



A new species of *Supramontana* Carbayo & Leal-Zanchet (Platyhelminthes, Continenticola, Geoplanidae) from the Interior Atlantic Forest

LISANDRO NEGRETE^{1,2}, ANA MARIA LEAL-ZANCHET³ & FRANCISCO BRUSA^{1,2,4}

¹División Zoología Invertebrados, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, Paseo del Bosque s/n, La Plata, Argentina

²CONICET

³Instituto de Pesquisas de Planárias, Universidade do Vale do Rio dos Sinos, 93022-000 São Leopoldo, Rio Grande do Sul, Brazil

⁴Corresponding author. E-mail: fbrusa@fcnym.unlp.edu.ar

Abstract

Supramontana argentina **sp. nov.** (Platyhelminthes, Continenticola, Geoplanidae) from north-eastern Argentina is herein described. The new species differs from *Supramontana irritata* Carbayo & Leal-Zanchet, 2003 from Brazil, the only species of this genus so far described, by external and internal morphological characters. *Supramontana argentina* **sp. nov.** is characterized by having a colour pattern with a yellowish median band, thin para-median black stripes, and two dark grey lateral bands on the dorsal surface. The most outstanding features of the internal morphology are a ventral cephalic retractor muscle almost circular in cross section, prostatic vesicle extrabulbar, tubular and very long, and penis papilla conical and blunt with a sinuous ejaculatory duct.

Key words: triclads, land planarian, Geoplaninae, Argentina, Neotropical Region

Introduction

The taxonomy of land planarians (Geoplanidae) is mainly based on a combination of external morphological features and internal anatomical characters, mostly of the copulatory apparatus, which are revealed by histological techniques (Winsor 1998). Some aspects of the internal morphology, especially of the cephalic region, have not been considered by some researchers, and are therefore unknown in many species (Carbayo & Leal-Zanchet 2003). The importance of studying these structures for taxonomy purposes was previously suggested by CG Froehlich (1955) and EM Froehlich (1978). The taxon is not sufficiently known, thus current classification is in continuous change.

The genus *Supramontana* Carbayo & Leal-Zanchet, 2003 (Geoplaninae) was erected to include one species of land planarian with a certain cephalic muscular specialization. This flatworm species possesses a cephalic retractor muscle consisting of fibres of the ventral cutaneous longitudinal muscular layer sunk into the parenchyma (Carbayo & Leal-Zanchet 2003). The existence of a retractor muscle in the cephalic region has been reported in other Geoplaninae genera. However, *Supramontana* is distinguished from the rest of the current Geoplaninae by a combination of characters of the internal morphology, such as ventral longitudinal cutaneous musculature in two layers, sub-neural parenchymatic muscle layer along the body, presence of a (permanent) penis papilla, and common glandular ovovitelline duct horizontal and dorsal to the female atrium. This combination of characters precluded the authors from placing the species in any of the known genera of Geoplaninae. In this paper we describe a new species of *Supramontana* that inhabits the southern portion of the Interior Atlantic Forest in north-eastern Argentina.

Material and methods

Land planarians were collected from 2008 to 2013 in the Interior Atlantic Forest ecosystem in north-eastern Argentina: Reserva de Vida Silvestre Urugua-í (RVSU) (25°59' S, 54°05' W), Campo Anexo Manuel Belgrano (CAMB) in San Antonio County (26°02' S, 53°47' W) and Iguazú National Park (INP) (25°39' S, 54°27' W), in Misiones province. The RVSU and INP are within the Paranaense Forest, which is characterized by a semideciduous seasonal forest, and CAMB belongs to the *Araucaria* Moist Forest, which is dominated by Paraná pine *Araucaria angustifolia* and tree ferns (Giraudó *et al.* 2003).

The specimens were manually collected during the day beneath fallen logs, and during the night, when planarians crawl above the soil. The animals were photographed *in vivo* and their external morphology and colour pattern were recorded. The animals were euthanized in boiling water, fixed in 10% formaldehyde and conserved in 70% ethanol. Body fragments corresponding to the anterior body region, pre-pharyngeal region, pharynx and copulatory apparatus were dehydrated in an ascending series of ethanol and embedded in Paraplast®. Sagittal and transverse serial sections (6–8 µm thick) of the anterior body region, pre-pharyngeal region, pharynx and copulatory apparatus were stained with Masson's trichrome and hematoxylin–eosin methods (Romeis 1989). The cutaneous musculature height to body height ratio (cutaneous muscular index, CMI) was calculated according to CG Froehlich (1955) from transverse sections at the pre-pharyngeal level. The parenchymatic musculature height to body height ratio (parenchymatic muscular index, PMI) was also calculated in the same histological preparations. The copulatory apparatus of the specimens was reconstructed for descriptive and identification purposes.

The holotype and paratypes were deposited in the Invertebrate Collection at Museo de La Plata (MLP), Argentina.

Taxonomy

Family Geoplanidae Stimpson, 1857

Subfamily Geoplaninae Stimpson, 1857

Genus *Supramontana* Carbayo & Leal-Zanchet, 2003

Supramontana argentina sp. nov.

Type series. Holotype: MLP 6699. Argentina, Misiones, INP, 13.IV.2013, L. Negrete, coll.; anterior region 1: transverse sections on 17 slides; anterior region 2: sagittal sections on 30 slides; pre-pharyngeal region: transverse sections on 6 slides; pharynx: sagittal sections on 18 slides; copulatory apparatus: sagittal sections on 35 slides.

Paratypes: MLP 6698. Argentina, Misiones, RVSU, 05.V.2008, L. Negrete, coll.; anterior and pre-pharyngeal regions: transverse sections on 17 slides; pharynx and copulatory apparatus: sagittal sections on 7 slides. MLP 6476. Argentina, Misiones, RVSU, 21.VIII.2009, L. Negrete, coll.; anterior region: sagittal sections on 14 slides; pre-pharyngeal region: transverse sections on 3 slides; pharynx and copulatory apparatus: sagittal sections on 28 slides. MLP 6475. Argentina, Misiones, CAMB, 20.III.2010, L. Negrete, coll.; anterior region: sagittal sections on 15 slides; pre-pharyngeal region: transverse sections on 3 slides; pharynx and copulatory apparatus: sagittal sections on 30 slides.

Diagnosis. Species of *Supramontana* with dorsal surface with a yellowish median band, bordered by two black para-median stripes, and two dark grey lateral bands; ventral surface whitish; ventral cephalic retractor muscle almost circular in cross section; prostatic vesicle extrabulbar, tubular and very long; penis papilla conical and blunt with a sinuous ejaculatory duct.

Type locality. Iguazú National Park, in native subtropical forest.

Habitat. The flatworms were found on the ground under fallen logs and when they were crawling at night, in environments with native vegetation.

Etymology. The specific name honours Argentina, the country where the species occurs.

External morphology. The body is elongate, with parallel margins, slightly wider at the pharyngeal level, narrowing towards the ends. The anterior tip is rounded while the posterior tip progressively narrows ending sharp-edged. The colour pattern of the dorsal surface is dark grey, constituting two lateral bands (2/3 of body width) and black para-median stripes (~1/10 of body width each one). In addition, there is a yellowish median band (1/5 of body width) that extends along the body except for a small portion of the anterior region. Body margins are whitish as the ventral surface (Figures 1, 2). The eyes present clear halos. They surround the anterior tip uniserially and extend toward both margins of the body for 2–4 mm. Further back, they spread to both sides of the dorsal surface, forming various rows and extending over para-median stripes (Figure 2). They are numerous until the pharyngeal level, and posteriorly maintain the same position but in less quantity. They become marginal at the level of the copulatory apparatus, reaching the posterior end.

The largest specimen reached 60 mm in length *in vivo*. After fixation, body length ranged from 17 mm to 45 mm, maximum width 1.6–2.9 mm, and maximum height 0.6–1.7 mm. The mouth was located at a distance of 54–65% from the anterior tip, and the gonopore at 76–83% (Table 1).

TABLE 1. Measurements (mm) of the type-specimens of *Supramontana argentina* sp. nov. All the measurements were obtained from fixed specimens. DG, distance of gonopore from anterior end; DM, distance of mouth from anterior end; DMG, distance between mouth and gonopore. The numbers given in parentheses represent the position relative to body length (%).

	Holotype MLP 6699	Paratype MLP 6698	Paratype MLP 6476	Paratype MLP 6475
Length	39.5	17	37	45
Maximum width	2.9	1.6	2.1	2.4
Height	1.45	0.62	1.2	1.77
DM	23.7 (60)	11 (65)	20 (54)	27 (60)
DG	32.8 (83)	14 (82)	28 (76)	36 (80)
DMG	9.1	3	8	9
Creeping sole (%)	85	90	90	90



FIGURE 1. *Supramontana argentina* sp. nov. Photograph of a live specimen (holotype), in dorsal view.

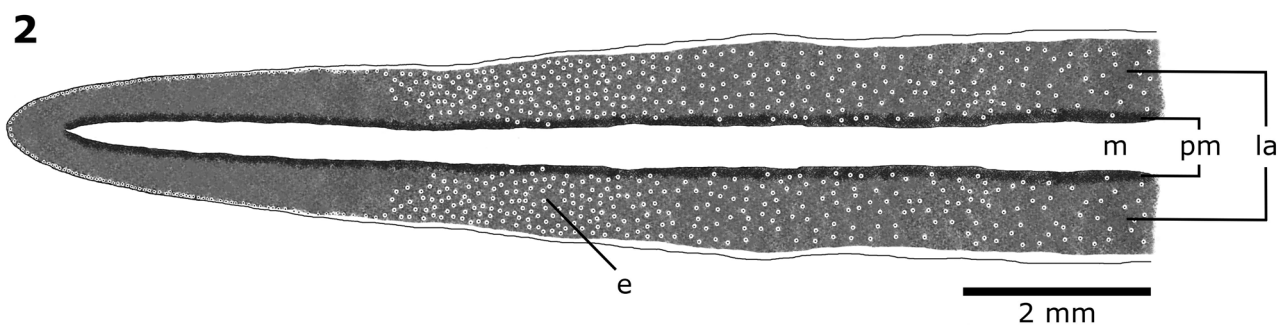
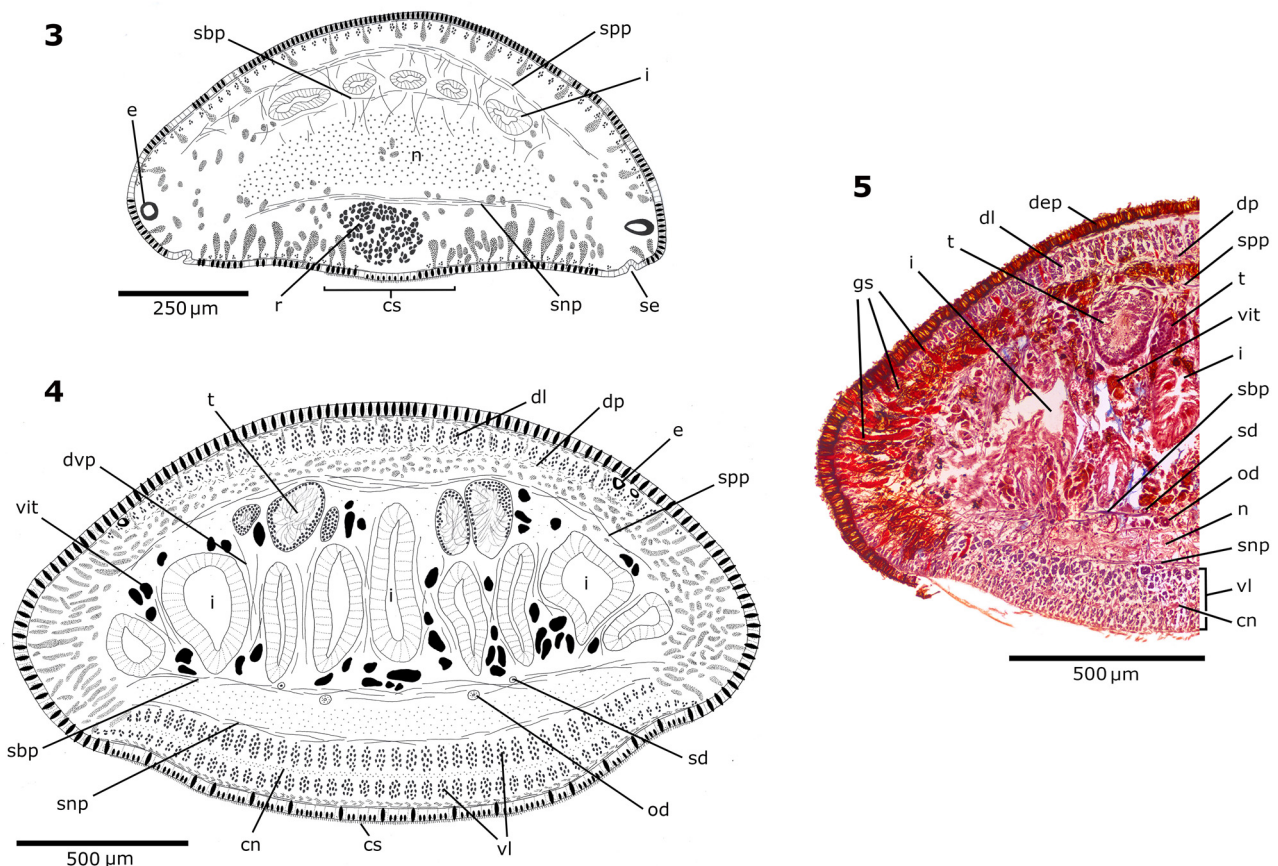


FIGURE 2. *Supramontana argentina* sp. nov. Schematic drawing of the colour pattern and eyes at the anterior third of body, in dorsal view (paratype MLP 6475). (e) eyes, (la) lateral bands, (m) median band, (pm) para-median stripes.

Internal morphology. Cephalic region. The position and arrangement of the cutaneous muscle layers differ from those in the pre-pharyngeal region (see below) in that the ventral longitudinal cutaneous muscle layer is sunk into the parenchyma and forms a retractor muscle that is almost circular in cross section (Figure 3). This retractor muscle diminishes in thickness towards the anterior end until disappear next to the tip. Backward it becomes progressively wider and finally form two layers of longitudinal muscles that occupy ventrally the whole width of body, separated each other by a nerve plexus (Figures 4, 5). Circular, oblique and dorsal longitudinal layers of the cutaneous musculature are thinner than in the pre-pharyngeal region. The parenchymatic musculature is arranged as supra-intestinal and sub-intestinal transverse layers, thinner as the intestine becomes less apparent towards the tip. Dorso-ventral fibres are scarce. There is a sub-neural transverse parenchymatic muscle layer, located just below the nerve plate and above the retractor muscle (Figure 3). Sensory pits, as a simple invagination of ventral epidermis (25–45 μm deep), surround the cephalic region (Figure 3).



FIGURES 3–5. *Supramontana argentina* sp. nov. (3) Schematic drawing of a transverse section of the cephalic region (holotype); (4) schematic drawing of a transverse section of the pre-pharyngeal region (paratype MLP 6476); (5) half of a transversal section of the pre-pharyngeal region (paratype MLP 6476). (cn) cutaneous nerve net, (cs) creeping sole, (dep) dorsal epidermis, (dl) dorsal cutaneous longitudinal musculature, (dp) dorsal parenchymatic musculature, (dvp) dorso-ventral parenchymatic musculature, (e) eye, (gs) glandular secretion, (i) intestine, (n) nervous plate, (od) ovovitelline duct, (r) retractor muscle, (sbp) sub-intestinal parenchymatic musculature, (sd) sperm duct, (se) sensory pit, (snp) sub-neural parenchymatic musculature, (spp) supra-intestinal parenchymatic musculature, (t) testes, (vit) vitellaria, (vl) ventral cutaneous longitudinal musculature.

Numerous rhabditogen cells with xanthophil secretion (rhammites), cells with coarse granular erythrophil secretion ($\sim 2.5 \mu\text{m}$), and cells with strong cyanophil, coarse granular secretion ($\sim 2 \mu\text{m}$) open through anterior tip and dorsal epidermis. The narrow creeping sole—between 14% and 51% of body width on first 0.7 mm of body length—receives abundant coarse granular strong cyanophil secretion ($\sim 2.5 \mu\text{m}$). In addition, less frequent rhabditogen cells (small rhabdites) and erythrophil cells with fine granular secretion (about $1 \mu\text{m}$) open through the creeping sole. The remaining ventral surface presents abundant rhabditogen cells with xanthophil secretion

(rhammites), numerous cells with strong cyanophil, coarse granular secretion ($\sim 2\ \mu\text{m}$), and less frequent cells with ill-defined, coarse granular secretion ($\sim 3\ \mu\text{m}$).

Epidermis and musculature at pre-pharyngeal region. Five types of secretory cells open through dorsal epidermis (15–25 μm high) and body margins: (1) numerous cells with coarse granular erythrophil secretion ($\sim 3\ \mu\text{m}$), (2) abundant rhabditogen cells with xanthophil secretion (rhammites), and less frequent (3) erythrophil cells with fine granular secretion ($<1\ \mu\text{m}$), (4) weakly cyanophil cells with amorphous secretion and (5) cells with strong cyanophil, coarse granular secretion ($\sim 2\ \mu\text{m}$). There is no glandular margin (Figures 4, 5). Ventral epidermis (22.5–30 μm high) is ciliated on creeping sole, which is approximately 85–90% of body width (Figure 4). Four types of glands discharge their secretion through the creeping sole: abundant cells with coarse granular, strong cyanophil secretion ($\sim 3\ \mu\text{m}$), rhabditogen cells (with small rhabdites) and erythrophil cells of two types, one with fine ($<1\ \mu\text{m}$) and other with coarse ($\sim 2\ \mu\text{m}$) granular secretion.

The cutaneous musculature consists of three layers: a thin external subepithelial layer of circular muscles, followed by a diagonal layer with decussate fibres, and a thicker longitudinal layer arranged in bundles. Ventrally, the longitudinal layer is thicker than dorsally, being subdivided into two portions, one just below the diagonal fibres, and the innermost one sunk into the parenchyma (Figures 4, 5, Table 2). The CMI varies between 14% and 21% (Table 2).

TABLE 2. Thickness of cutaneous (CM) and parenchymatic (PM) musculatures (μm), and CMI and PMI indices at pre-pharyngeal region of type-specimens of *Supramontana argentina* sp. nov.

	Holotype MLP 6699	Paratype MLP 6698	Paratype MLP 6476	Paratype MLP 6475
CM dorsal				
Circular	2.5	2.5	5	5
Diagonal	10	10	12.5	15
Longitudinal	65	45	56	65
Total	77.5	57.5	73.5	85
CM ventral				
Circular	2.5	2.5	5	5
Diagonal	15	10	12.5	10
Longitudinal (external)	75	25	50	50
Longitudinal (internal)	100	50–75	100	90
Total	192.5	87.5–112.5	167.5	155
CMI (%)	19	18–21	20	14
PM dorsal	50	20	35	37.5–50
PM supra-intestinal	15–35	10	35	50–62.5
PM sub-intestinal	20–40	12.5	25	25
PM sub-neural	5–10	10	15–25	50
PMI (%)	6–9	8	9–10	9–11

The parenchymatic musculature is composed by four layers: a dorsal subcutaneous with oblique fibres, a supra-intestinal and a sub-intestinal transverse layers, and a sub-neural transverse layer (Figures 4, 5). Also, dorso-ventral fibres are arranged among intestinal branches. The thickness of the parenchymatic musculature represents 6–11% of body height (Table 2).

Digestive system. The pharynx (1.4–2.75 mm in length) is bell-shaped, with the dorsal insertion at mouth level or a bit posteriorly displaced (Figure 6). The mouth is situated in the anterior third of the pharyngeal pouch (1.45–3.75 mm in length). The epithelial lining of the outer surface of the pharynx is cuboidal and ciliated. The outer pharyngeal musculature is arranged in two layers: a thin longitudinal subepithelial layer (2.5–5 μm thick) followed by a subjacent circular layer (25–27.5 μm thick). The epithelium of the pharyngeal lumen is columnar, ciliated, and

strongly erythrophil. The inner pharyngeal musculature consists of a circular subepithelial layer (25–50 μm thick) followed by a subjacent longitudinal one (10–37.5 μm thick). Six secretory cell types, three of them with cell necks close to the epithelium of the pharyngeal lumen, open through this epithelium: cells with fine granular erythrophil secretion (<1 μm); cells with fine granular cyanophil secretion (1 μm), and cells with fine granular weak cyanophil secretion (1 μm). Other three types of glands show cell necks close to the outer epithelium of the pharynx, opening through the pharyngeal tip: cells with cyanophil amorphous secretion; cells with coarse granular erythrophil secretion (~3 μm); and cells with fine granular weak erythrophil secretion (<1 μm). The oesophagus is absent (Figure 6).

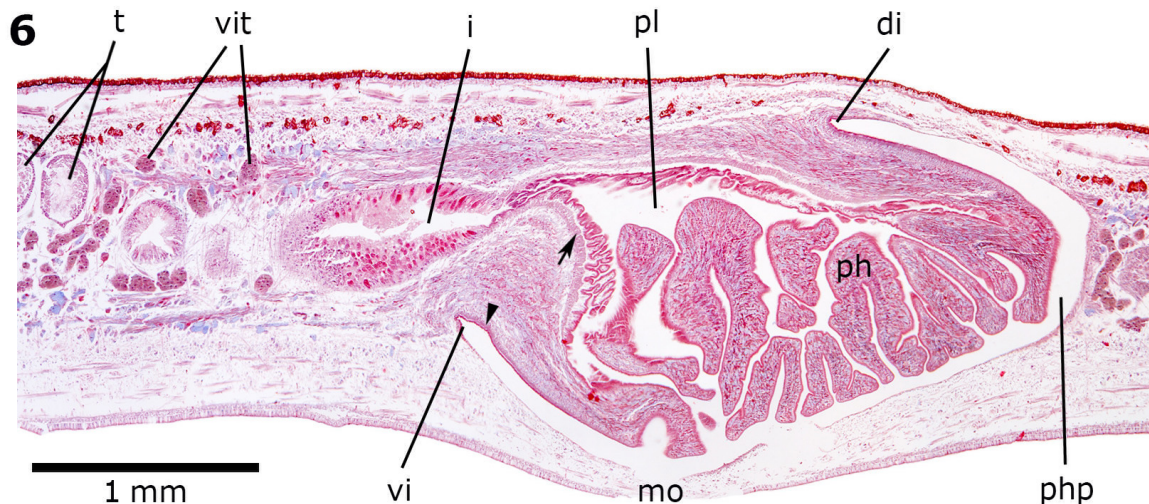


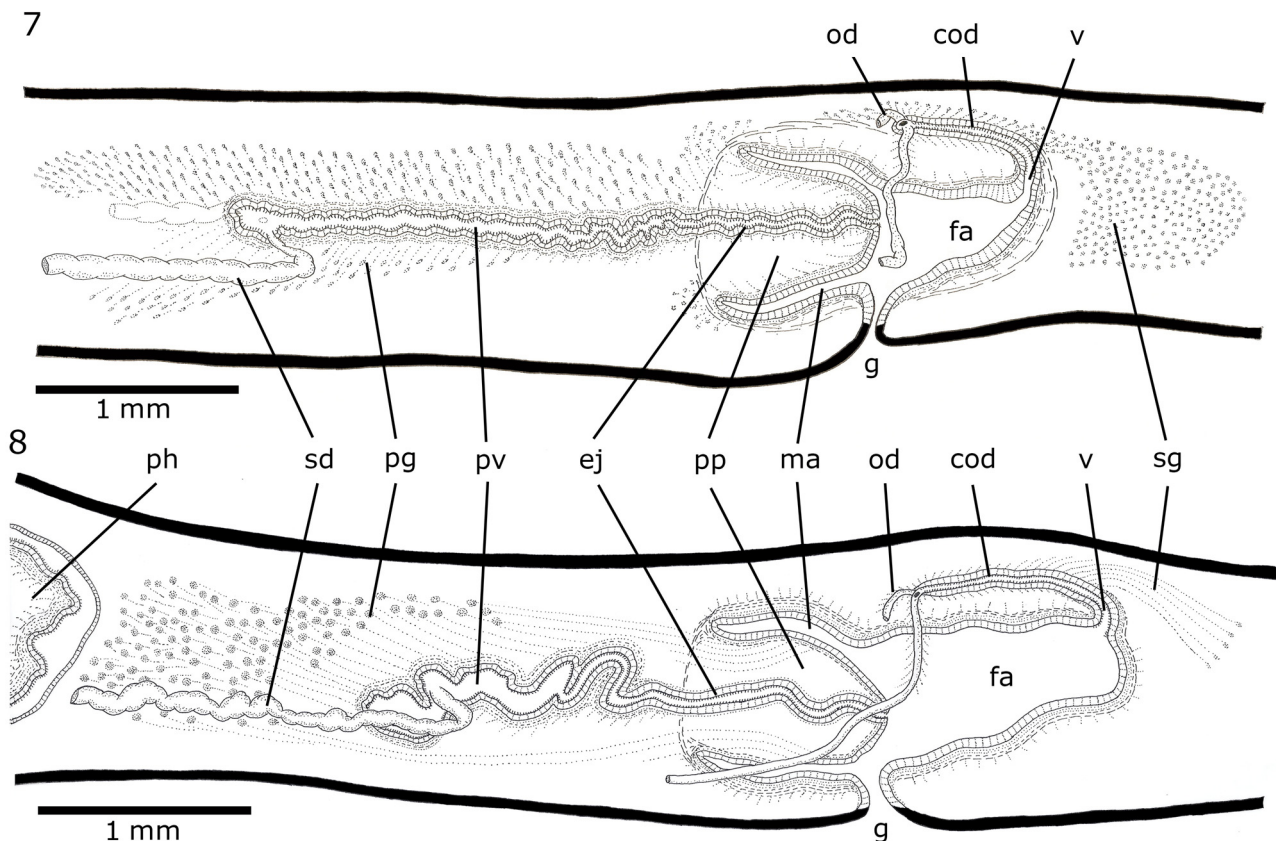
FIGURE 6. *Supramontana argentina* sp. nov. (holotype). Sagittal section of the pharynx. (di) dorsal insertion, (i) intestine, (mo) mouth, (ph) pharynx, (php) pharyngeal pouch, (pl) pharyngeal lumen, (t) testes, (vi) ventral insertion, (vit) vitellaria. The arrowhead indicates the outer pharyngeal musculature and the arrow indicates the inner pharyngeal musculature.

Male reproductive system. The testes are arranged in two or three rows on each side of the body, dorsal to the intestinal branches and just below the supra-intestinal parenchymatic muscle layer (Figures 4, 5). They are pre-pharyngeal, appearing behind the ovaries and extending to near the level of the ventral pharyngeal insertion. They are located at a distance between 18–23% and 48–61% of the body length from anterior end (Table 3). Testes are rounded or ovoid, occupying 9–23% of the height of body (Table 3). The sperm ducts are located above the sub-intestinal parenchymatic muscle layer or among its fibres, being dorsal to the ovovitelline ducts, laterally displaced (Figures 4, 5). The sperm ducts expand distally with their lumen full of spermatozoa. They bend toward the dorsum and slightly backward and open laterally into the proximal portion of the prostatic vesicle (Figures 7, 8). The extrabulbar prostatic vesicle is a long unpaired tube. Its proximal portion is almost straight and dilated; the rest of the prostatic vesicle is tortuous. The ejaculatory duct runs almost centrally in sinuous way through the penis papilla. The latter occupies the entire length of the male atrium, being conical and blunt in shape, with its insertions at the same transverse level (Figures 7–10). The walls of the male atrium are not folded.

The prostatic vesicle is lined with ciliated columnar epithelium followed by a muscular layer with intermingled circular and less abundant longitudinal fibres (10–30 μm thick) (Figures 7–9). The cell necks of numerous secretory cells with fine granular erythrophil secretion (<1 μm) and less abundant cyanophil cells with coarse granular secretion (~2 μm) open through the epithelium of the prostatic vesicle. The cell bodies of these glands are found in the parenchyma, mainly around the prostatic vesicle (Figures 7–9). The ejaculatory duct is lined with ciliated columnar epithelium, followed by a thin muscle layer of circular fibres mixed with some longitudinal fibres (5–15 μm thick). The ejaculatory duct receives abundant secretion from cells with coarse granular cyanophil secretion (~2 μm) and less abundant cells with fine granular erythrophil secretion (<1 μm). The epithelium of the penis papilla is columnar, progressively lower towards the tip, and the musculature is arranged in a circular subepithelial layer (5–15 μm thick) followed by a longitudinal one (2.5 μm thick). Five types of secretory cells run longitudinally in the papilla, with numerous openings through its lining epithelium: abundant cells with fine

granular erythrophil secretion ($<1\text{ }\mu\text{m}$) (type I); cells with coarse granular erythrophil secretion ($\sim 2\text{ }\mu\text{m}$) (type II); cells with cyanophil coarse granular secretion ($>2\text{ }\mu\text{m}$) (type III); cells with fine densely arranged granular xanthophil secretion ($\sim 0.5\text{ }\mu\text{m}$) (type IV); and cells with cyanophil fine granular secretion ($\sim 0.5\text{ }\mu\text{m}$) (type V). Cell types I, II and V have their cell bodies located externally to the common muscle coat, the latter concentrating their openings mainly close to the ventral insertion of the papilla. Cell types III and IV have subepithelial cells bodies. The male atrium is lined by a columnar epithelium progressively higher towards the gonopore (Figure 10). Its muscularis is composed by a subepithelial circular layer ($5\text{--}15\text{ }\mu\text{m}$ thick) followed by a longitudinal subjacent layer ($25\text{--}50\text{ }\mu\text{m}$ thick). The same five types of glands described for the penis papilla discharge their secretions through the epithelium of the male atrium. Type V mainly opens into the proximal portion of the male atrium, close to the ventral insertion of the papilla.

Female reproductive system. The ovaries are situated at a distance of 16–21% body length from anterior end (Table 3). They are ovoid and distally elongate. The ovaries are located between the sub-intestinal muscle layer and the nerve plate. The ovovitelline ducts emerge dorsally from anterior half of the ovaries and pass along the dorsal side of them, situated dorsally to the nerve plate (Figure 11). Approximately at the level of the gonopore, the ovovitelline ducts begin to ascend describing a sinuous course and then rise almost vertically, bending toward sagittal plane, along $150\text{--}200\text{ }\mu\text{m}$, and open into a common glandular ovovitelline duct. The common glandular ovovitelline duct ($300\text{--}600\text{ }\mu\text{m}$ in length) is an almost horizontal canal, dorsal to the female atrium (Figures 7, 8, 13). The vagina is a tubular diverticulum ($200\text{--}300\text{ }\mu\text{m}$ in length) that curves downward to open dorsally into the female atrium. The female atrium is a wide cavity with scarcely folded walls, continuous with the male atrium (Figures 7–9).



FIGURES 7–8. *Supramontana argentina* sp. nov. Sagittal reconstructions of the copulatory apparatus: holotype (7); paratype MLP 6698 (8). (cod) common glandular ovovitelline duct, (ej) ejaculatory duct, (fa) female atrium, (g) gonopore, (ma) male atrium, (od) ovovitelline duct, (pg) prostatic glands, (ph) pharynx, (pp) penis papilla, (pv) prostatic vesicle, (sd) sperm duct, (sg) shell glands, (v) vagina.

TABLE 3. Measurements (mm) of reproductive organs of type-specimens of *Supramontana argentina* **sp. nov.** LCGD, length of common glandular ovovitelline duct; LFA, length of female atrium; LMA, length of male atrium; LPP, length of penis papilla; LPV, length of prostatic vesicle; LV, length of vagina; T:BH, ratio of the height of testes to the height of the body. The numbers given in parentheses represent the position relative to body length (%).

	Holotype MLP 6699	Paratype MLP 6698	Paratype MLP 6476	Paratype MLP 6475
Anteriormost testes	9 (23)	3.9 (23)	6.5 (18)	—
Posteriormost testes	22.7 (57)	10.4 (61)	17.9 (48)	26 (58)
T:BH (%)	15–22	15–18	9–23	12
LPV	2.25	0.9	1.8	2.2
LPP	0.8	0.5	0.38	0.48
LMA	0.85	0.6	0.7	0.6
Location of ovaries	8.1 (20)	3.6 (21)	6 (16)	—
LCGD	0.4	0.3	0.6	0.3
LV	0.3	0.2	0.25	0.25
LFA	0.6	0.5	1.1	0.9

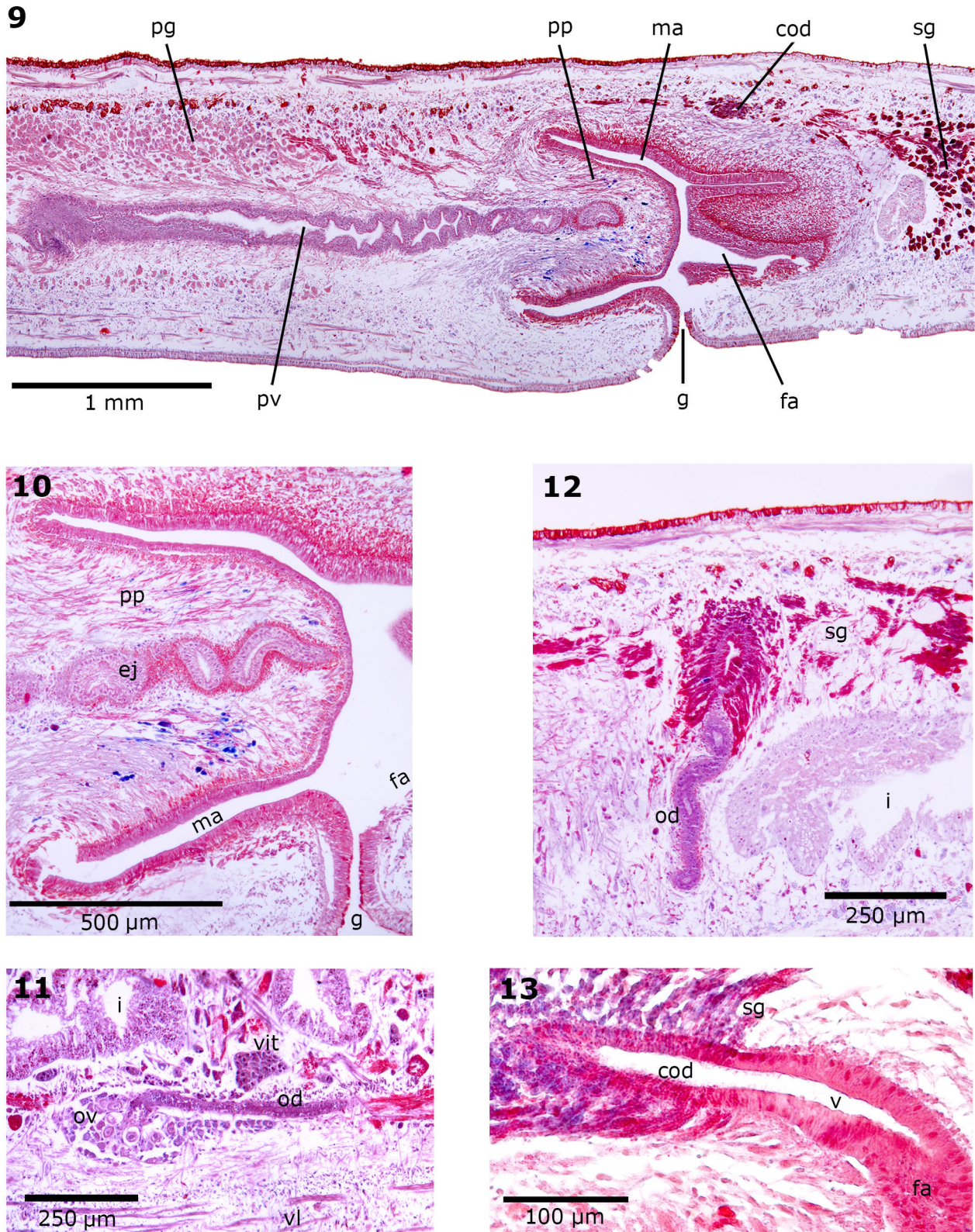
The epithelium lining the ovovitelline ducts is ciliated and cuboidal. Cells with fine granular erythrophil secretion and scarce shell glands open into the vertical portions of the ovovitelline ducts, while the sagittal distal tracts receive abundant secretion from the shell glands (Figure 12). The common glandular ovovitelline duct is lined with a ciliated columnar epithelium (Figure 13), receiving abundant secretion of two types of shell glands: xanthophil coarse granular secretion (~2–3 µm) and cyanophil coarse granular secretion (~3–4 µm). Both glands have their cell bodies in the parenchyma, posteriorly to the copulatory apparatus (Figure 9). The vagina is lined with a ciliated columnar epithelium and the musculature is composed by circular subepithelial layer (5–15 µm thick) and a longitudinal subjacent layer (10–15 µm thick). The epithelium of the vagina receives few secretory cells of three types, similar to types I, III and IV of the penis papilla and male atrium. The female atrium is lined by a non-ciliated pluriestratified epithelium and the muscularis is arranged in two layers, circular subepithelial (10–25 µm thick) and longitudinal subjacent (10–20 µm thick). Four types of secretory cells, similar to types I, II, III and IV of the penis papilla and male atrium, open into female atrium. The common muscular coat is mainly composed by longitudinal fibres, thicker dorsally (~50 µm thick) than ventrally (~25 µm thick), besides some oblique and circular fibres.

Vitellaria are well developed and are dispersed throughout the body. In the anterior and pre-pharyngeal regions vitellaria extend dorsally, ventrally and between intestine branches (Figures 4–6), being abundant behind the copulatory apparatus.

Discussion

The external and internal characters of the new species herein described strongly support its inclusion into the genus *Supramontana* Carbayo & Leal-Zanchet, 2003.

Regarding the external morphology, when *Supramontana argentina* **sp. nov.** is crawling, the anterior end has an inverted ‘U’ shape in cross section, as described for the type-species by Carbayo & Leal-Zanchet (2003), like a gable roof. In relation to the internal characters, the new species presents, as the type-species of *Supramontana*, a mid-ventral retractor muscle in the cephalic region composed by fibres of the ventral cutaneous longitudinal muscular layer sunk into the parenchyma. Also, there is a sub-neural transverse parenchymatic muscular layer along the entire body (Carbayo & Leal-Zanchet 2003). Other features of *S. argentina* **sp. nov.** that agree with characteristics of the type-species of the genus are the absence of a glandular margin, the presence of a permanent penis papilla (protrusible penis), a male atrium without folded walls, and a long and horizontal common glandular ovovitelline duct dorsal to the female atrium.



FIGURES 9–13. *Supramontana argentina* **sp. nov.** (holotype). Sagittal sections: (9) copulatory apparatus; (10) penis papilla; (11) ovary; (12–13) details of the female reproductive system. (cod) common glandular ovovitelline duct, (ej) ejaculatory duct, (fa) female atrium, (g) gonopore, (i) intestine, (ma) male atrium, (od) ovovitelline duct, (ov) ovary, (pg) prostatic glands, (pp) penis papilla, (pv) prostatic vesicle, (sg) shell glands, (v) vagina, (vit) vitellaria, (vl) ventral cutaneous longitudinal musculature.

Supramontana argentina **sp. nov.** differs externally from the type-species of the genus by its dorsal colour pattern. *Supramontana irritata* possesses a pale yellowish background with dark brown spots dispersed onto the dorsum which forms a distinct narrow median stripe and three pairs of narrow stripes, varying in intensity among specimens (Carbayo & Leal-Zanchet 2003). The new species shows a colour pattern with a striking yellow median band and one pair of black stripes on a dark grey background.

Regarding the internal morphology, both species have an extrabulbar and unpaired prostatic vesicle, with its proximal region rather straight and dilated, and a sinuous distal portion. In *S. irritata* the ejaculatory duct is a straight canal without openings of secretory cells in its epithelium, but in *S. argentina* **sp. nov.** this duct runs sinuously through the penis papilla and receives abundant secretion. The penis papilla is similarly shaped in both species, but it is pointed in *S. irritata* and blunt in *S. argentina* **sp. nov.** Also, the male atrium is only partially occupied by the papilla in *S. irritata*, whereas the papilla occupies the whole cavity of the male atrium in *S. argentina* **sp. nov.** The female reproductive system of *S. argentina* **sp. nov.** is similar to that of *S. irritata*, except for the common glandular ovovitelline duct, which is longer in *S. irritata* (~1 mm) than in *S. argentina* **sp. nov.** (about half of this length).

The finding of a second species of *Supramontana* consolidates the identity of this genus, reinforces the diagnosis of the genus provided by Carbayo & Leal-Zanchet (2003), and extends its distribution range along the Atlantic Forest.

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