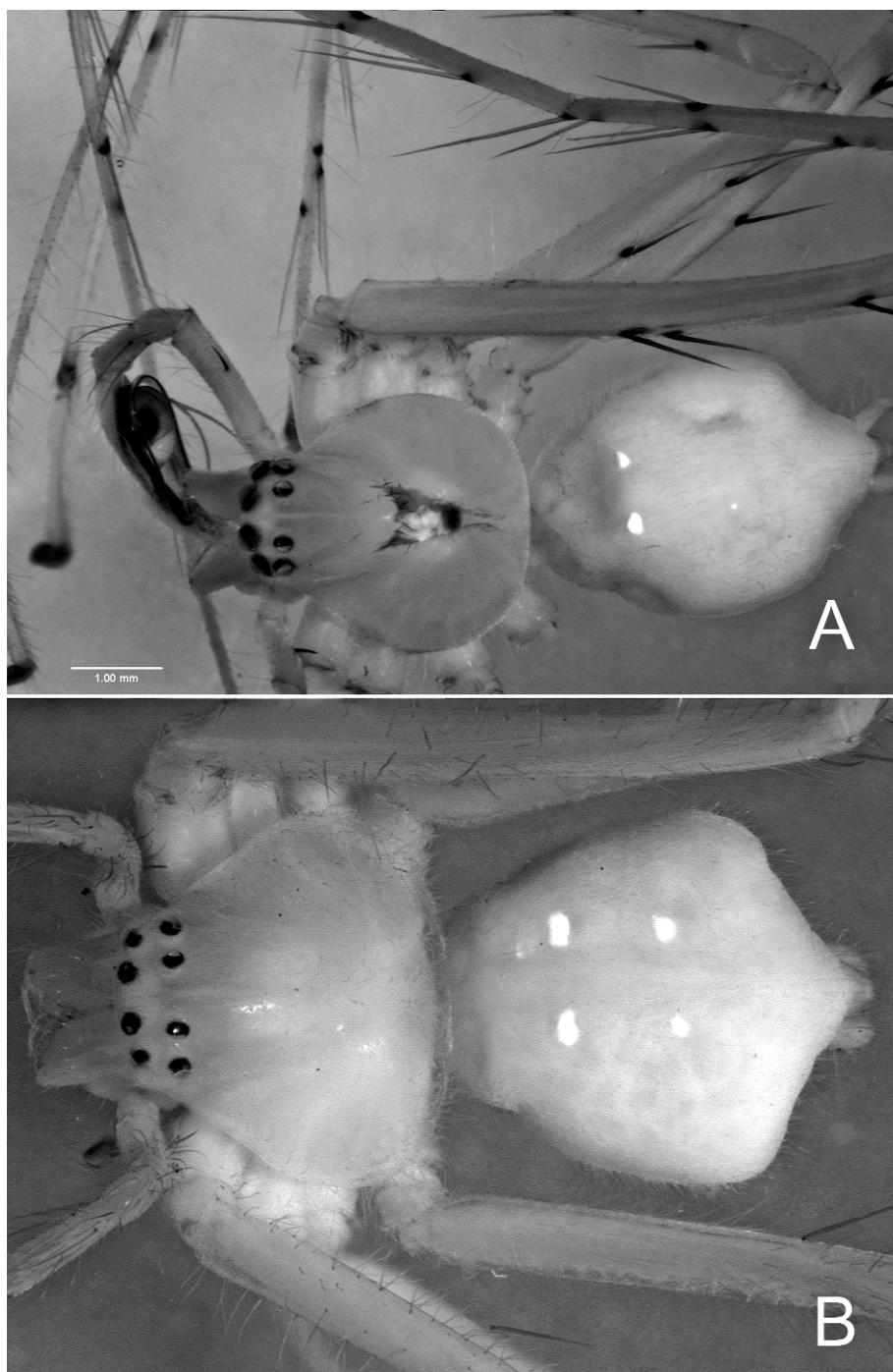


FIGURE 1. *Chrosioderma*, habitus, dorsal view. A. *C. namoroka* sp. nov., male holotype. B. Juvenile female (CASENT 9014911).

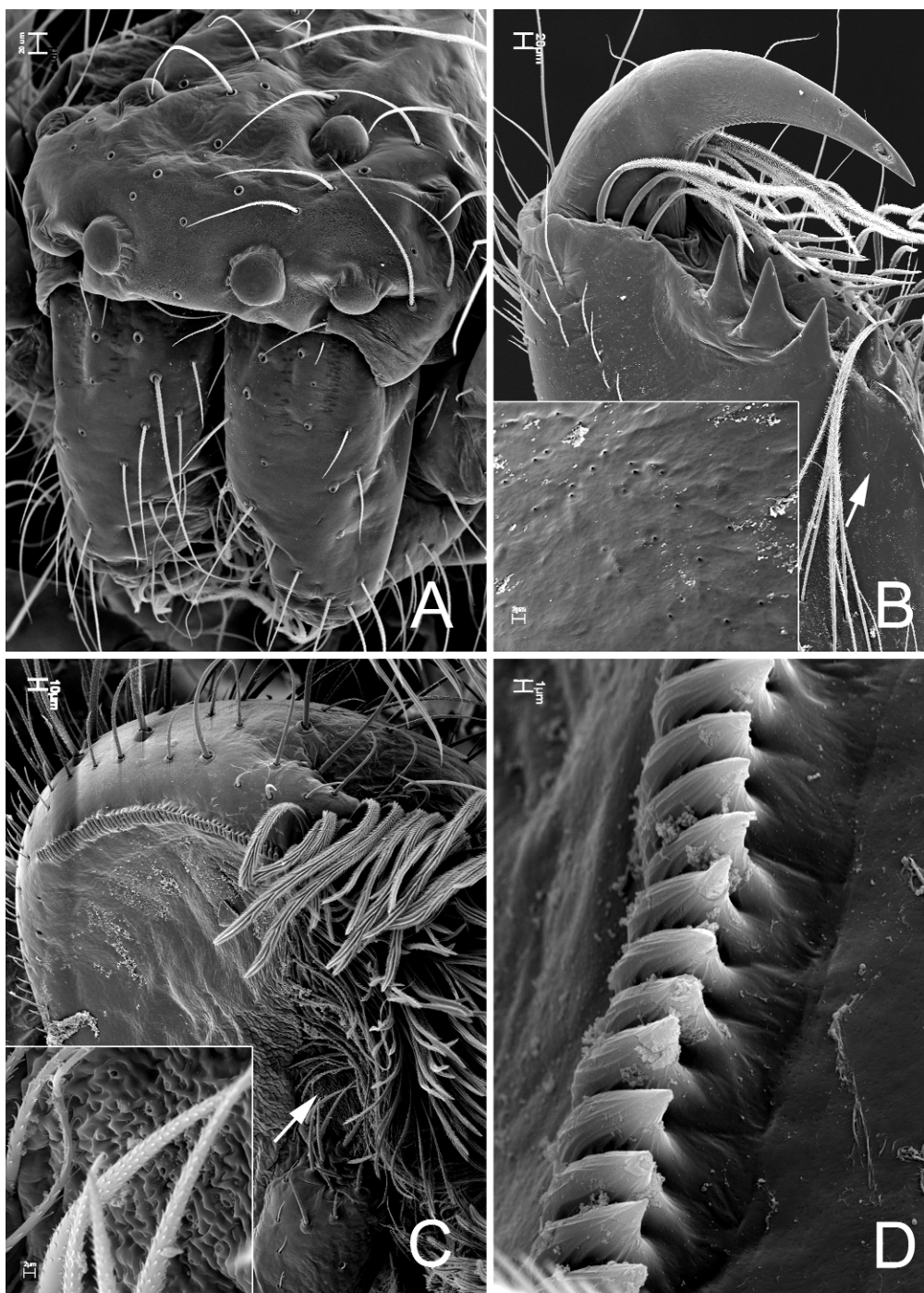


FIGURE 2. *Chrosioderma*, juvenile carapace. A. Eyes, frontal view (CASENT 9014911). B–D. Juv. CASENT 9003610. B. Cheliceral teeth, ventral view, inset and white arrow to cheliceral glands. C. Right endite showing serrula, inset and white arrow to sieve plate. D. Close up of serrula, ventral view.

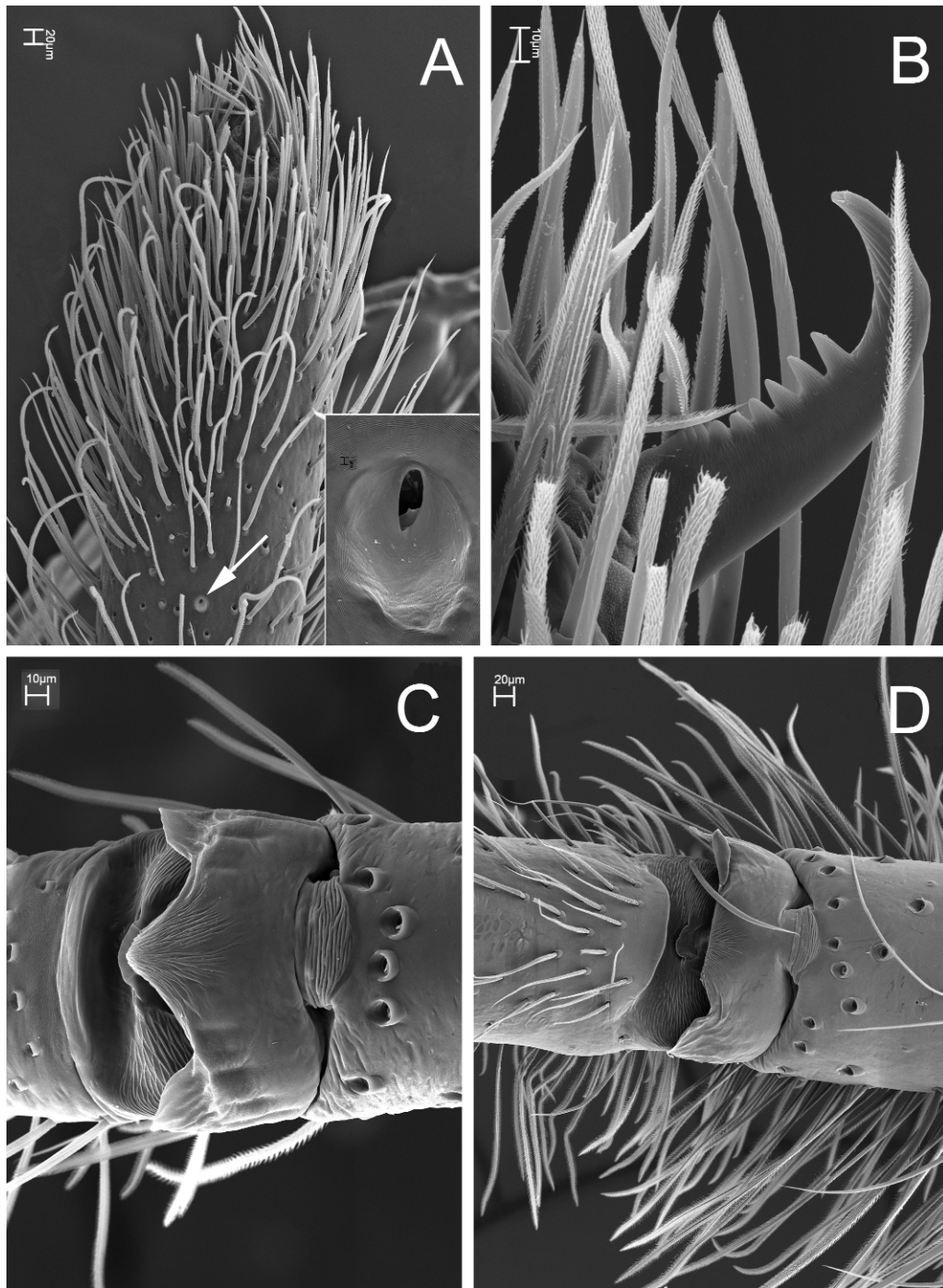


FIGURE 3. *Chrosioderma* spp., tarsi-metatarsi. A–B. *C. ranomafana* sp. nov., female. A. Right pedipalp; arrow and inset to tarsal organ. B. Close up of palpal tarsal claw. C. *C. soalala* sp. nov., male, metatarsal membrane. D. *C. roaloha* sp. nov., female, metatarsal membrane.

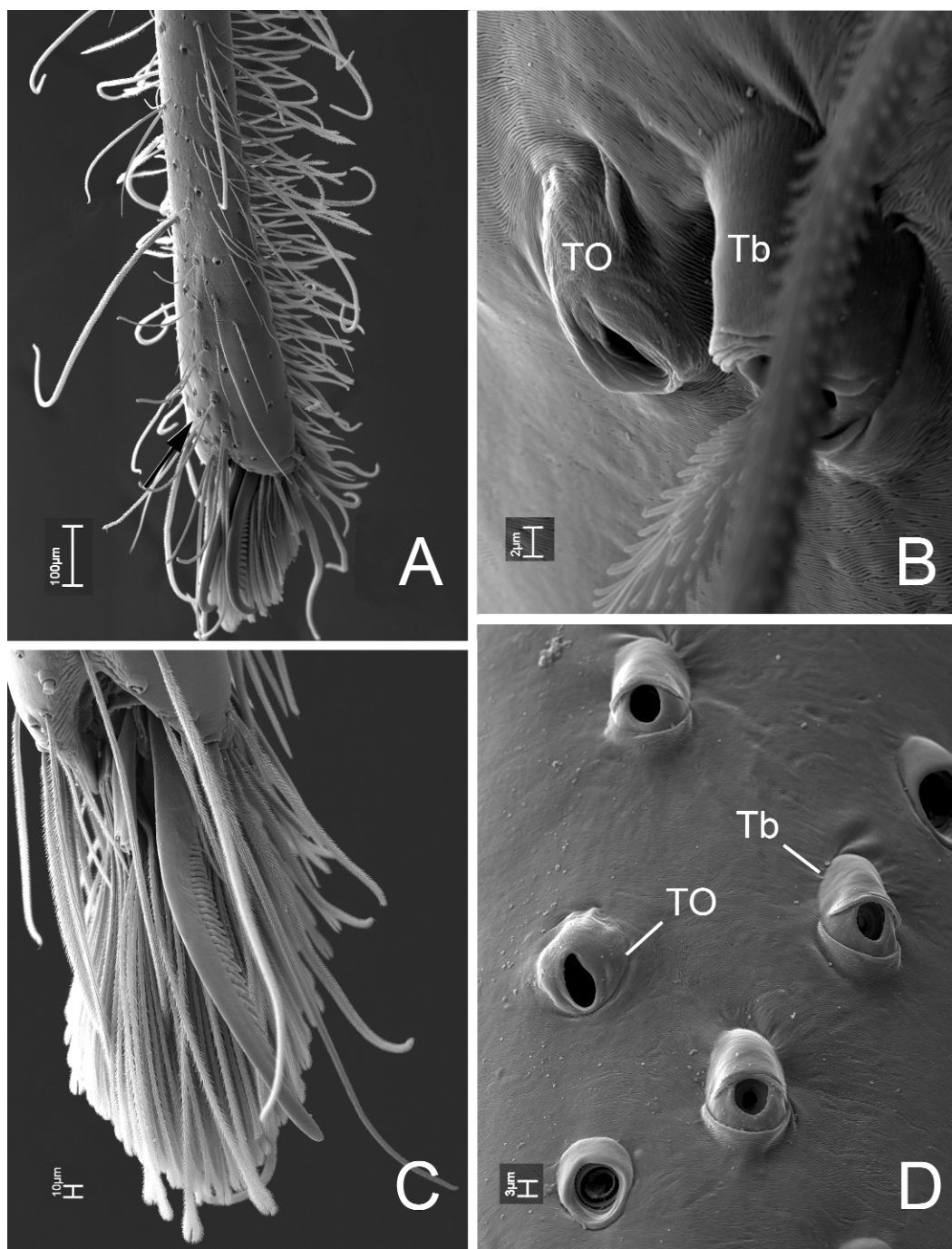


FIGURE 4. *Chrosioderma* spp., tarsi. A–B. *C. havia*, A. Female I left tarsus, arrow to tarsal organ. B. Close up of tarsal organ and trichobotrium. C. *C. ranomafana* sp. nov., male I left tarsus, tarsal claws and claw tufts. D. *C. ranomafana* sp. nov., female II right tarsus. Tb = trichobotrium; TO = tarsal organ.

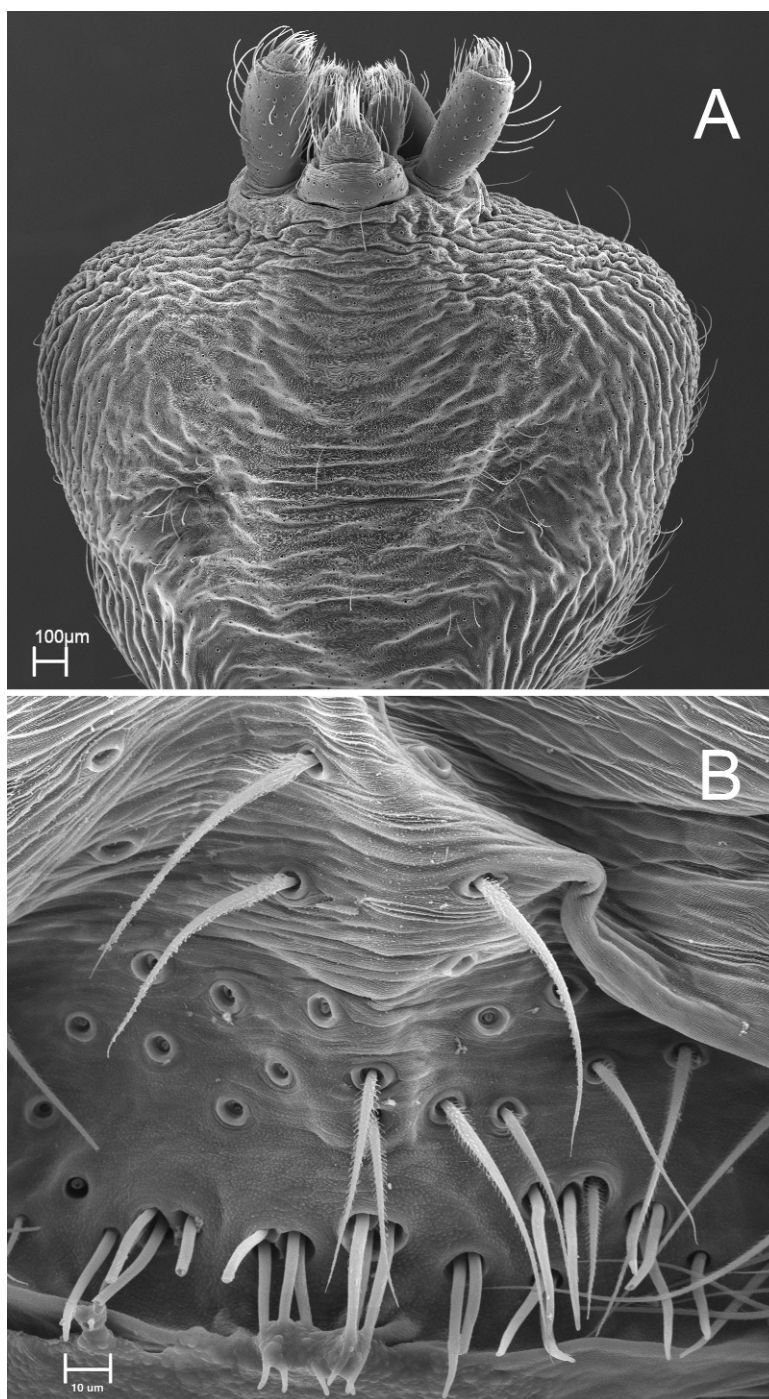


FIGURE 5. *Chrosioderma ranomafana* sp. nov. A. Male abdomen. B. Close up of epiandrous gland spigots.

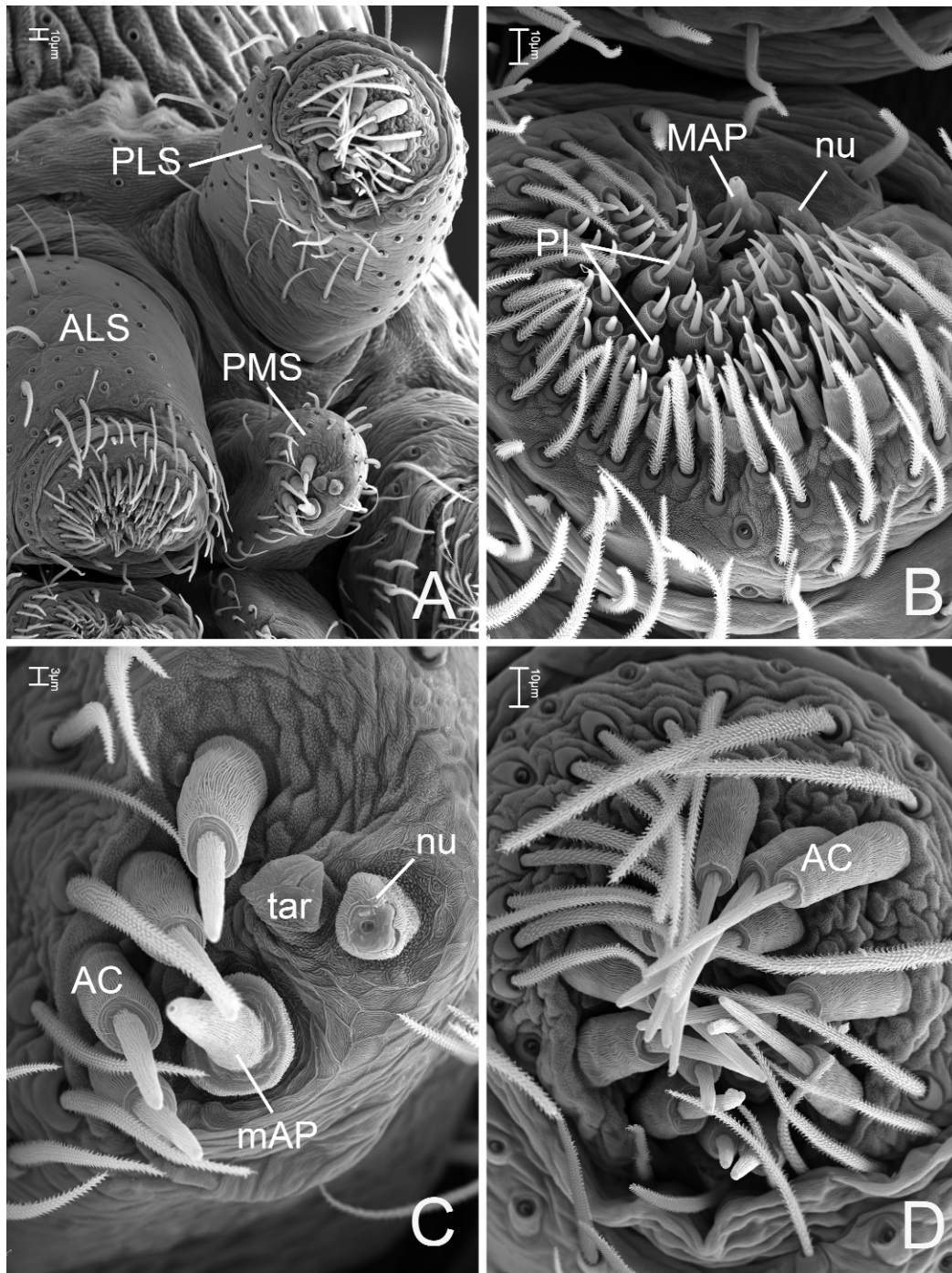


FIGURE 6. *Chrosioderma ranomafana* sp. nov., male spinnerets. A. Overview. B. ALS. C. PMS. D. PLS. AC = aciniform gland spigots, ALS = anterior lateral spinneret, MAP = major ampullate gland spigots, mAP = minor ampullate gland spigots, nu = nubbin, PI = piriform gland spigots, PLS = posterior lateral spinneret, PMS = posterior median spinneret, tar = tartipore.

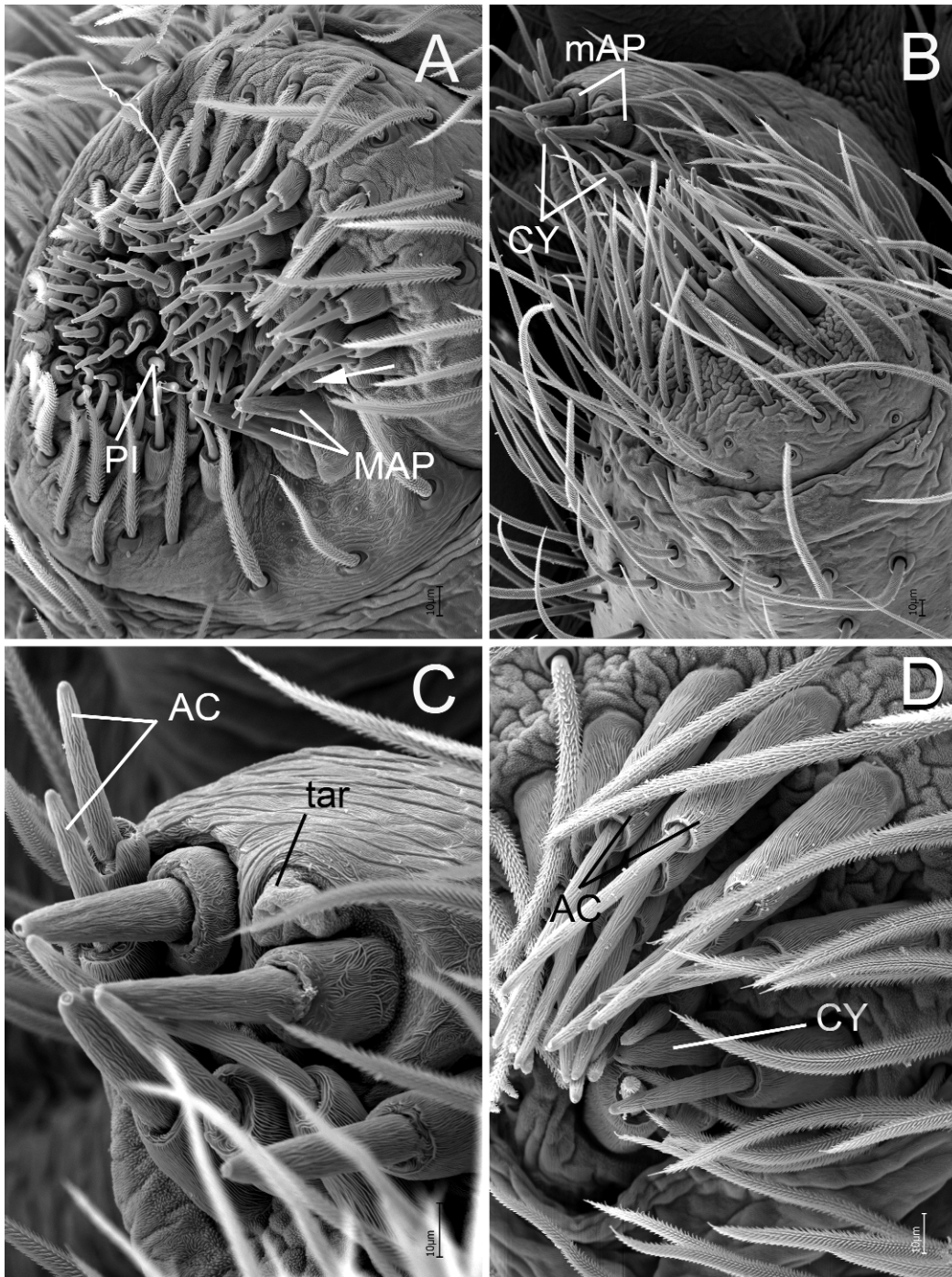


FIGURE 7. *Chrosioderma roaloha* sp. nov., female spinnerets. A. ALS. B. PMS. C. Close up of PMS. D. PLS. AC = acini-form gland spigots, CY = cylindrical gland spigots, MAP = major ampullate gland spigots, mAP = minor ampullate gland spigots, PI = piriform gland spigots, tar = tartipore.

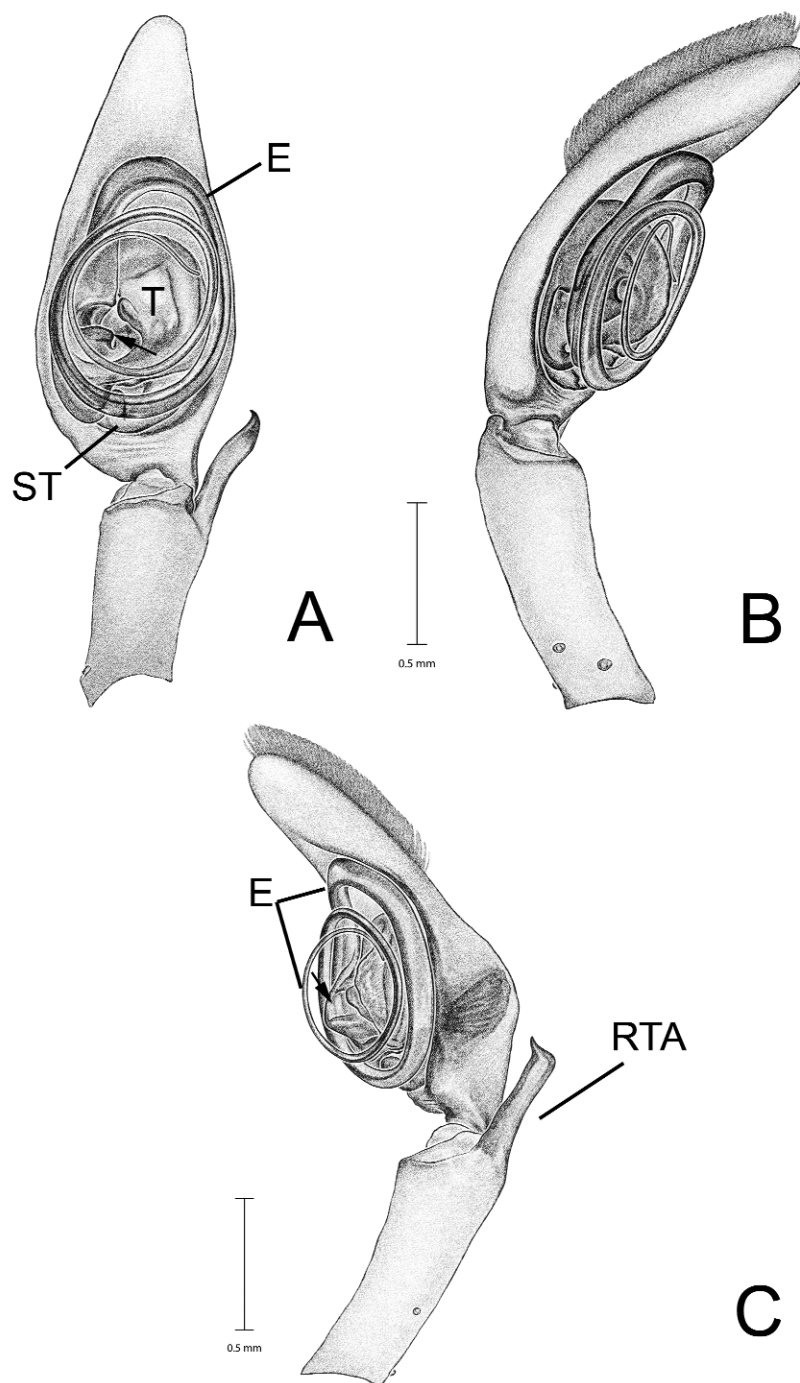


FIGURE 8. *Chrosioderma soalala* sp. nov., male CAsENT 9018047. Left palp. A. Ventral view. B. Prolateral view. C. Retrolateral view. E = embolus, RTA = retrolateral tibial apophysis, ST = subtegulum, T = tegulum. Black arrows to embolic base.

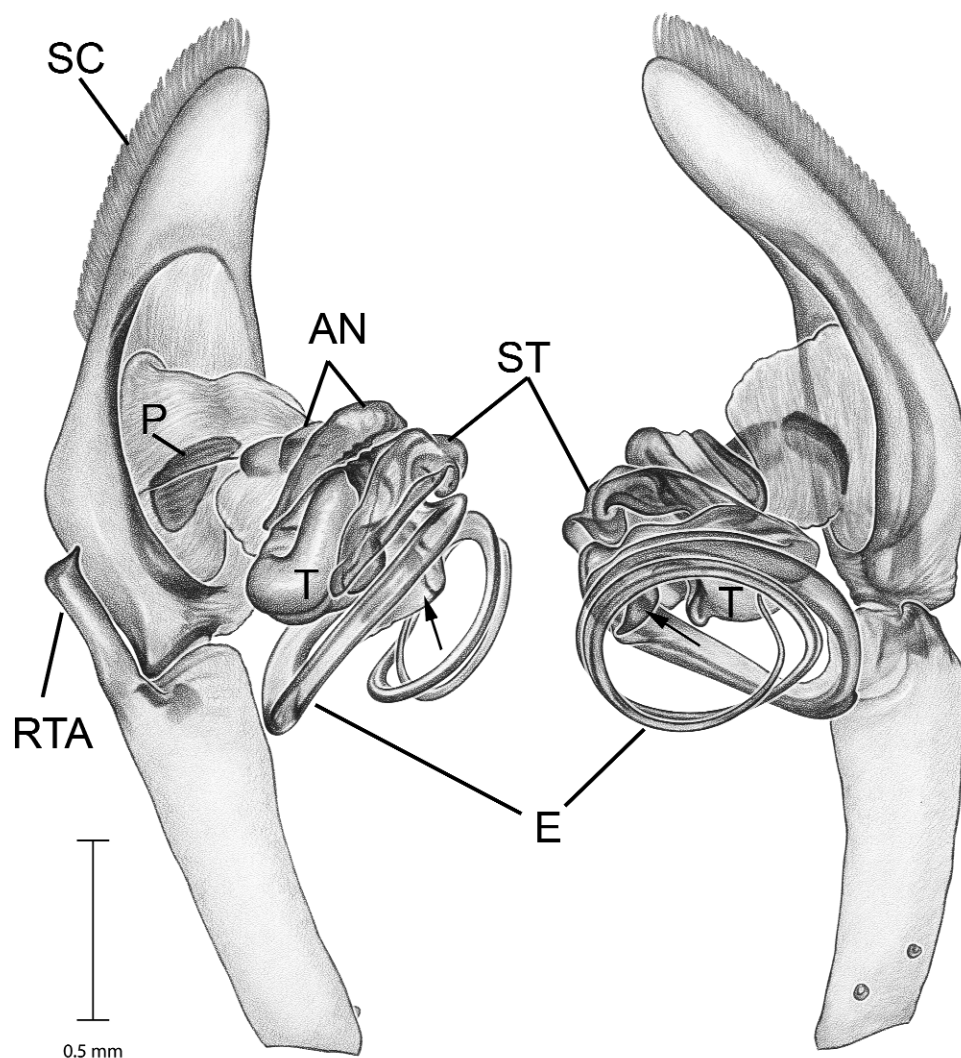


FIGURE 9 (left). *Chrosioderma soalala* sp. nov., male CASENT 9018047. Expanded right palp, prolateral and retrolateral views. An = anelli, E = embolus, P = petiole, RTA = retrolateral tibial apophysis, SC = cymbial scopula, ST = subtegulum, T = tegulum. Black arrows to embolic base.

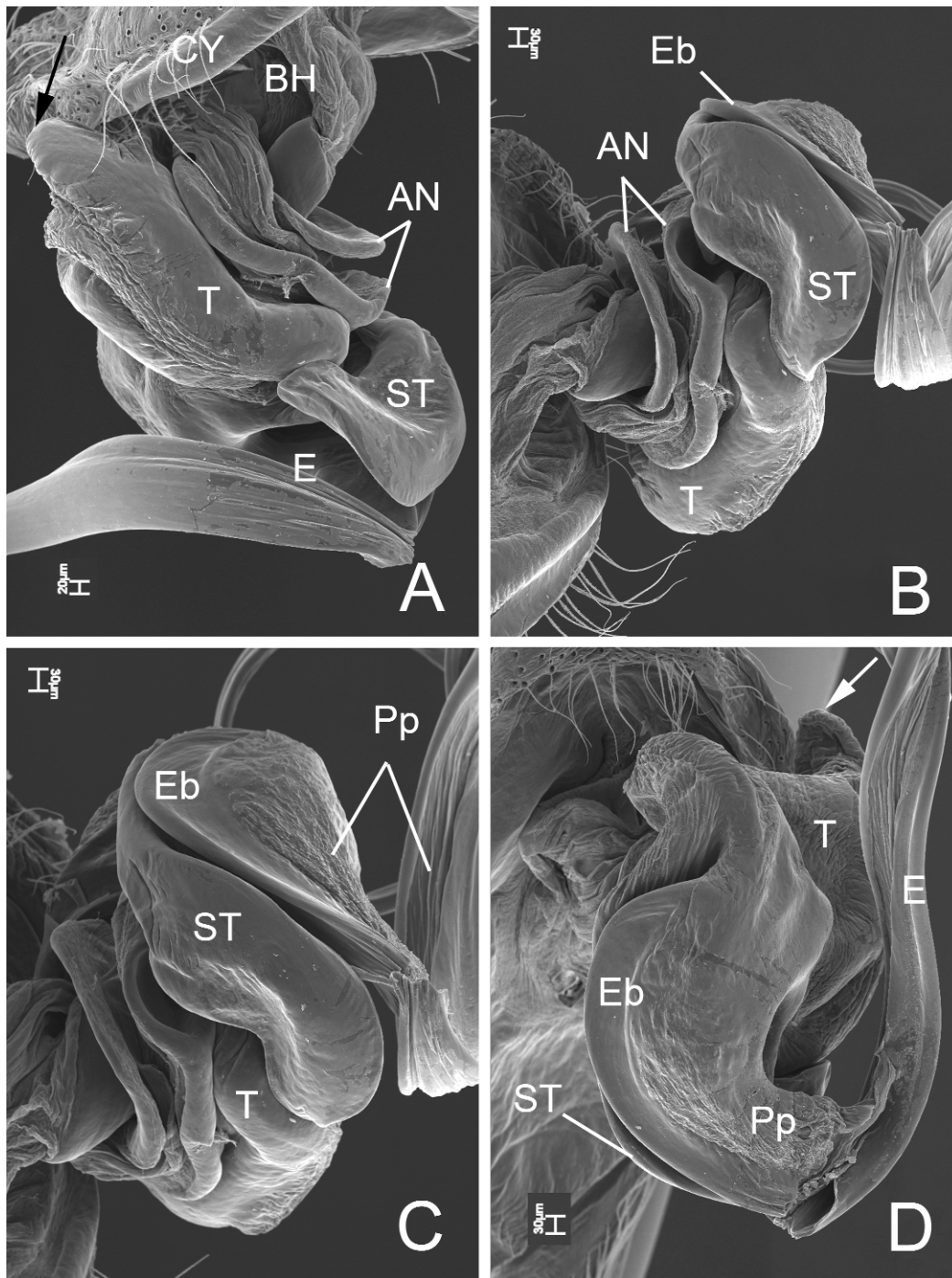


FIGURE 10. *Chrosioderma ranomafana* sp. nov., male CASENT 9010722. Expanded right palp. A. Prolateral view, black arrow to conductor base. B. Retrolateral view. C. Close up, retrolateral view. D. Ventral view, white arrow to conductor. An = anelli, BH = basal hematodocha, CY = cymbium, E = embolus, Eb = embolic base, Pp = pars pendula, ST = subtegulum, T = tegulum.

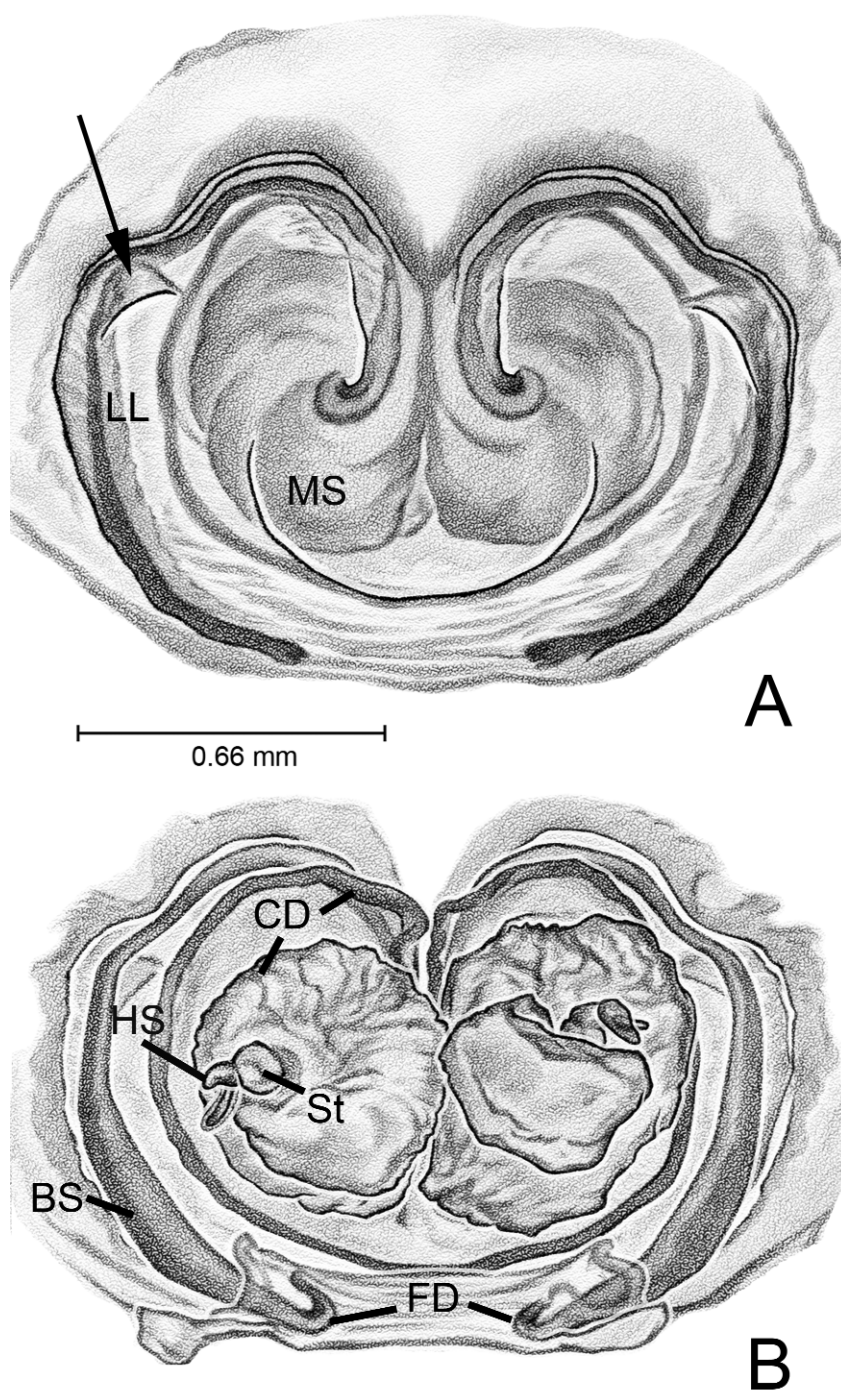


FIGURE 11. *Chrosioderma roaloha* sp. nov., female genitalia. A. Epigynum, ventral view. LL = epigynal lateral lobe, MS = epigynal median sector, arrow to LL hood-like projection. B. Vulva, dorsal view. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca, St = spermathecal stalk.

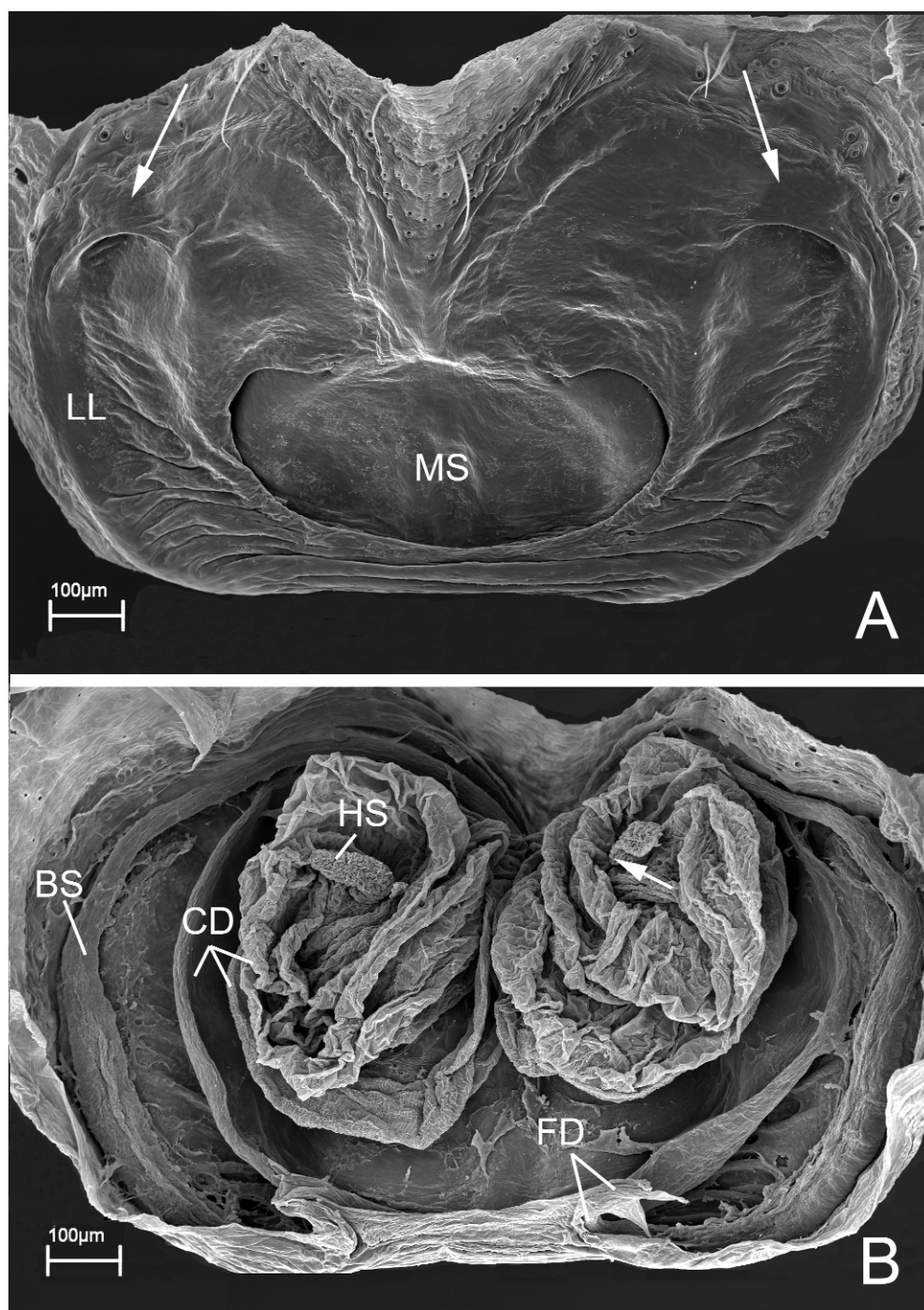


FIGURE 12. *Chrosioderma ranomafana* sp. nov., female genitalia. A. Epigynum, ventral view. LL = epigynal lateral lobe, MS = epigynal median sector; arrows to LL hood-like projections. B. Vulva, dorsal view; arrow to spermathecal stalk. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca.

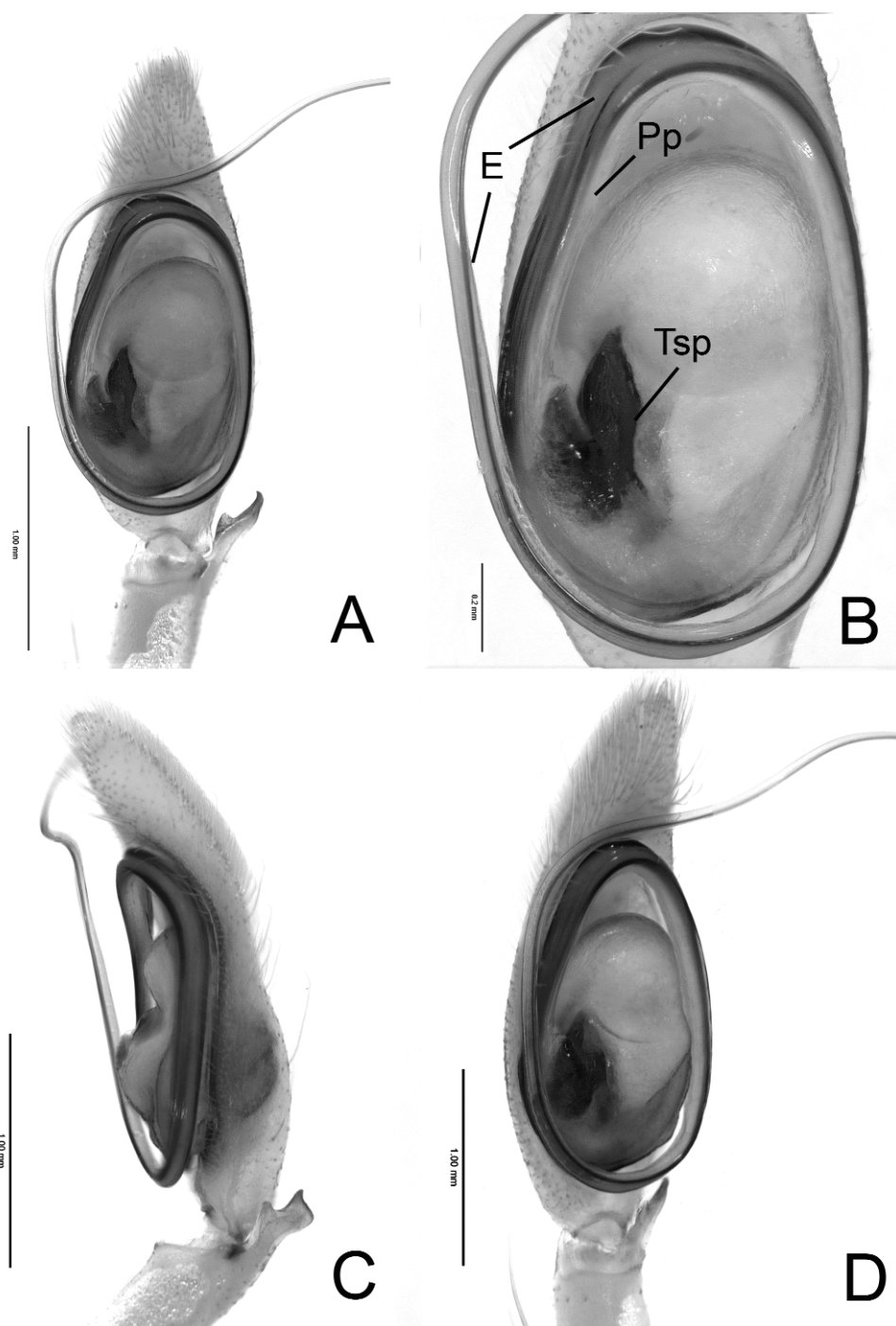


FIGURE 13. *Chrosioderma albidum* Simon, left male palp. A. Ventral view. B. Close up of ventral view, E=embolus, Pp=pars pendula, Tsp = tegular sclerotized process. C. Retrolateral view. D. Prolateral view.

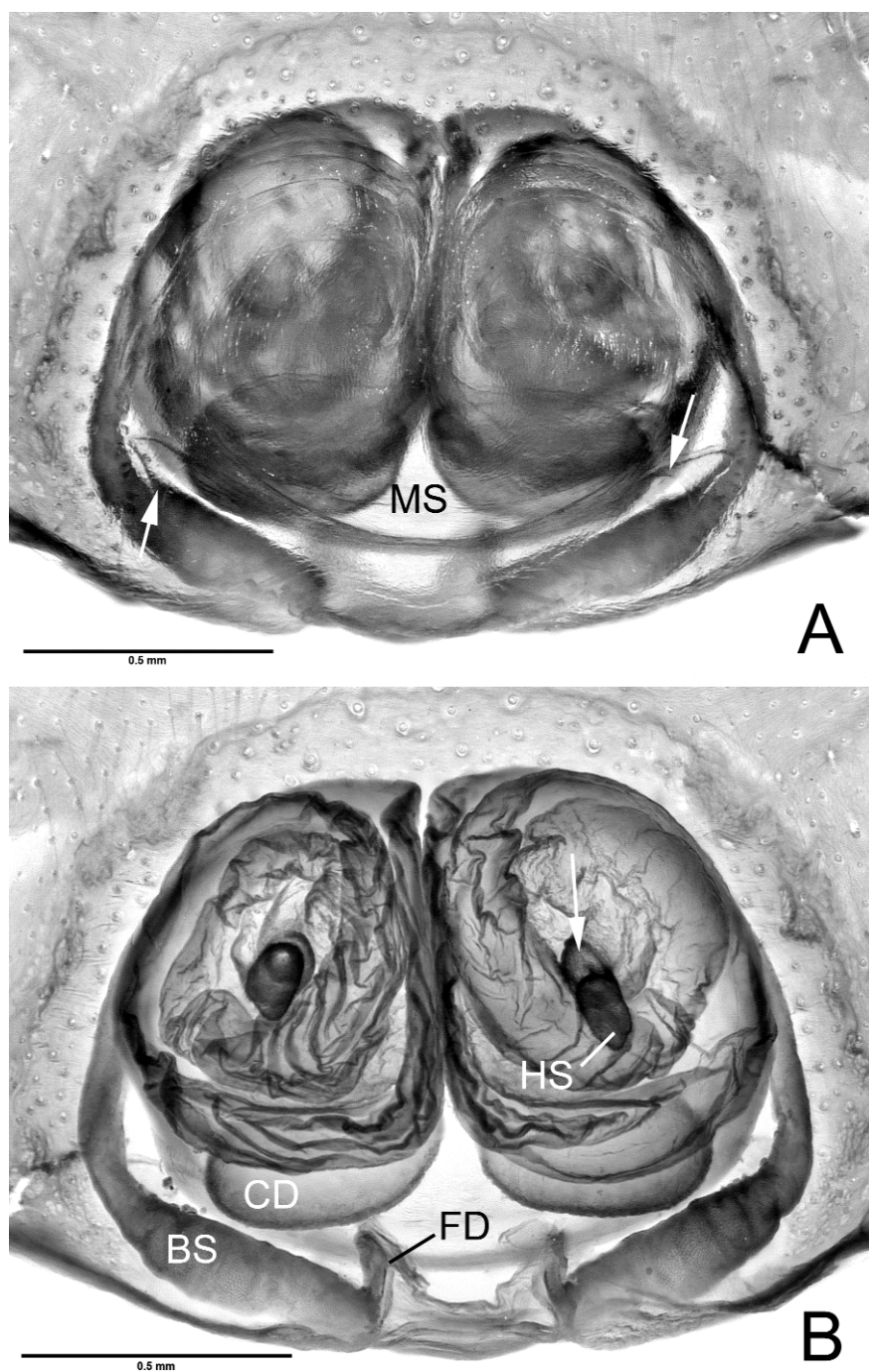


FIGURE 14. *Chrosioderma albidum* Simon. Female genitalia. A. Epigynum, ventral view; arrows to LL hood-like projections. B. Vulva, dorsal view; arrow to stalk of spermatheca. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca, MS = epigynal median sector.

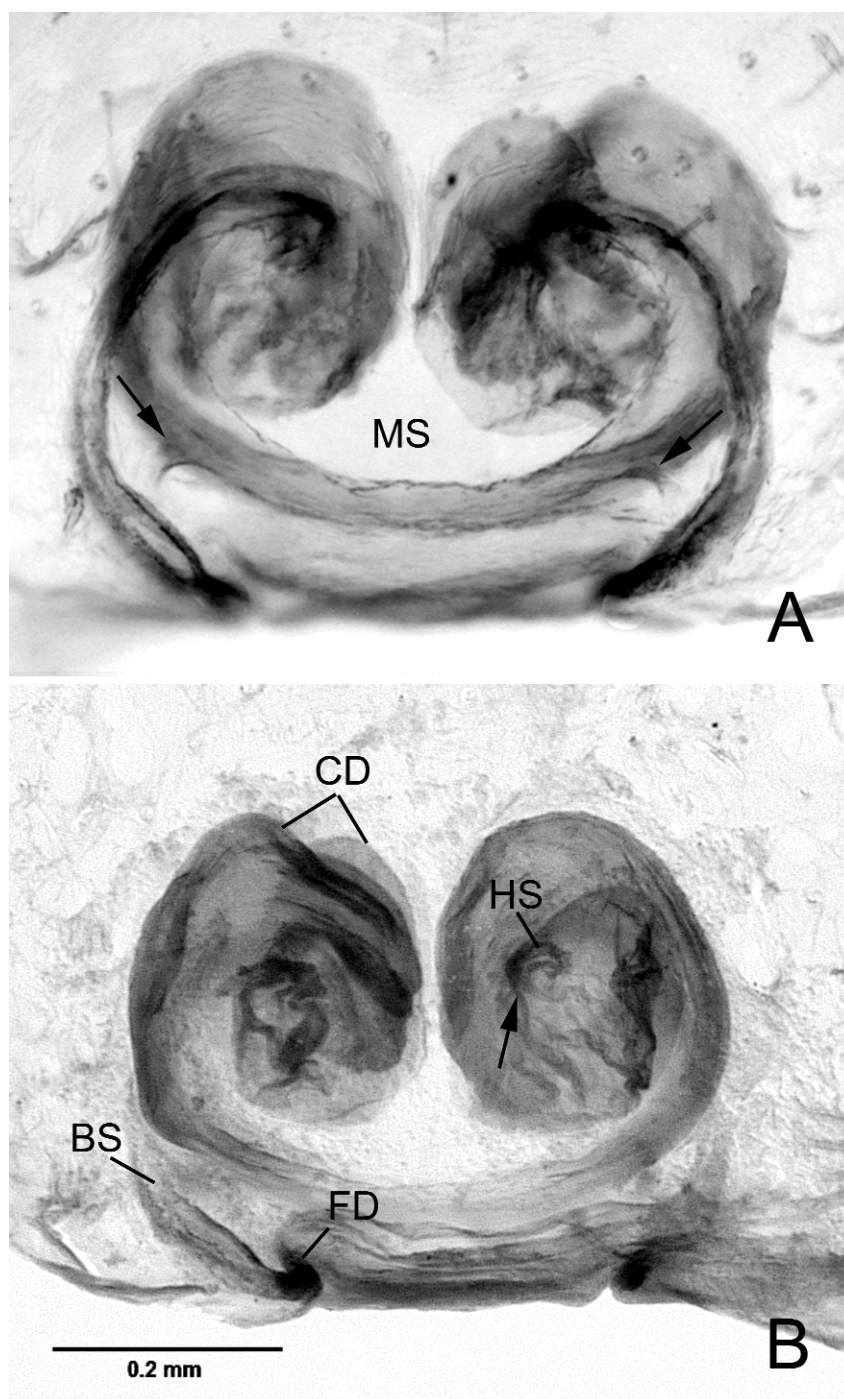


FIGURE 15. *Chrosioderma analalava* sp. nov. Female genitalia. A. Epigynum, ventral view; arrows to LL hood-like projections. B. Vulva, dorsal view; arrow to stalk of spermatheca. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca, MS = epigynal median sector.

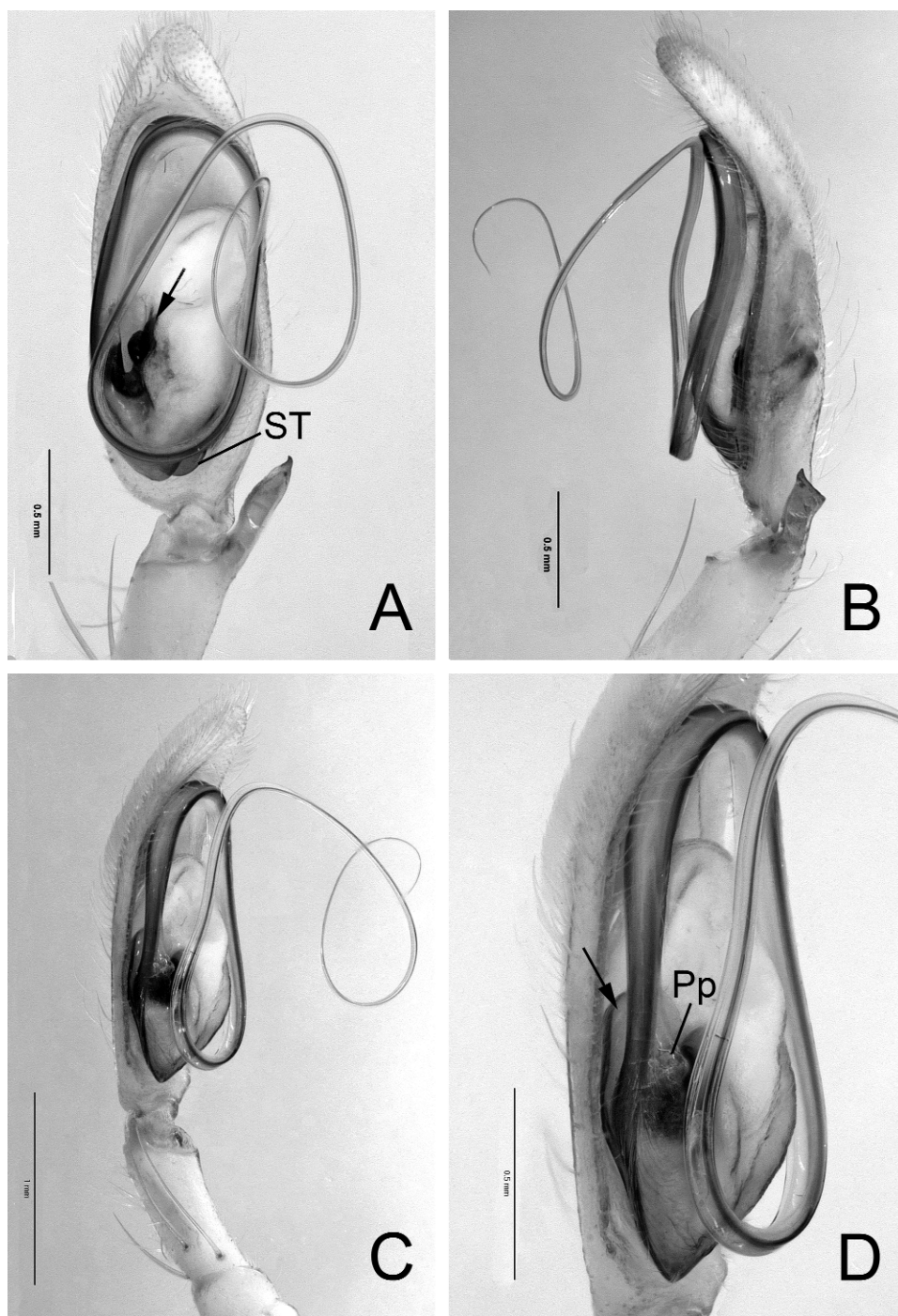


FIGURE 16. *Chrosioderma havia* sp. nov., left male palp. A. Ventral view, arrow to tegular sclerotized process. B. Retrolateral view. C. Prolateral view. D. Close up of prolateral view; arrow to subtegulum. Pp = pars pendula, ST = subtegulum.

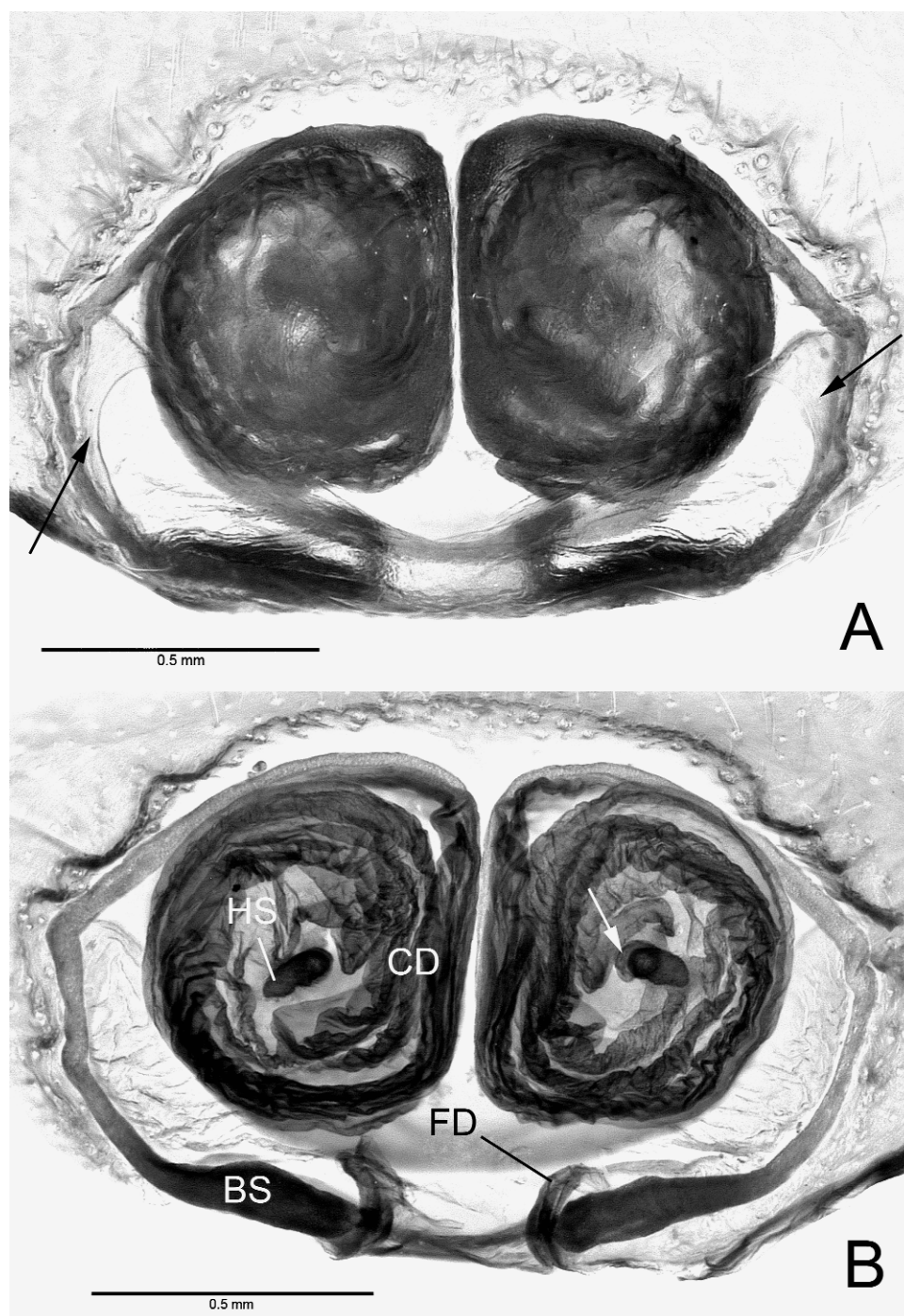


FIGURE 17. *Chrosioderma havia* sp. nov. Female genitalia. A. Epigynum, ventral view; arrows to LL hood-like projections. B. Vulva, dorsal view; arrow to stalk of spermatheca. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca, MS = epigynal median sector.

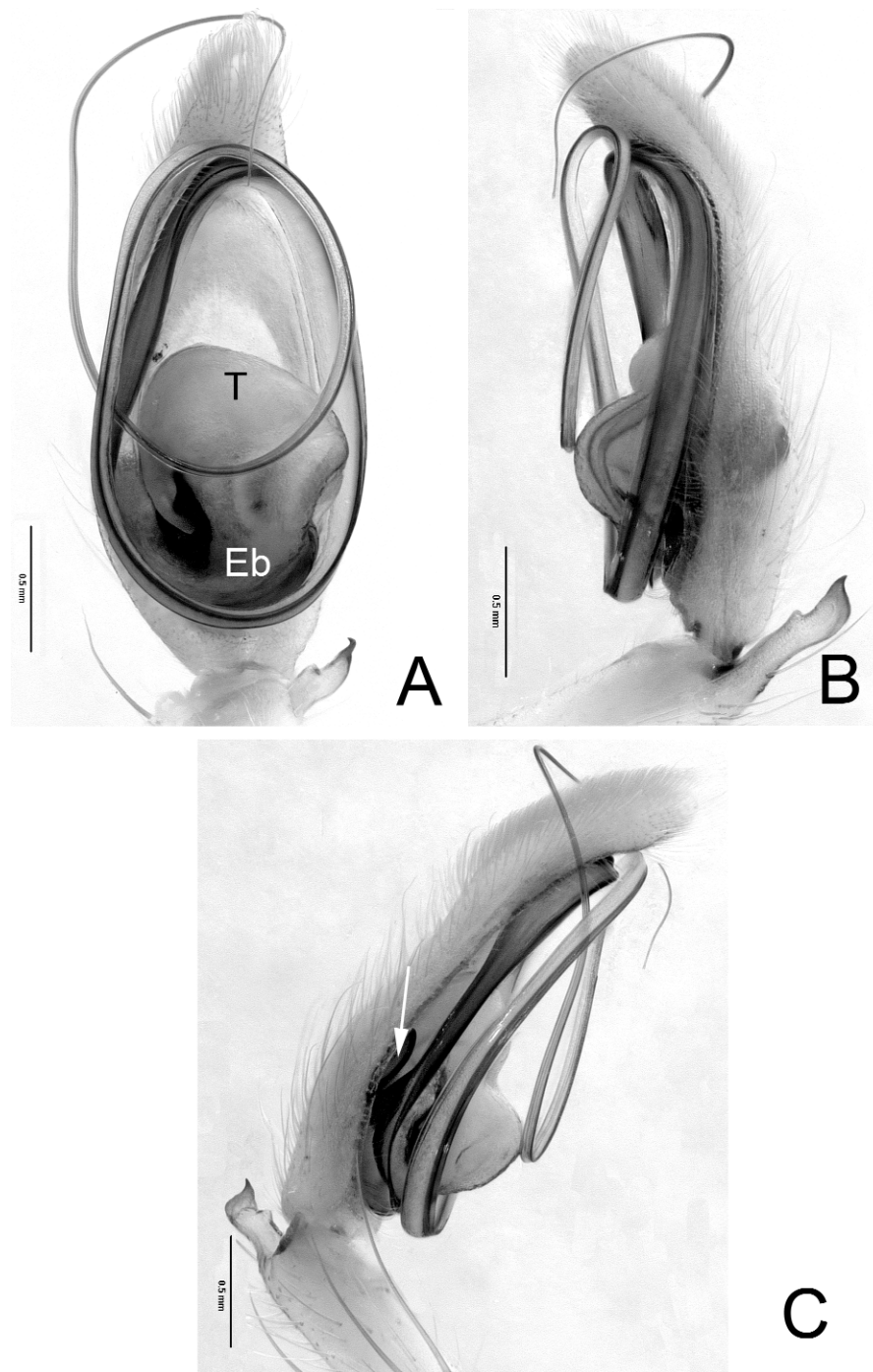


FIGURE 18. *Chrosioderma mahavelona* sp. nov., left male palp. A. Ventral view. B. Retrolateral view. C. Prolateral view, arrow to subtegulum. Eb = embolus base, T = tegulum.

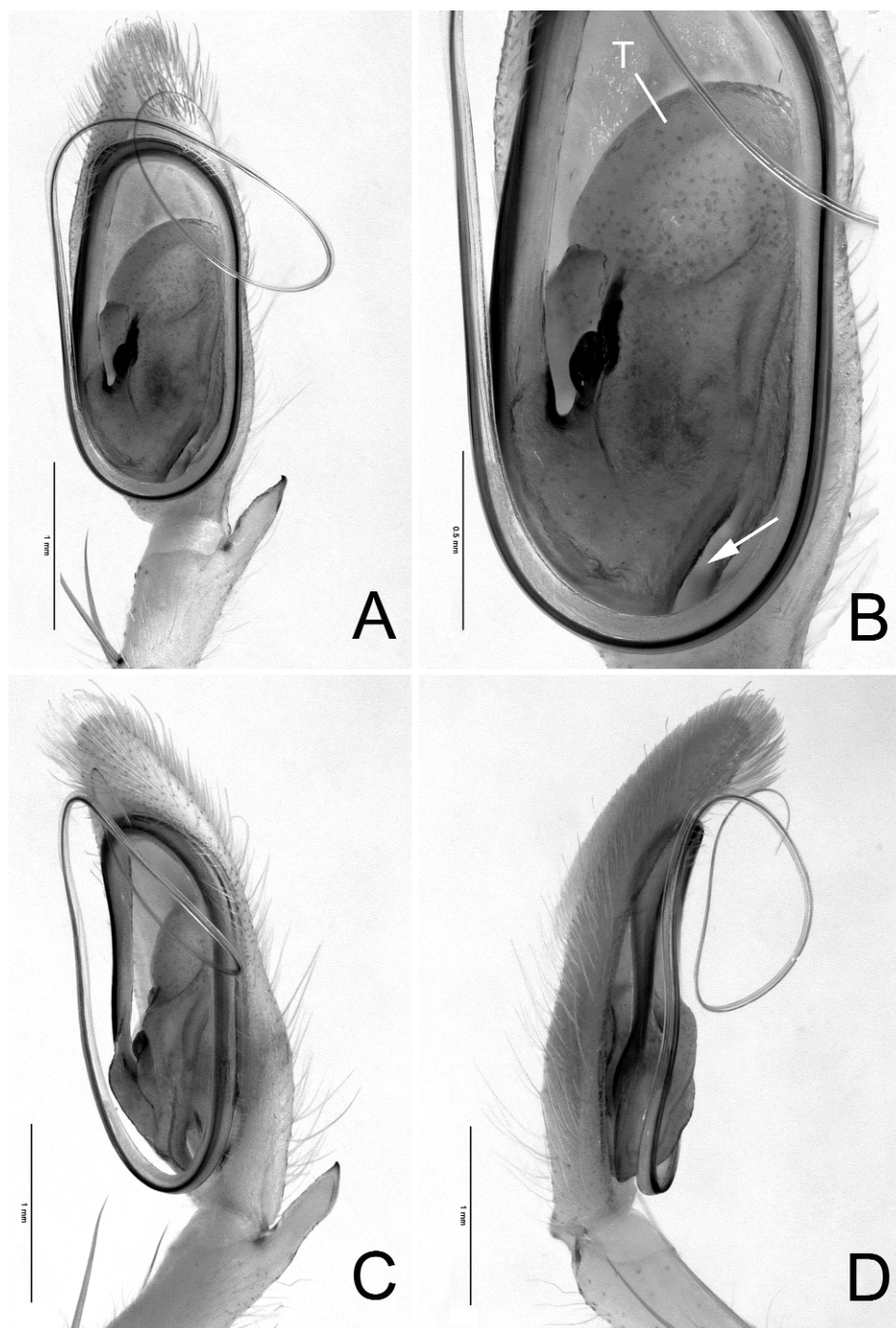


FIGURE 19. *Chrosioderma mipentinapentina* sp. nov., left male palp. A. Ventral view. B. Close up, ventral; arrow to subtegulum, T = tegulum. C. Retrolateral view. D. Prolateral view.

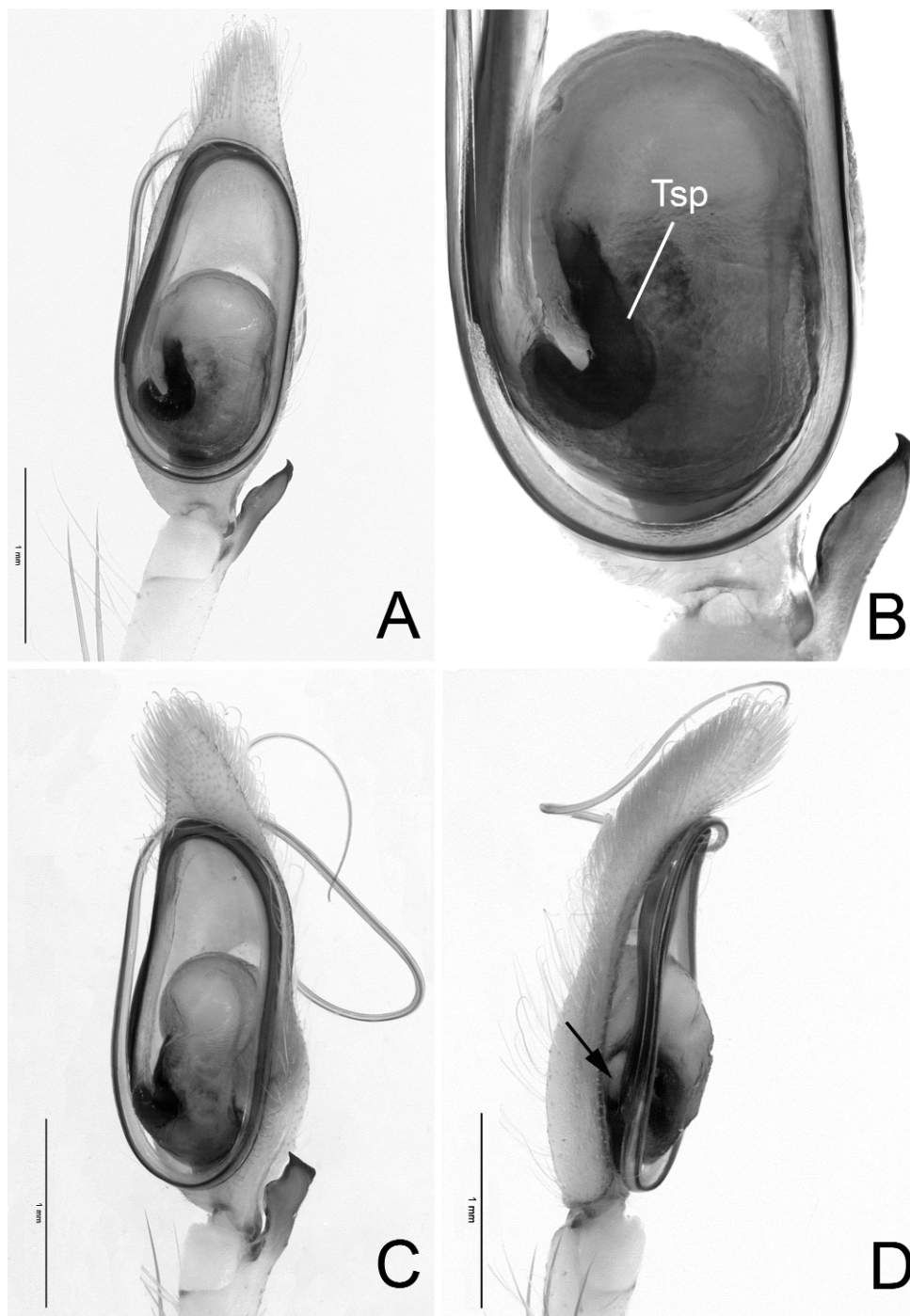


FIGURE 20. *Chrosioderma namoroka* sp. nov., left male palp. A. Ventral view. B. Close up, ventral view, Tsp = tegular sclerotized process. C. Retrolateral view. D. Prolateral view, arrow to subtegulum.

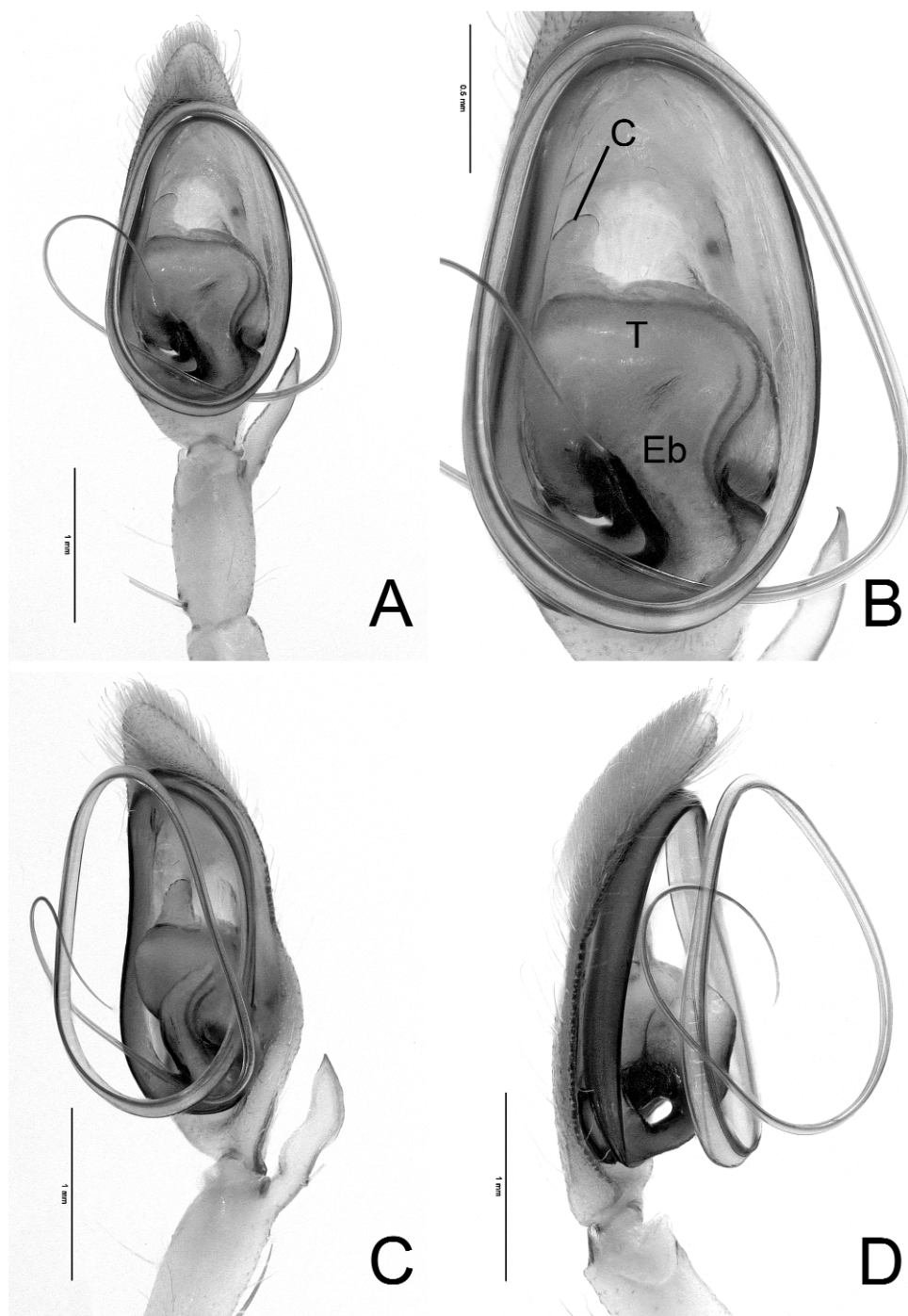


FIGURE 21. *Chrosioderma ranomafana* sp. nov., holotype, left male palp. A. Ventral view. B. Close up of ventral view; arrow to subtegulum. C. Retrolateral view. D. Prolateral view. C = conductor, Eb = embolus base, T = tegulum.

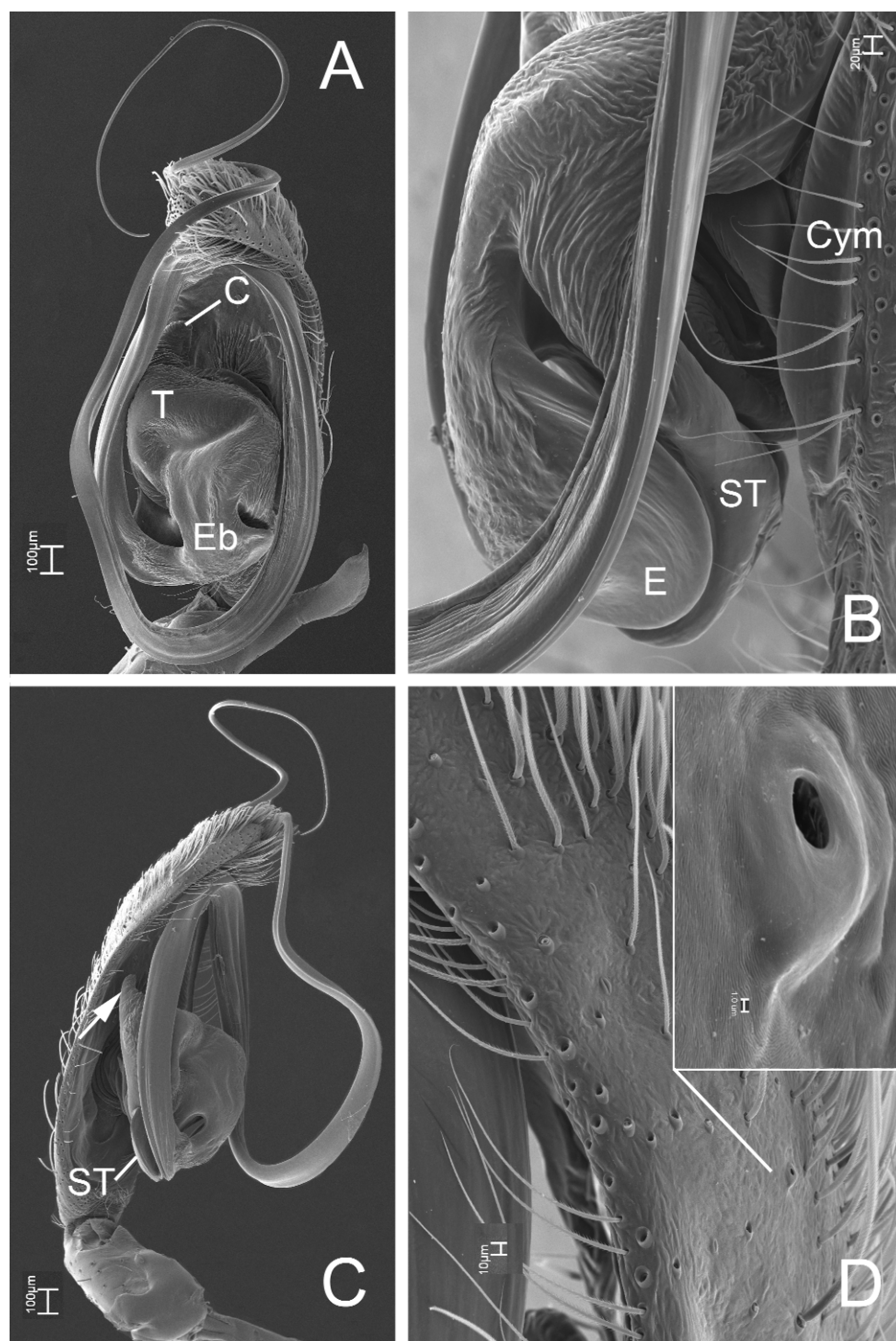


FIGURE 22. *Chrosioderma ranomafana* sp. nov., right male palp. A. Ventral view. B. Close up of retrolateral view. C. Prolateral view, arrow to conductor. D. Close up of cymbium showing position of tarsal organ, retrolateral view; inset to tarsal organ. C = conductor, Cym = cymbium, E = embolus, Eb = embolus base, ST = subtegulum, T = tegulum.

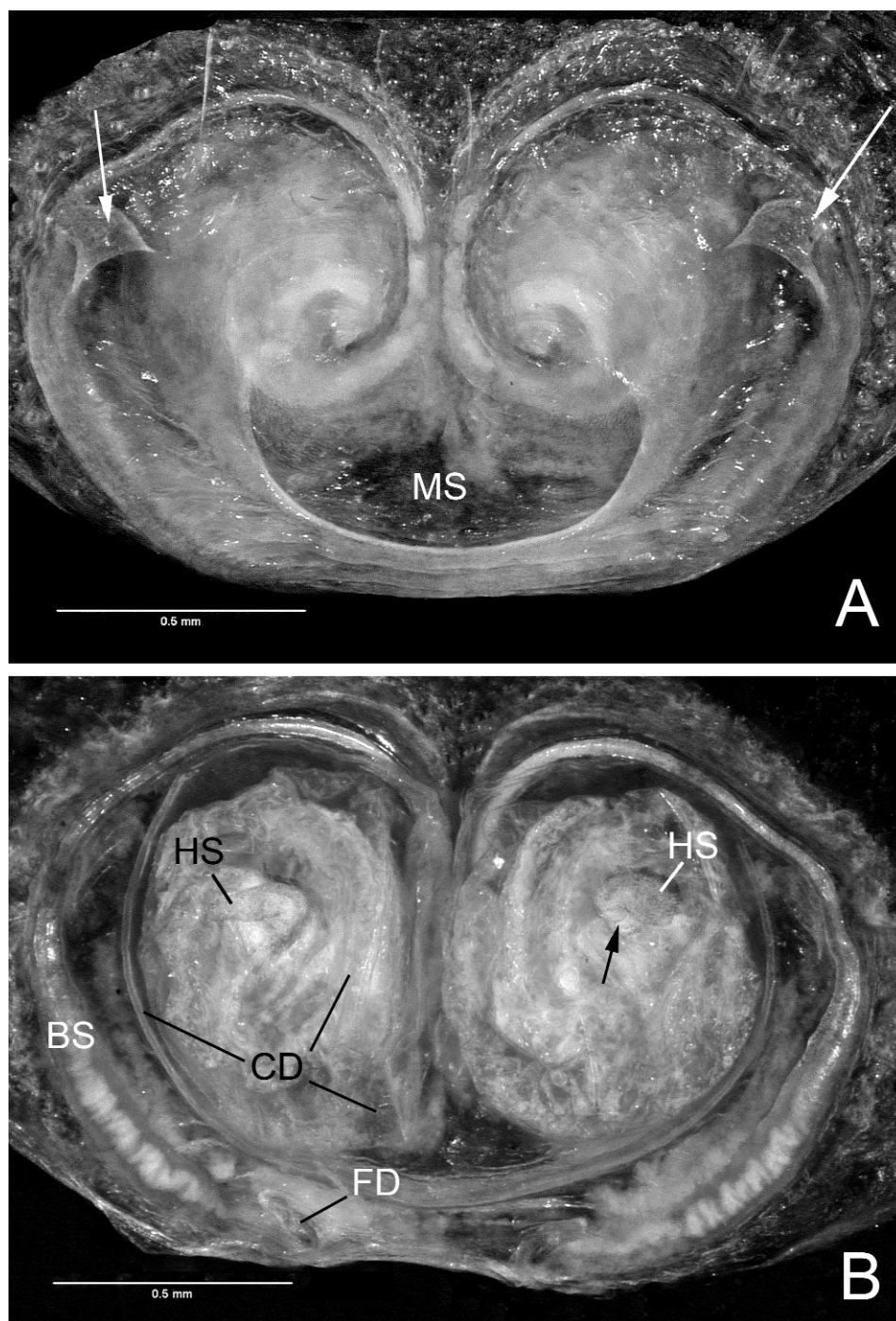


FIGURE 23. *Chrosioderma ranomafana* sp. nov. Female genitalia. A. Epigynum, ventral view; arrows to LL hood-like projections. B. Vulva, dorsal view; arrow to stalk of spermatheca. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca, MS = epigynal median sector.

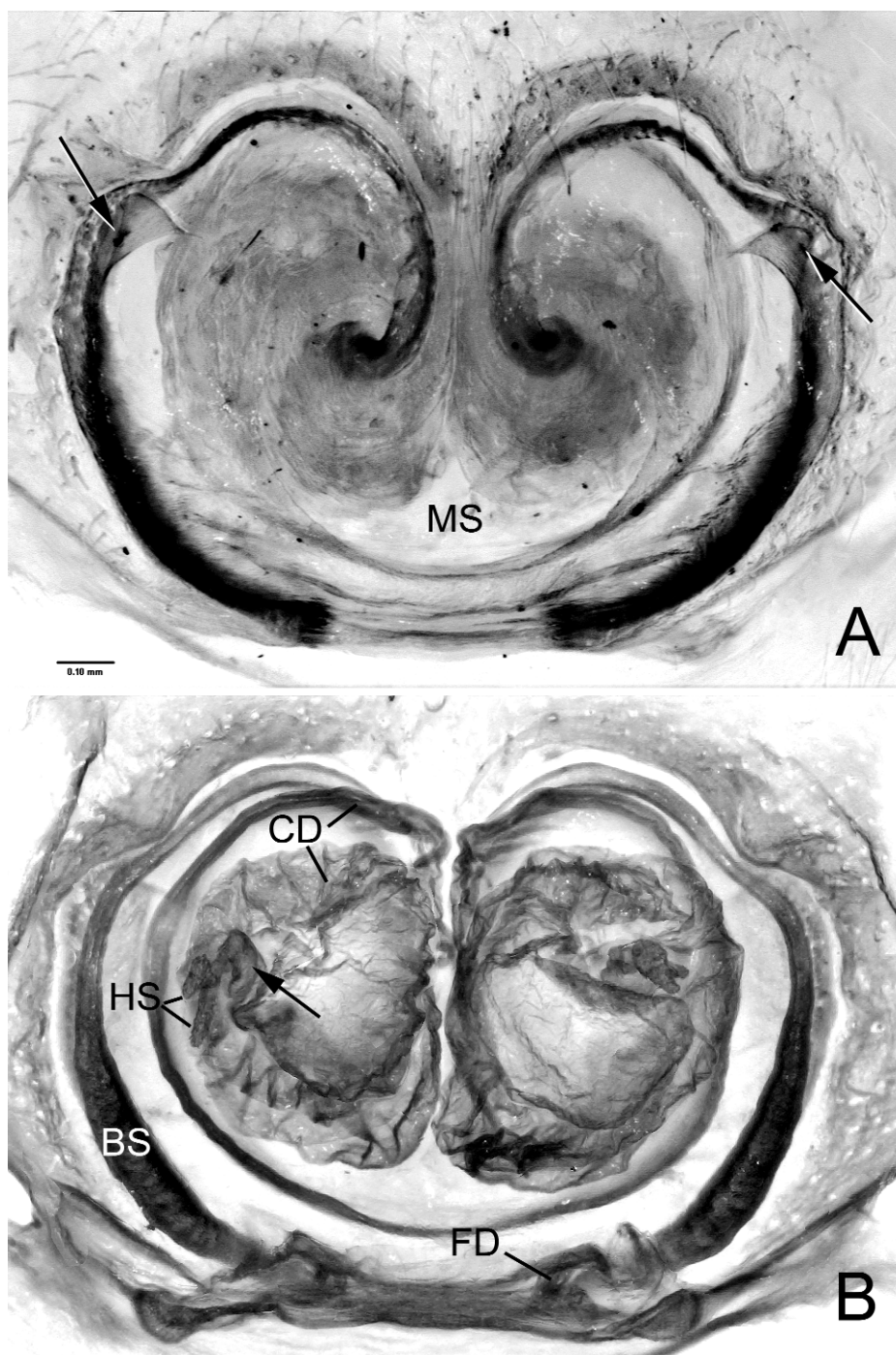


FIGURE 24. *Chrosioderma roaloha* sp. nov. Female genitalia. A. Epigynum, ventral view; arrows to LL hood-like projections. B. Vulva, dorsal view; arrow to stalk of spermatheca. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca, MS = epigynal median sector.

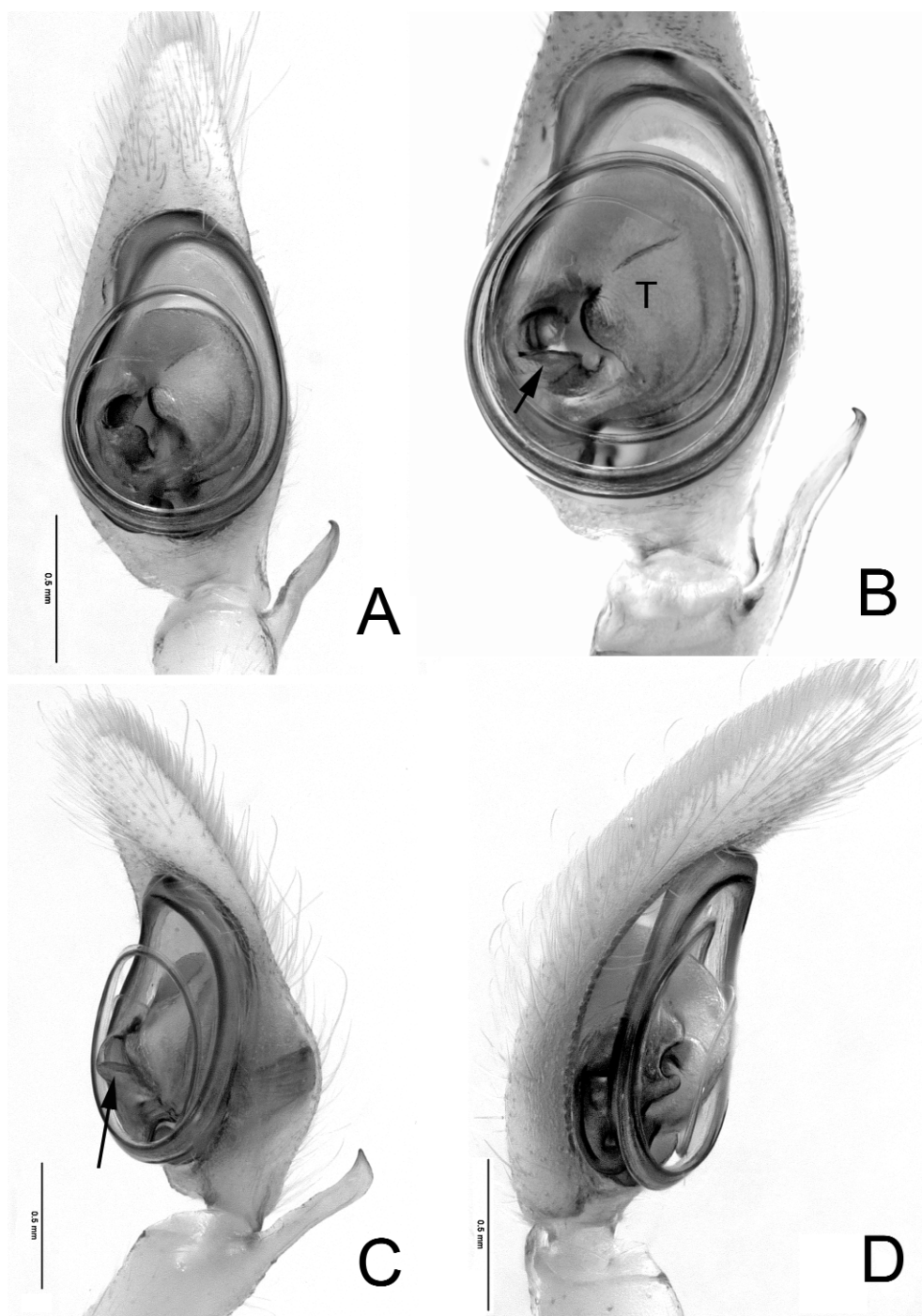


FIGURE 25. *Chrosioderma soalala* sp. nov., holotype, left male palp. A. Ventral view. B. Prolateral view. C. Retrolateral view, arrow to embolus base.

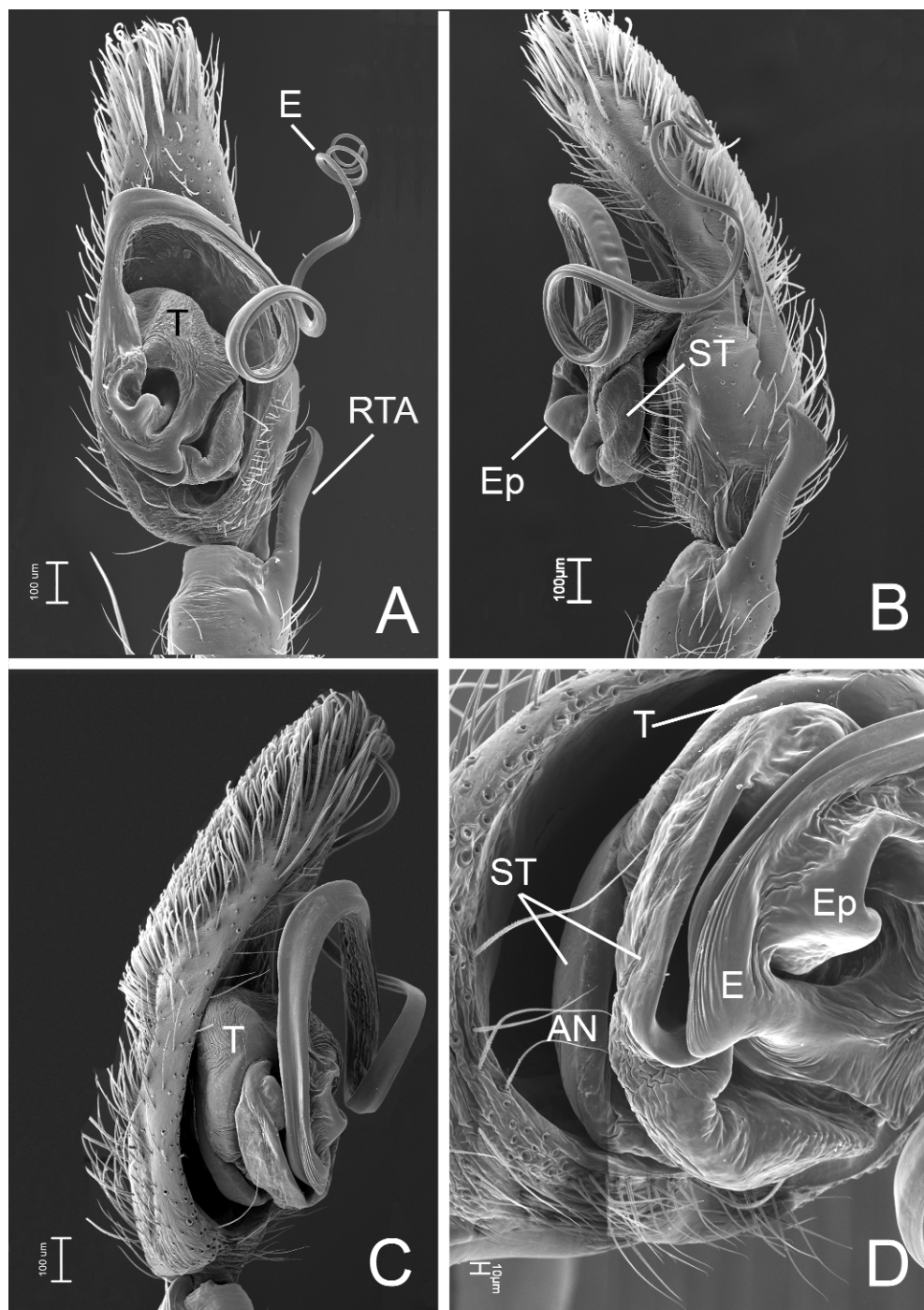


FIGURE 26. *Chrosioderma soalala* sp. nov. (CASENT 9005038), right male palp. A. Ventral view. B. Retrolateral view. C. Prolateral view. D. Close up of prolateral view. AN = anelli, E = embolus, Ep = embolic process, RTA = retrolateral tibial apophysis, ST = subtegulum, T = tegulum.

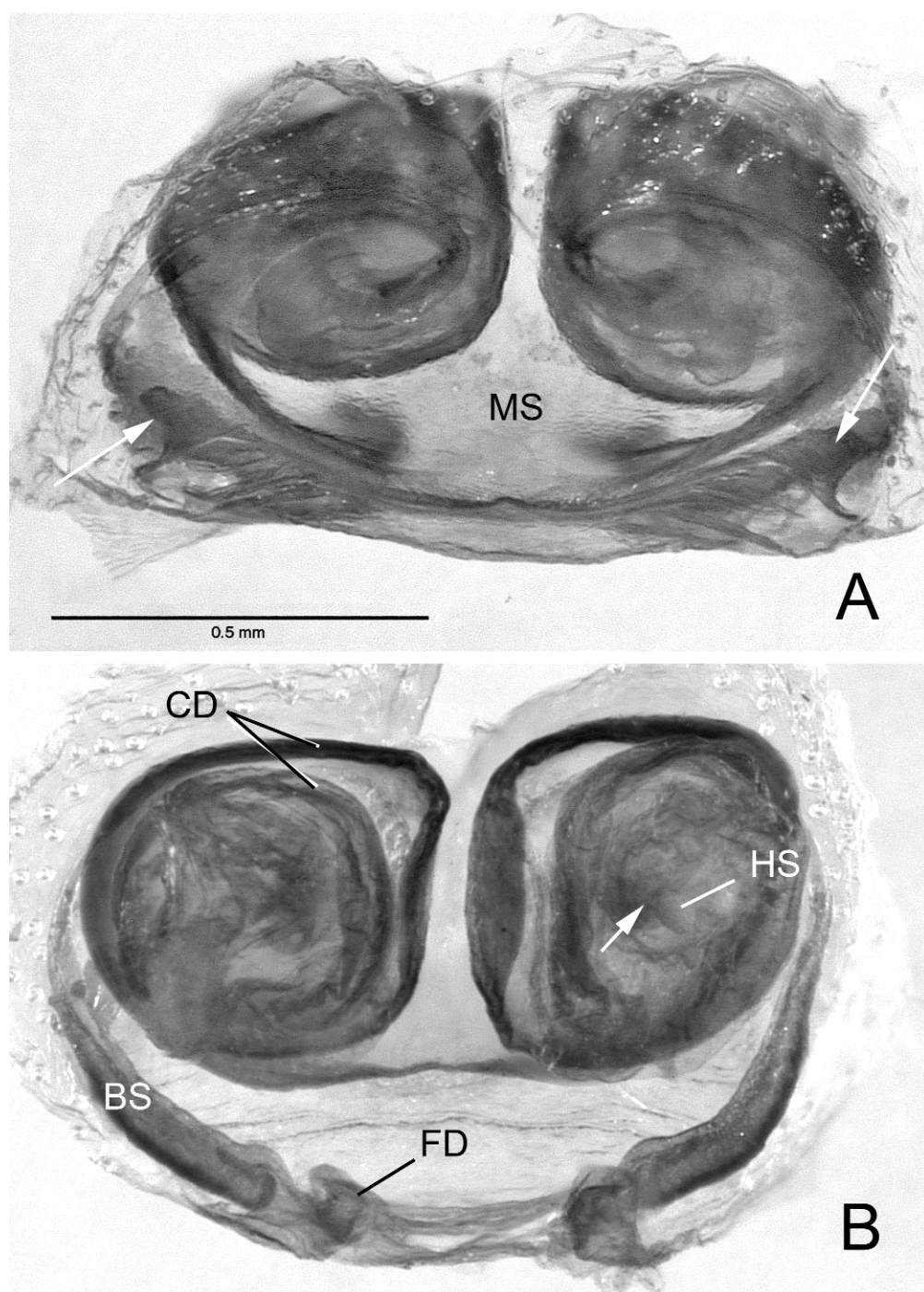
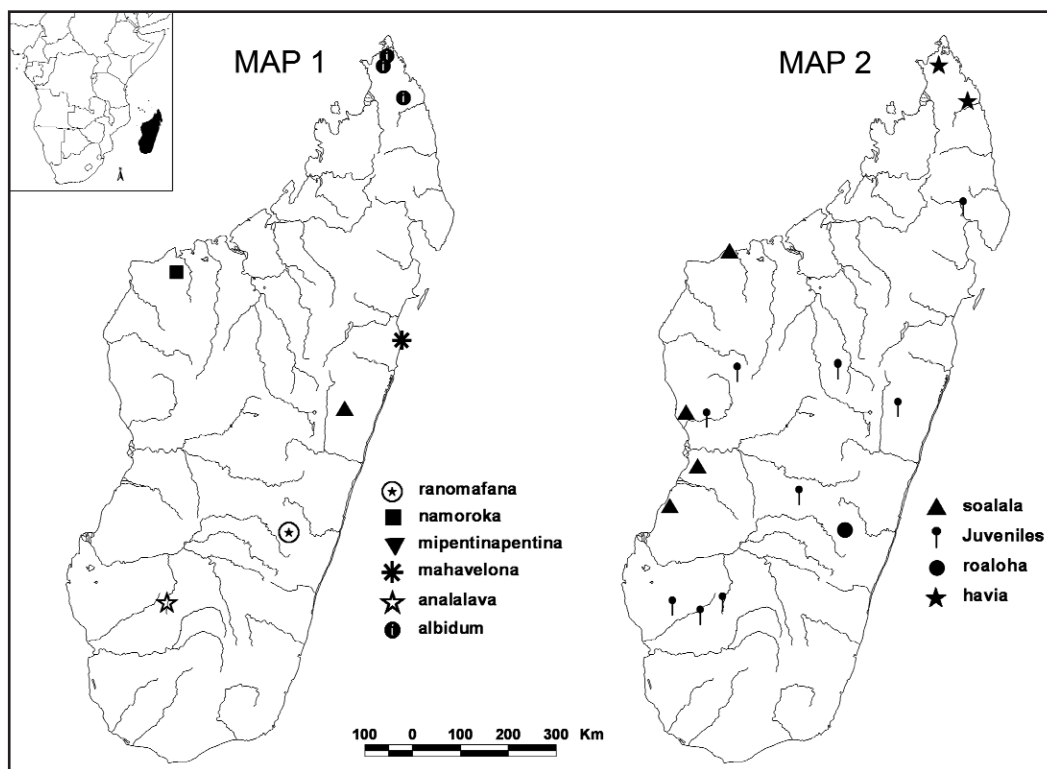


FIGURE 27. *Chrosioderma soalala* sp. nov. Female genitalia. A. Epigynum, ventral view; arrows to LL hood-like projections. B. Vulva, dorsal view; arrow to stalk of spermatheca. BS = base of spermatheca, CD = copulatory duct, FD = fertilization ducts, HS = head of spermatheca, MS = epigynal median sector.

FIGURE 28. Distribution range for *Chrosioderma* species.

Page intentionally left blank