Tropical Zoology, Special Issue 1: 105-123, 1993

On two new species of *Schendylurus* Silvestri 1907 from Venezuela, with redescription of *S. colombianus* Chamberlin 1921 and *S. virgingordae* Crabill 1960 (Chilopoda Geophilomorpha Schendylidae)*

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Received 25 November 1991

Two new species of *Schendylurus* Silvestri 1907 are described, i.e., *S. minutus* n. sp. from Rancho Grande, Venezuela, and *S. paolettii* from Boconó, Venezuela. Two further species of the same genus are redescribed, viz., *S. colombianus* Chamberlin 1921 (after the holotype) and *S. virgingordae* Crabill 1960 (after a new specimen from the coralline bay Playa Mero, Morrocoy, State of Falcón, Venezuela, which has been compared with the type material). This latter species seems to be halophilous, probably distributed across oceanic spaces by rafting. A key is provided for the identification of the species of *Schendylurus* of Bolivia, Peru, Ecuador, northern South America, Central America and the West Indies.

KEY WORDS: Chilopoda, Geophilomorpha, Schendylidae, *Schendylurus*, Venezuela, Neotropical Region.

* Paper contributed to the International Symposium on Agroecology and Conservation Issues in Temperate and Tropical Regions, Padova, Italy, September 26-29, 1990.

INTRODUCTION

We have recently had the opportunity to work on the centipedes collected in Venezuela by Dr Maurizio G. Paoletti (Padova) during visits in 1987 and 1988. The collection includes several new taxa, as well as further material interesting from a faunistic and/or ecological point of view. This is the first of several papers in which we shall illustrate this collection and take the opportunity to revise some critical taxa as well as providing new keys to some Neotropical groups.

This first paper deals with the species belonging to the geophilomorph genus *Schendylurus* Silvestri 1907.

DESCRIPTION OF NEW OR LESS KNOWN SPECIES

Schendylurus minutus n. sp. (Figs 1-26)

Diagnosis. A *Schendylurus* species with well defined pore fields on the anterior and posterior segments, but without pores on the intermediate ones. Among the Neotropical species of the genus, only the present species and *S. demangei* share this trait. This new species can be differentiated from the last by means of the following characters (the corresponding ones in *S. demangei* are given in parentheses): body length 11 mm (29 mm); pore field series ending on the penultimate sternum (antepenultimate sternum); dentate lamellae of the mandible with 2 and 3 teeth respectively (4 and 7 or 3 and 7 teeth); coxosternum of the first maxillae without setae (with 2 + 2 setae); female with 53 pairs of legs (65); antennal articles II, V, IX and XII with minute undivided setae (with minute tripartite setae).

Material. Holotype ♀ with 53 pairs of legs, body length 11 mm. Venezuela: State Falcón, Parque E. Pittier, Rancho Grande, 16.VIII.1980, M.G. Paoletti legit (coll. Pereira).

Description of holotype (♀). Pairs of legs 53. Body length 11 mm; maximum body width 0.2 mm.

Colour yellowish.

Antennae 2.7 times longer than head, slightly attenuate distally; articles, but for I and II, slightly longer than wide. Setae on articles I-VI few in number; those of following articles progressively shorter and more numerous towards the distal ends of appendages (Fig. 1). Last article with modified claviform setae, 15 on the external apical edge and 2 on the medial apical edge; distal end with 5 minute undivided setae (Fig. 3). Articles II, V, IX and XIII with one similar seta on both ventral and dorsal side (Fig. 2).

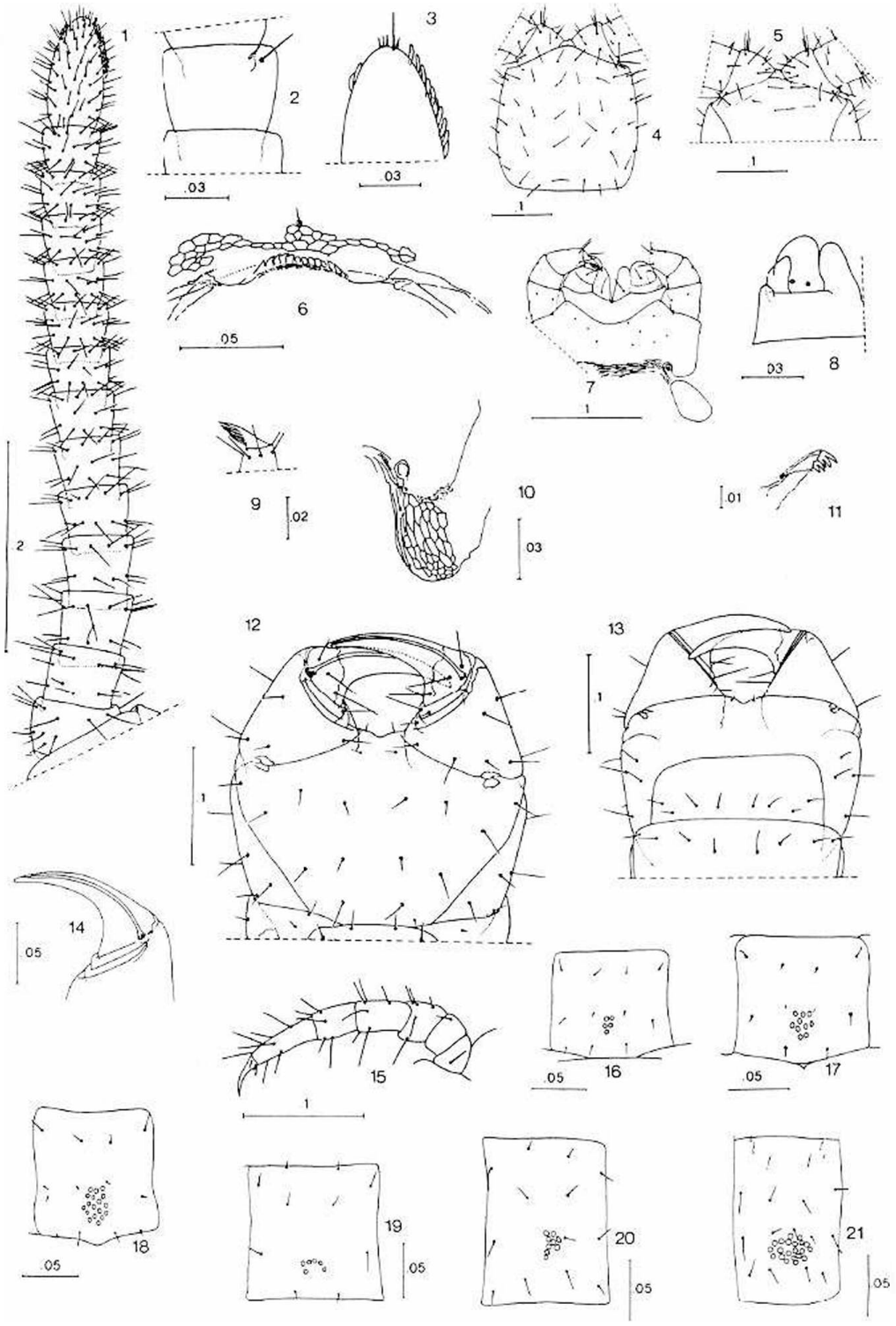
Cephalic plate (Fig. 4) slightly longer than wide (length to width ratio as 1.1 to 1).

Clypeus with 1 + 1 postantennal setae, 3 + 3 setae in the middle and 1 prelabral seta (Figs 5-6).

Labrum with 16 teeth, those in middle round-tipped, lateral ones provided each with a relatively long and very sharp medially-directed extension (Fig. 6).

Mandible: dentate lamella subdivided into 2 distinct blocks, with 2 and 3 teeth respectively (Fig. 11); pectinate lamellae with 5 hyaline teeth.

First maxillae with lappets on both coxosternum and telopodite. Coxosternum without setae; medial lobes subtriangular, with 1 + 1 setae. Article II of the telopodite with 1 + 1 ventral setae and 2 + 2 dorsal sensilla (Figs 7-8).



Figs 1-21. — *Schendylurus minutus* n. sp., female, holotype: Fig. 1, antenna (ventral); Fig. 2, right antennal article (a.a.) IX, dorsal; Fig. 3, apical region of the last left a.a.; Fig. 4, cephalic shield, dorsal; Fig. 5, clypeus and basis of antennae; Fig. 6, labrum; Fig. 7, first and second maxillae; Fig. 8, left first maxilla, dorsal; Fig. 9, claw of the telopodites of right second maxilla, dorsal; Fig. 10, detail of posterior external region of the second maxilla, ventral; Fig. 11, dentate lamellae of mandible; Fig. 12, forcipular segment with poison claws, ventral; Fig. 13, the same, dorsal; Fig. 14, detail of poison gland in left poison claw, ventral; Fig. 15, right leg XXXVI, antero-ventral; Figs 16-21, sterna II, III, X, XIX, XLVIII and LII. (Measurements in mm).

Second maxillae: coxosternum with 6+6 setae (Fig. 7); apical claw of the telopodite bipectinate, with 4 teeth both ventrally and dorsally (Fig. 9).

Forcipulae: when closed, telopodites not extending beyond anterior margin of head; all articles lacking teeth. Basal plate with an irregular transverse median row of 8 setae (Fig. 13). Coxosternal setae few (Fig. 12); calyx of poison gland as in Fig. 14.

Legs (last pair excepted) with few long setae (Fig. 15).

Terga shallowly but distinctly bisulcate, sparsely setose.

Sterna: pore fields on sterna II to XIX and XLVIII to LII, completely lacking on remaining ones. Fields always undivided, their form changing along the trunk from subcircular to subrectangular to irregular; number of pores 5 on sternum II, 10 on III, 18 on X, 6 on XIX, 9 on XLVIII and 21 on LII (Figs 16-20).

Last leg-bearing segment with pleurites at the sides of pretergum. Presternum not divided in the sagittal plane. Form and chaetotaxy on sternum and tergum as in Figs 22 and 23. Coxopleura with setae on almost whole surface, setae more numerous but smaller on distal ventral half; coxopleura ventrally not prominent at distal end. Two single («homogeneous») coxal organs at each side, opening on membrane between coxopleuron and sternum, with opening covered by sternum (Figs 22, 24). Last legs with 7 articles; chaetotaxy in form of numerous setae ventrally on trochanter, prefemur, femur and tibia, less numerous setae dorsally (Figs 22-23); pretarsi apparently absent, each replaced by a small apical spine (Fig. 26).

Terminal segments: intermediate sternum with posterior margin straight, first genital sternum with posterior margin medially convex, laterally concave. Gonopods uniarticulate, well developed (Fig. 22).

Male: unknown.

Depository of type. Coll. L.A. Pereira (La Plata).

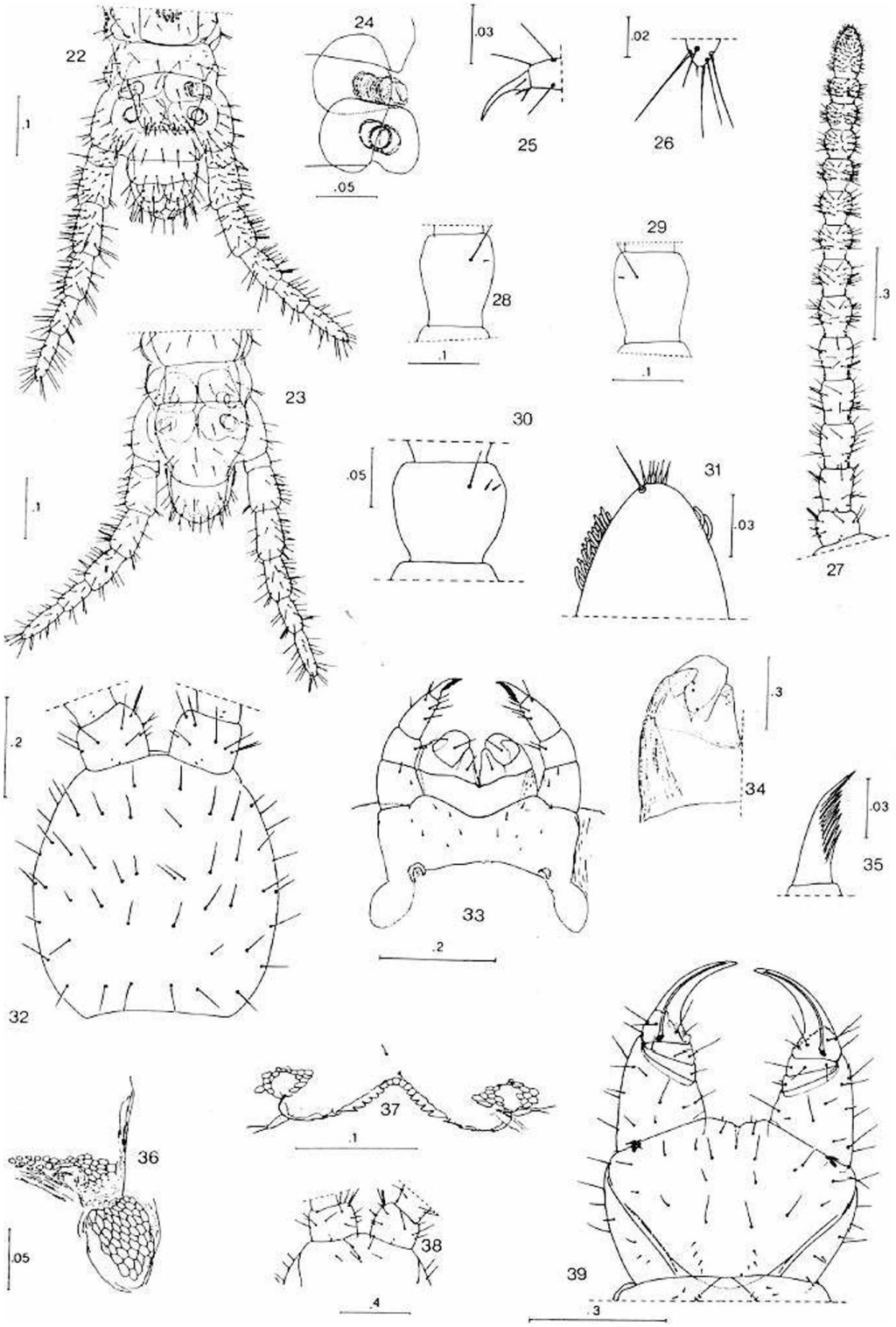
Etymology. «*minutus*», minute, from the very small size of this species.

Distribution. Known only from the type locality.

Remarks. This species is characterized by having well defined pore fields on the anterior (the first excluded) and posterior sterna. The other Neotropical species which share this trait are *S. elegantulus*, *S. colombianus*, *S. demangei*, *S. fieldi*, *S. gounellei*, *S. lesnei*, *S. madariagensis*, *S. olivaceus*, *S. pampeanus*, *S. paraguayensis*, *S. sublaevis*, *S. varipictus* and *S. verhoeffi*. Of all these species, however, only *S. minutus* and *S. demangei* have the pore field series interrupted in the middle part of the trunk.

Schendylurus paolettii n. sp. (Figs 27-57)

Diagnosis. A *Schendylurus* species with ventral pores lacking on the first sternum and present only on some of the anterior ones. Among the Neotropical species of the genus, this seems to be most closely related to *S. lomanus*. From the latter it can be differentiated as follows (traits for *S. lomanus* are given in parentheses): female with 37, 39 or 41 pairs of legs (43); dorsal side of antennal articles II and V with one minute, pale, undivided seta (without special minute setae), IX and XIII with 2 setae, one similar to that of article II or V and the other a little smaller and darker (only one pale minute undivided seta); pore fields subovoid (subcircular) from sternum II to XIV (II to XVIII).



Figs 22-26. — *Schendylurus minutus* n. sp., female, holotype: Fig. 22, last leg-bearing segment and terminal segments, ventral; Fig. 23, the same, dorsal; Fig. 24, detail of coxal organs, left, ventral; Fig. 25, claw of right leg XXXVI, antero-ventral; Fig. 26, detail of distal end of last podomere of left last leg.

Figs 27-39. — *Schendylurus paolettii* n. sp., female, holotype: Fig. 27, left antenna, ventral; Fig. 28, right a.a. V, dorsal; Fig. 29, left a.a. V., ventral; Fig. 30, right a.a. XIII, dorsal; Fig. 31, apical region of last right a.a., ventral; Fig. 32, cephalic shield, dorsal; Fig. 33, first and second maxillae, ventral; Fig. 34, right first maxilla, dorsal; Fig. 35, claw of left second maxilla, dorsal; Fig. 36, detail of posterior external region of left second maxilla; Fig. 37, labrum; Fig. 38, clypeus and basis of antennae; Fig. 39, forcipular segment with poison claws, ventral.

(Measurements in mm).

Type material. Holotype ♀ with 39 pairs of legs, 16 mm long; allotype ♂ with 37 pairs of legs, 14 mm long; paratype ♀ with 39 pairs of legs, 13 mm long, all from Venezuela, Andean region near Boconó, La Cristalina, 2500 m a.s.l., subparamo, rotten wood, II.1987, M.G. Paoletti legit, sample no. 85 (Coll. Pereira; Minelli).

Description. Holotype ♀. Pairs of legs 39. Body length 16 mm, maximum body width 0.5 mm.

Colour yellowish, but for the forcipular segment, which is clear orange.

Antennae 3.1 times as long as head, slightly attenuate distally, articles, except first, slightly longer than wide. Setae on articles I-VI few, either short or long; those of remaining articles progressively shorter and more numerous towards distal ends of the appendages (Fig. 27). Last article with modified claviform setae on the external and medial apical edges (about 18 on the external and 2 on the medial edge); distal end with about 5 minute undivided setae (Fig. 31). Articles II, V, IX and XIII with one minute, pale, undivided seta on the ventral side (Fig. 29), articles II and V with one dorsal seta equal to that present on ventral side (Fig. 28), articles IX and XIII with 2 setae, the one similar to ventral one, the other a little smaller and darker (Figs 41, 30).

Cephalic plate (Fig. 32) slightly longer than wide (length to width ratio as 1.1 to 1).

Prebasal plate with surface almost entirely exposed.

Clypeus with 1 + 1 postantennal setae, 2 + 2 setae in the middle and 1 + 1 prelabral setae (Fig. 38).

Labrum with 22 teeth, those of the central arc round-tipped, the lateral ones provided instead with a relatively long, very sharp extension directed towards the sagittal plane (Fig. 37).

Mandible with dentate lamella subdivided into 3 distinct blocks, with 3, 3 and 2 teeth respectively (Fig. 40); pectinate lamellae with 20 hyaline teeth.

First maxillae with lappets both on coxosternum and telopodites. Coxosternum without setae; medial lobes subtriangular, with 1 + 1 setae. Article II of the telopodite with 1 + 1 ventral setae and 3 + 3 dorsal sensilla (Figs 33-34).

Second maxillae: coxosternum with 6 + 6 setae (Fig. 33); apical claw of the telopodite bipectinate, with10 teeth both on the dorsal and the ventral sides (Fig. 35).

Forcipulae: when closed, telopodites not extending beyond anterior margin of head; trochanteroprefemur, femur and tibia without teeth, tarsungulum with a small pale tooth and inner margin not serrulate, basal plate with an irregular, transverse, median row of 8 setae; setae of coxosternum and telopodite as in Fig. 39; calyx of poison gland short and cylindrical (Fig. 46).

Legs (last pair excepted) with a few long setae (Fig. 47).

Terga shallowly but distinctly bisulcate, sparsely setose.

Sterna: pore fields only on sterna II to XIV. Fields always undivided, their form changing along trunk from subrectangular to subcircular to irregular; number of pores 10 on sternum II, 30 on sternum III, 40 on sternum X, 23 on sternum XIV (Figs 42-45).

Last pedal segment lacking pleurites at the level of pretergum. Presternum not divided on the sagittal plane; form and chaetotaxy of sternum and tergum as in Figs 49 and 50. Coxopleura not protruding at the ventral distal end, with a few setae dispersed over the surface, somewhat smaller and more numerous on the distal ventral half; two simple («homogeneous») coxal organs at each side, opening lying on mem-

brane between coxopleuron and sternum and covered by the latter (Figs 49, 52). Last legs of 7 articles, ventrally with numerous setae covering external half of prefemur, femur and tibia, remaining surfaces with less numerous but more robust setae (Figs 49-50); pretarsus very small, with 2 small apical spines (Fig. 51).

Terminal segments: intermediate and I genital sternum with posterior margin convex. Gonopods uniarticulate (Fig. 49).

Variability. Other female specimens with 37 and 41 pairs of legs.

Male allotype. Pairs of legs 37, body length 14 mm, maximum body width 0.4 mm.

All features similar to the female except for the last leg-bearing segment and the terminal segments.

Last leg-bearing segment: form and chaetotaxy of sternum and tergum as in Figs 53 and 54. Coxopleura not protruding at ventral distal end, ventrally with numerous setae on distal half, remaining surfaces with few setae (Figs 53-54); legs ventrally with numerous setae covering whole surfaces of articles, dorsally with less numerous but larger setae (Fig. 54).

Terminal segments: intermediate and first genital sterna with posterior margins slightly convex medially and slightly concave laterally (Figs 53, 55). Gonopods biarticulate, basal and distal articles with 9 setae (Fig. 56), penis dorsally with 1 + 1 apical setae (Fig. 57).

Variability. Other male specimens have 35 pairs of legs.

Depository of types. Coll. L.A. Pereira (La Plata); A. Minelli (Padova).

Etymology. The species is dedicated to the collector of the type series, Maurizio Guido Paoletti.

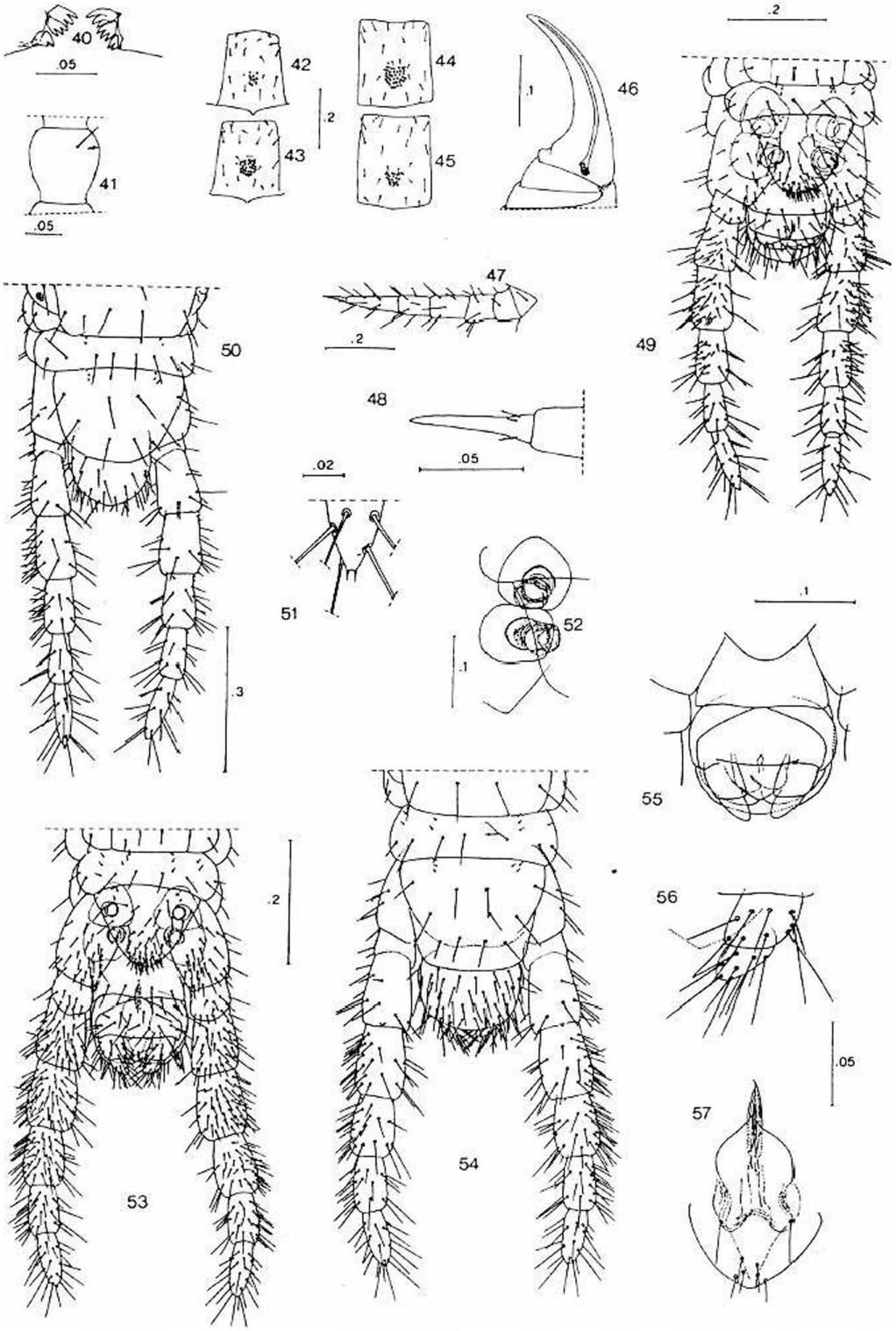
Other material examined. Venezuela: Andean region near Boconó, Guaramacal, 3000 m a.s.l., II.1987, M.G. Paoletti legit, sample no. 57: 1 ♀ with 41 pairs of legs, body length 14 mm; Boconó, Guaramacal, La Laguna, 2000 m a.s.l., II.1987, M.G. Paoletti legit, sample no. 89: 1 ♂ incomplete, 1 ♂ with 35 pairs of legs, body length 9 mm, 2 ♀♀ with 37 pairs of legs, body length 14 and 11 mm respectively; Boconó: Ande, Guaramacal, 2500 m a.s.l., II.1987, M.G. Paoletti legit, sample no. 81: 1 juv. with 37 pairs of legs, body length 7 mm.

Remarks. *S. paolettii* n. sp. finds a place within the Neotropical *Schendylurus* species having ventral pores only on the anterior sterna other than the first one. This group comprises *S. andesicola, S. dentifer, S. edentatus, S. interfluvius, S. lomanus, S. pallidus, S. perditus, S. peruanus, S. potosius, S. titicacaensis* and *S. virgingordae*. The differential characters for *S. paolettii* are given in the key below (in the key, however, *S. interfluvius* is not included for geographical reasons).

Schendylurus colombianus Chamberlin 1921 (Figs 58-86)

Schendylurus colombianus Chamberlin 1921: 20.
Schendylurus colombianus, Attems 1929: 77.
Schendylurus colombianus, Crabill 1972: 20.

Type material examined. Holotype, ♂ with 59 pairs of legs; body length 32 mm, maximum width 1 mm. Colombia: Fundación, 14.VIII.1913 («under bark of a log in the forest») Museum of



Figs 40-52. — *Schendylurus paolettii* n. sp., female, holotype: Fig. 40, dentate lamellae of mandibles; Fig. 41, right a.a. IX, dorsal; Figs 42-45, sterna II, III, X and XIV; Fig. 46, detail of poison gland in left poison claw, ventral; Fig. 47, right leg VI, ventral; Fig. 48, detail of the claw of the right III leg, ventral; Fig. 49, last leg-bearing segment and terminal segments, ventral; Fig. 50, the same, dorsal; Fig. 51, detail of distal end of last podomere of left last leg, ventral; Fig. 52, detail of coxal organs, right, ventral.

Figs 53-57. — *Schendylurus paolettii* n. sp., male, allotype: Fig. 53, last leg-bearing segment and terminal segments, ventral; Fig. 54, the same, dorsal; Fig. 55, genital region, ventral; Fig. 56, left gonopod, ventral; Fig. 57, penis, dorsal.

(Measurements in mm).

Comparative Zoology (Harvard, Mass.) 2184. This specimen is mounted in two original Chamberlin's microscope slides, one containing the trunk, the other the head and the mouthparts.

Redescription. Holotype ♂, 59 pairs of legs; body length 32 mm, width 11 mm.

Colour yellowish, but for the pale orange forcipular segment.

Antennae 3.0 times longer than head, distally attenuate; their articles, but for I and II, slightly longer than wide. Setae on articles I-V few, either short or long; those of remaining articles progressively shorter and more numerous towards distal ends of the appendages (Fig. 58). Last article with modified claviform setae on the external and medial apical edges (18 on the external and 1 on the medial edge); distal end with ca 4 pale undivided setae (Fig. 61). Articles II, V, IX and XIII with 1 pale minute, undivided seta on ventral side (Fig. 59), dorsally with 2 setae, one similar to the ventral one, the other darker and a little larger (Fig. 60).

Cephalic plate (Fig. 62) slightly longer than wide (length to width ratio as 1.2 to 1).

Clypeus with 1 + 1 postantennal setae, 4 + 4 setae in the middle and 1 + 1 prelabral setae (Fig. 63).

Labrum with a total of 26 teeth, those of central arc robust and dark, the lateral ones less sclerotized, each with a relatively long and very sharp medial extension (Fig. 66).

Mandible with dentate lamella subdivided in 3 distinct blocks, with 3, 3 and 2 teeth respectively (Fig. 64); pectinate lamellae with 20 hyaline teeth.

First maxillae with lappets both on coxosternum and telopodite. Coxosternum without setae, medial lobes subtriangular, with 1 + 1 setae. Article II of telopodite with 2 + 2 ventral setae and 4 + 4 dorsal sensilla (Figs 65, 74).

Second maxillae with 9 + 9 setae on the coxosternum (Fig. 74), apical claw of telopodite bipectinate, with 12 ventral and dorsal teeth (Fig. 75).

Forcipulae: when closed, telopodites not extending beyond anterior margin of head; all articles lacking teeth; basal plate with an irregular transverse median row of 9 setae; coxosternal setae few in number, a little smaller than those on telopodite (Fig. 67); calyx of poison gland cylindrical (Fig. 69).

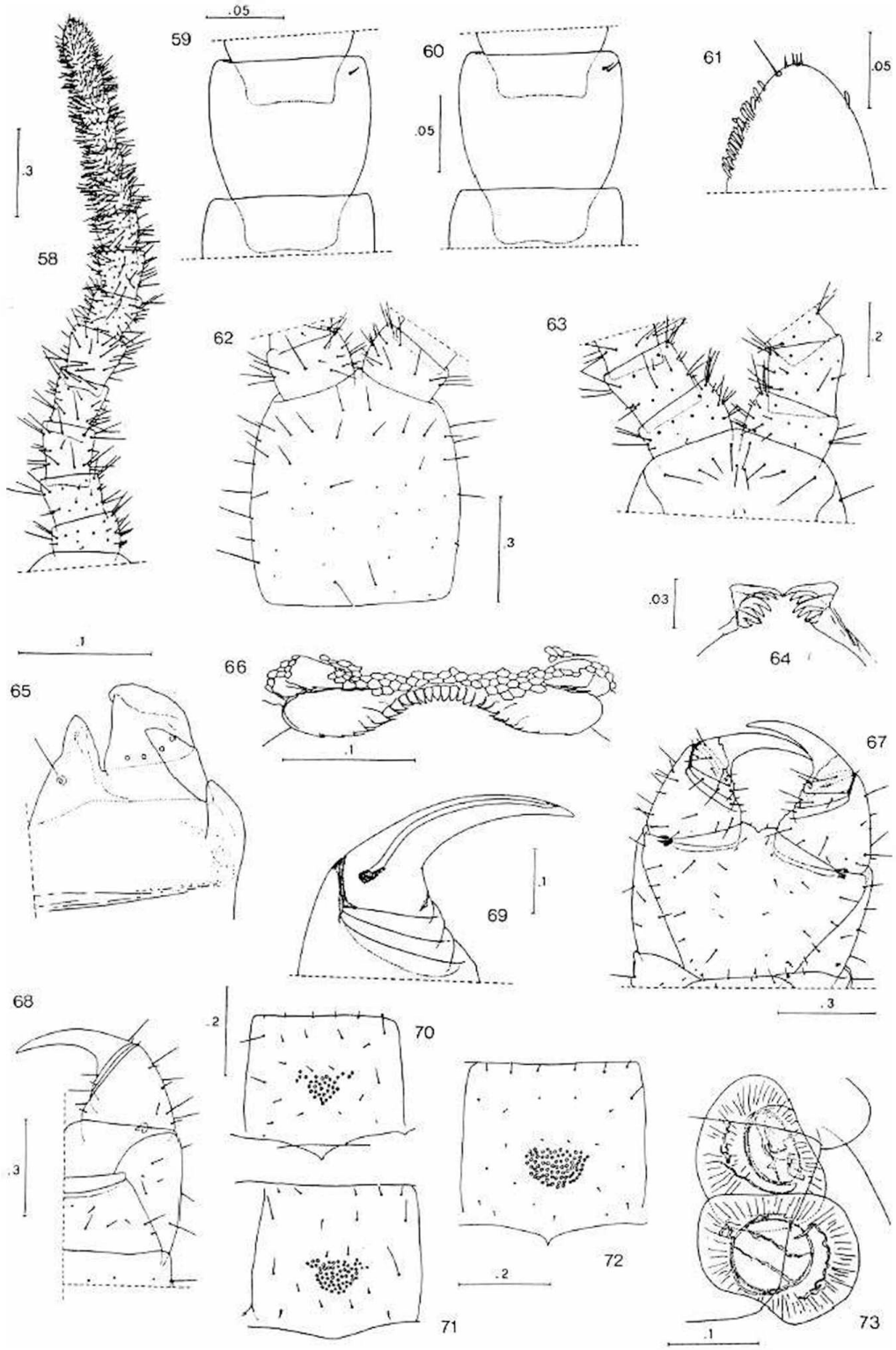
Legs (last pair excepted) with few long setae (Fig. 86).

Terga shallowly but distinctly bisulcate, sparsely setose.

Sterna: pore fields present from the second to the penultimate sternum. All pore fields undivided, their form changing along the trunk as in Figs 70-72 and 77-80; number of pores 35 on sternum II, 59 on IV, 76 on XII, 64 on XXV, 25 on XXXI, 7 on XLVII and 6 on LVIII.

Last leg-bearing segment without pleurites at sides of pretergum; presternum not divided along sagittal plane; form and chaetotaxy of sternum and tergum as in Figs 81 and 82. Coxopleura slightly protruding at their distal ventral ends; setae numerous, dispersed over whole surface, more numerous and smaller on distal ventral half; two simple («homogeneous») coxal organs in each coxopleuron, opening on membrane between coxopleuron and sternum and covered by latter (Figs 73, 81). Last legs comprising 7 articles, ventrally with numerous setae covering whole surface of articles (Fig. 81), dorsally with less numerous but larger setae (Fig. 82); pretarsi tuberculate and very small, with 1 small apical spine (Fig. 85).

Terminal segments: intermediate tergum with posterior margin convex; intermediate sternum with posterior margin slightly concave; first genital sternum with



Figs 58-73. — *Schendylurus colombianus* male, holotype: Fig. 58, right antenna, ventral; Fig. 59, right a.a. XIII, ventral; Fig. 60, the same, dorsal; Fig. 61, apical region of last right a.a., ventral; Fig. 62, cephalic shield, dorsal; Fig. 63, clypeus and basis of antennae; Fig. 64, dentate lamellae of mandibles; Fig. 65, right first maxilla, dorsal; Fig. 66, labrum; Fig. 67, forcipular segment with poison claws, ventral; Fig. 68, the same, dorsal, right half; Fig. 69, detail of poison gland in right poison claw, ventral; Fig. 70-72, sterna II, IV and XII; Fig. 73, left coxal organs, ventral. (Measurements in mm).

posterior margin medially convex, slightly concave laterally (Fig. 83). Gonopods biarticulate, basal article of each with 15 setae, distal article with 12 (Fig. 84). Penis dorsally with 1 + 1 apical setae.

Female unknown.

Remarks. S. colombianus is characterized by having an uninterrupted series of pore fields over the whole length of the trunk. It can be differentiated from the other species having this same trait by the characters given in the key below.

In the foregoing redescription we rectify two faults of CHAMBERLIN's original description: he cited 3 + 3 setae in the middle of clypeus (instead of 4 + 4) and 24 labral teeth (instead of 26).

To date, the holotype is the only known specimen of this species.

Schendylurus virgingordae Crabill 1960 (Figs 87-112)

Schendylurus virgingordae CRABILL 1960: 181.
Schendylurus virgingordae, PEREIRA 1984: 64.

Type material. Holotype ♀ with 53 pairs of legs; body length 20 mm. British West Indies: Virgin Gorda, 29.II.1958, Clarke coll. (US National Museum, Washington, 2522). This specimen is preserved in two original slides made by R.E. Crabill. Owing to the less than optimal condition of the holotype, we provide the following.

Additional description after a female from Venezuela: State Falcón: Playa Mero, Par. Morrocoy; 53 pairs of legs; body length 28 mm, maximum body width 0.4 mm. The specimen has been compared with the holotype.

Colour yellowish, but for the forcipular segment which is pale orange.

Antennae 2.3 to 2.8 times longer than head, distally slightly attenuate; all articles, except first, slightly longer than wide. Setae on articles I-VII of different lengths; those of remaining articles progressively shorter and more numerous towards distal ends of appendages (Fig. 87). Last article with modified claviform setae on external and medial apical edge (Fig. 93); distal end with 5 minute tripartite setae (Fig. 93). Articles II, V, IX and XIII with similar tripartite setae: ventrally, one each on II, V and IX (Fig. 92), 1-2 on XIII; dorsally, one each on II and V, 3 on IX and 4-5 on XIII (Figs 88-91).

Cephalic plate (Fig. 94) slightly longer than wide (length to width ratio as 1.1 to 1).

Clypeus with 1 + 1 postantennal setae, 4 + 5 median setae and 1 + 1 prelabral setae (Fig. 96).

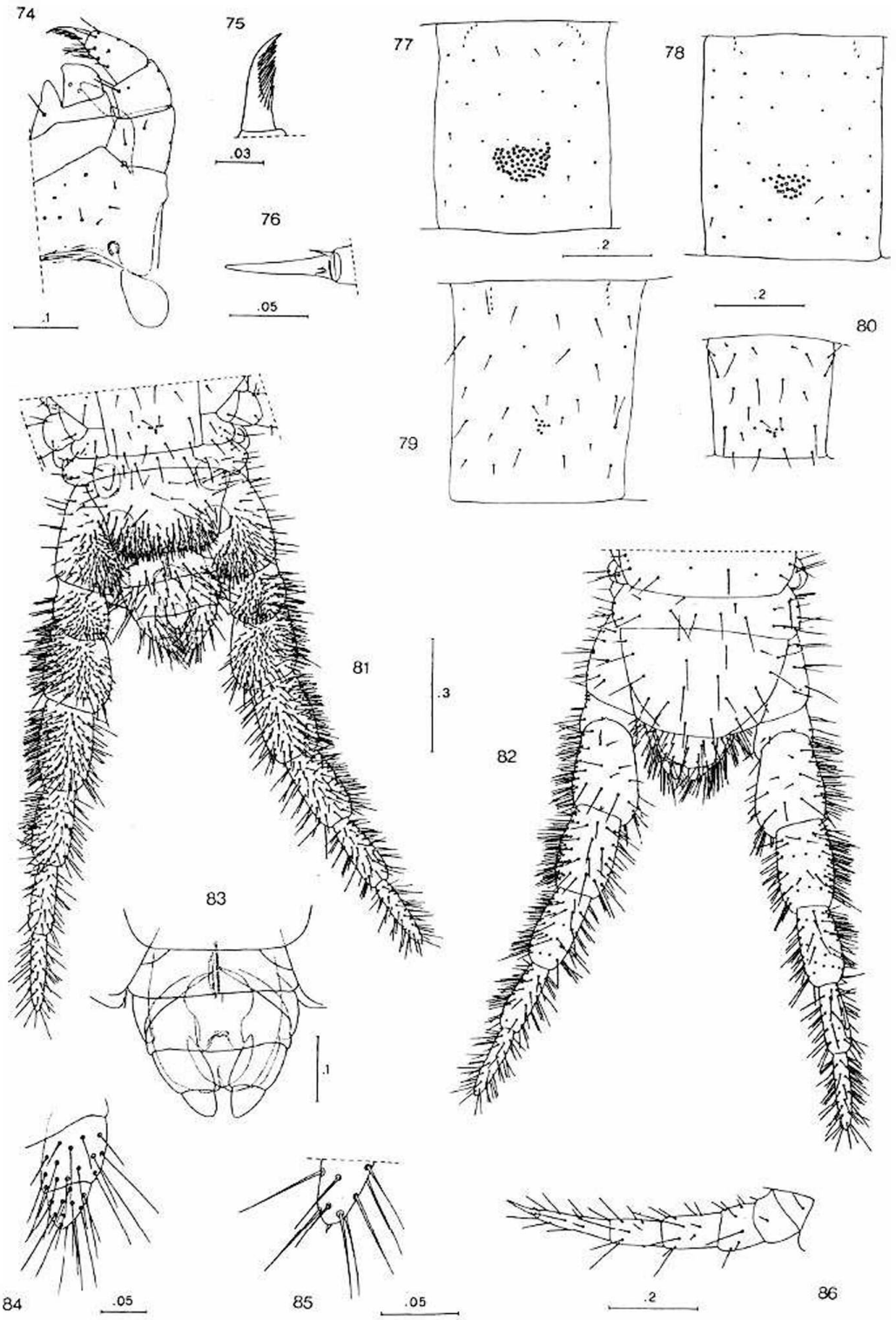
Labrum with a total of 16 teeth; those of central arc roud-tipped, lateral ones each with a very sharp medial extension (Fig. 101).

Mandible with dentate lamella subdivided into 3 distinct blocks; dentition 3-3-4; pectinate lamellae with 18 hyaline teeth.

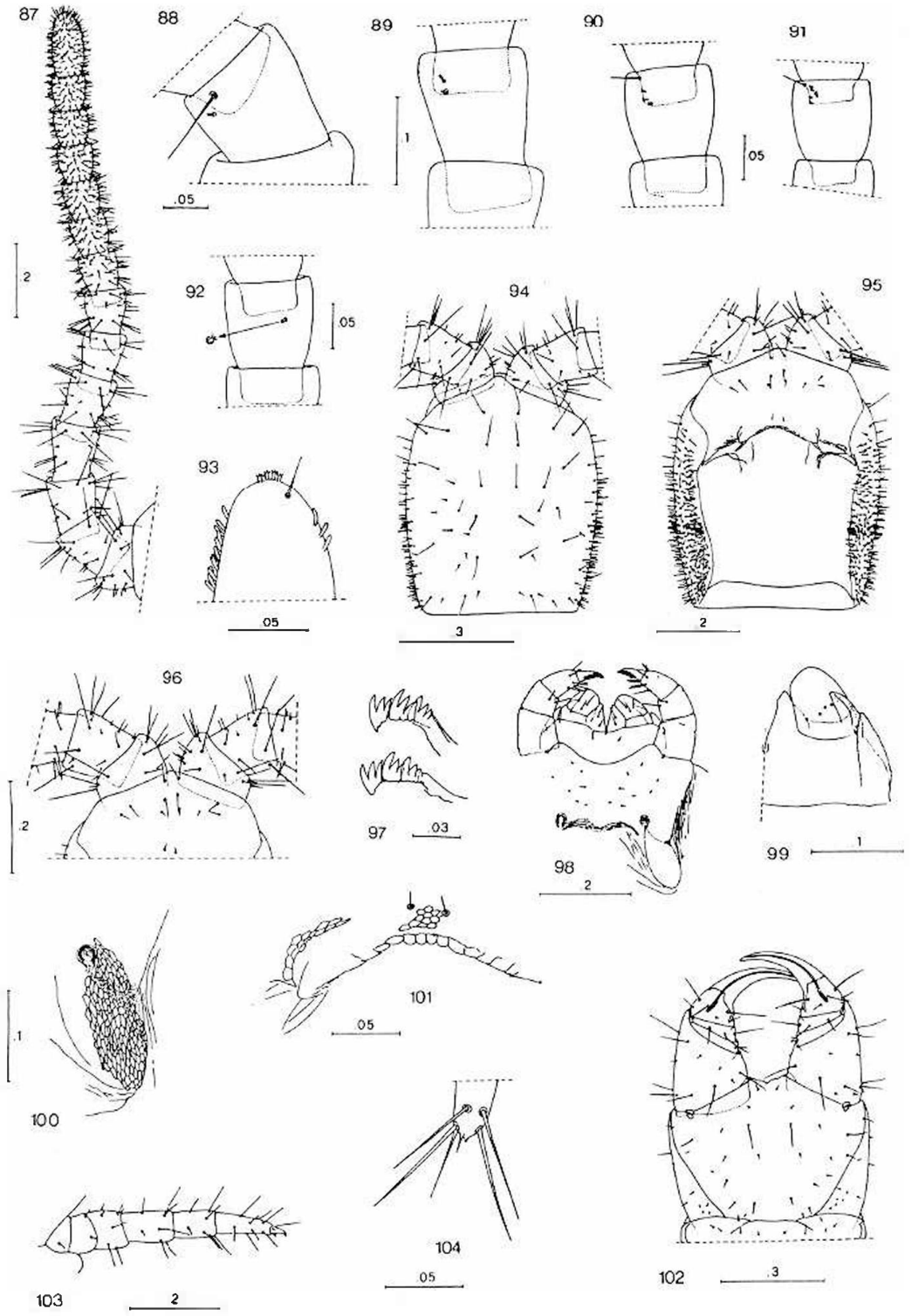
First maxillae with lappets both on coxosternum and telopodite. Coxosternum with 1 + 1 setae; medial lobes subtriangular, with 2 + 2 setae, article II of the telopodite with 3 + 3 ventral setae and 4 + 4 dorsal sensilla (Figs 98-99).

Second maxillae with 7 + 8 setae on coxosternum (Fig. 98); apical claw of the telopodite bipectinate, with 12 teeth ventrally and 16 dorsally (Fig. 105).

Forcipulae: when closed, telopodites not extending beyond anterior margin of head; all articles lacking teeth; basal plate with an irregular transverse median row of



Figs 74-86. — *Schendylurus colombianus* male, holotype: Fig. 74, left first and second maxillae, ventral; Fig. 75, pectinate claw of the right second maxilla; Fig. 76, claw of right leg III, ventral; Figs 77-80, sterna XXV, XXXI, XLVII and LVIII; Fig. 81, last leg-bearing segment and terminal segments, ventral; Fig. 82, the same, dorsal; Fig. 83, genital region, ventral; Fig. 84, left gonopod, ventral; Fig. 85, distal end of the last podomere of the last left leg, ventral; Fig. 86, right leg III, ventral. (Measurements in mm).



Figs 87-104. — *Schendylurus virgingordae* (Venezuela: Falcón: Playa Mero, Par. Morrocoy) female: Fig. 87, left antenna, ventral; Fig. 88, left a.a. II, dorsal; Fig. 89, left a.a. V, dorsal; Fig. 90, left a.a. IX, dorsal; Fig. 91, left a.a. XIII, dorsal; Fig. 92, right a.a. IX, ventral; Fig. 93, distal end of the right last a.a.; Fig. 94, cephalic shield, dorsal; Fig. 95, head, ventral; Fig. 96, clypeus and bases of antennae, ventral; Fig. 97, dentate lamellae of mandibles; Fig. 98, first and second maxillae, ventral; Fig. 99, right first maxilla, dorsal; Fig. 100, detail of posterior external region of left second maxilla, ventral; Fig. 101, labrum; Fig. 102, forcipular segment with poison claws, ventral; Fig. 103, left leg VI, ventral; Fig. 104, distal end of the last podomere of the left last leg. (Measurements in mm).

11 setae; coxosternal and telopodites setae as in Fig. 102; calyx of poison gland cylindrical (Fig. 102).

Legs (last pair excepted) with few long setae (Fig. 103).

Terga shallowly but distinctly bisulcate, sparsely setose.

Sterna: pore fields from sternum II to XXIII only; all pore fields undivided, their form changing along trunk from subtriangular to irregular; number of pores 32 on sternum II, 65 on XI and 7 on XXIII (Figs 109-111).

Last leg-bearing segment with pleurites at level of pretergum (Fig. 107); prestermum not divided along sagittal plane; form and chaetotaxy of sternum and tergum as in Figs 106-107. Coxopleura slightly protruding at distal ventral ends, with setae covering whole surface but more numerous and smaller on median edge of the distal ventral half. Two single («homogeneous») coxal organs on each coxopleuron; coxal organs open on membrane between coxopleuron and sternum, covered by latter (Figs 106, 108). Last legs of 7 articles; chaetotaxy as in Figs 106 and 107. Pretarsi very little, without spines (Fig. 104).

Terminal segments: intermediate sternum with posterior margin slightly concave, I genital sternum with posterior margin medially convex, slightly concave laterally (Fig. 106). Gonopods uniarticulate (Fig. 106).

Male: unknown.

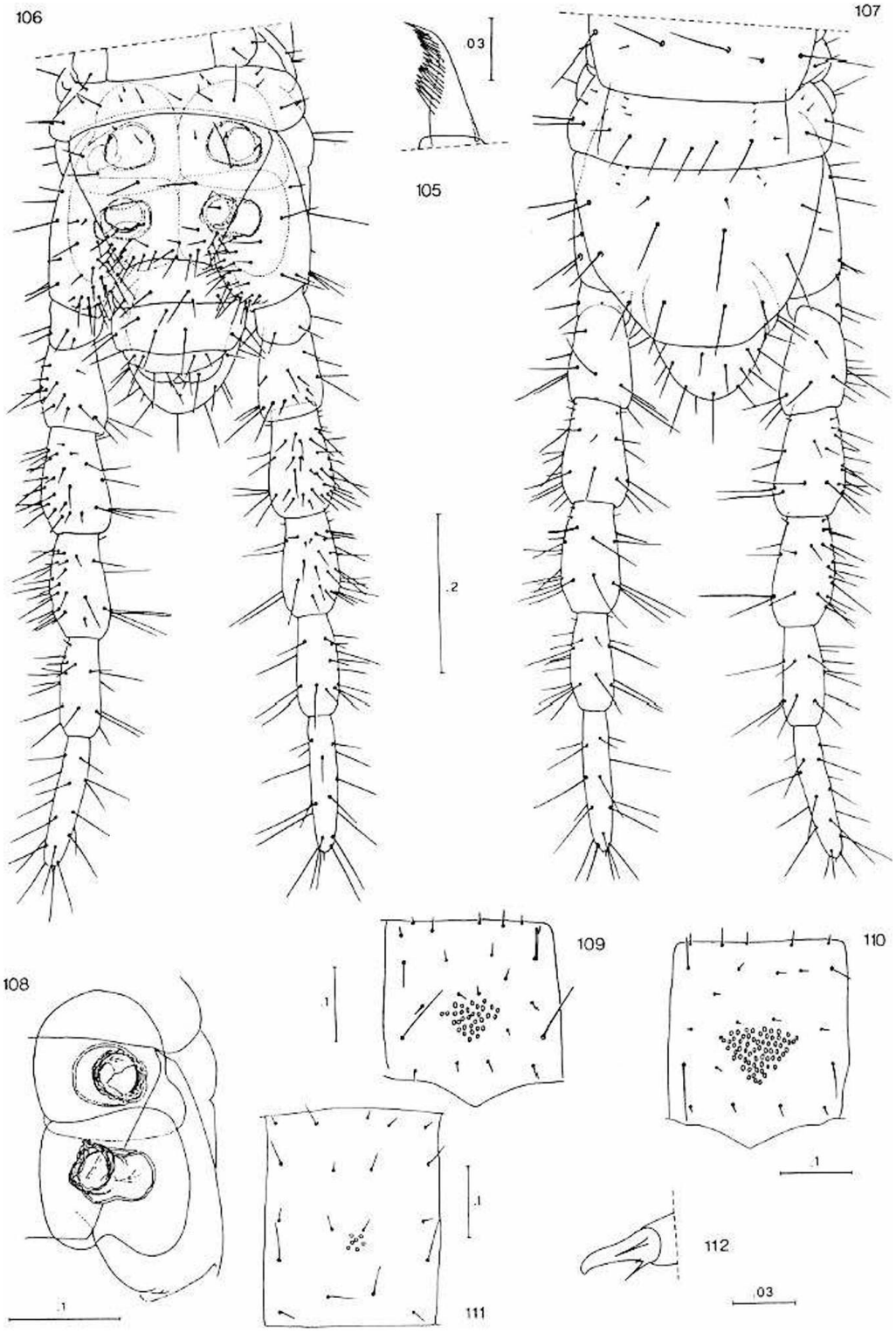
Other material examined. Venezuela: State Falcón: Playa Mero, Par. Morrocoy, 2.I.1986, M.G. Paoletti legit, litter of *Coccoloba uvifera*, sample no. 62: 1 ♀ with 53 pairs of legs; body length 28 mm.

Remarks. This is the only species of the genus *Schendylurus* characterized by having numerous small setae on the head pleurites (Fig. 95).

A NOTE ON HALOPHILOUS GEOPHILOMORPHS

The occurrence on the seashore of Venezuela of a species previously known only from the island of Virgin Gorda, in the West Indies, was perhaps unexpected, but it should not be regarded with suspicion. The scanty information we have about the two collecting sites of *Schendylurus virgingordae* suggests that the species is probably halophilous, as are a few other geophilomorphs also, including the well-known *Hydroschendyla submarina* (Grube 1872), which belongs to the same family (Schendylidae) as the species we are discussing here.

The scattered and often wide-ranging distribution of halophilous centipedes has been commented upon several times, especially by Cloudsley-Thompson (1948), Crabill (1960) and Kevan (1983). Such species are very probably dispersed by rafting across very large distances, although in a very unpredictable way. Crabill (1960) even suggested, that this way of dispersal might explain trans-Atlantic disjunction (seemingly, even within one species) between South America and Africa. More data are obviously required, and individual cases must be investigated in depth, before we can assess the actual extent of this phenomenon. In any event, passive dispersal seems adeguately to explain the disjunct distribution of *Schendylurus virgingordae* and the virtual identity of our specimen from Venezuela with Crabill's holotype from the Virgin Islands.



Figs 105-112. — *Schendylurus virgingordae* (Venezuela: Falcón: Playa Mero, Par. Morrocoy) female: Fig. 105, pectinate claw of right second maxilla; Fig. 106, last leg-bearing segment and terminal segments, ventral; Fig. 107, the same, dorsal; Fig. 108, left coxal organs, ventral; Figs 109-111, sterna II, XI and XXIII; Fig. 112, claw of right leg VI, antero-ventral. (Measurements in mm).

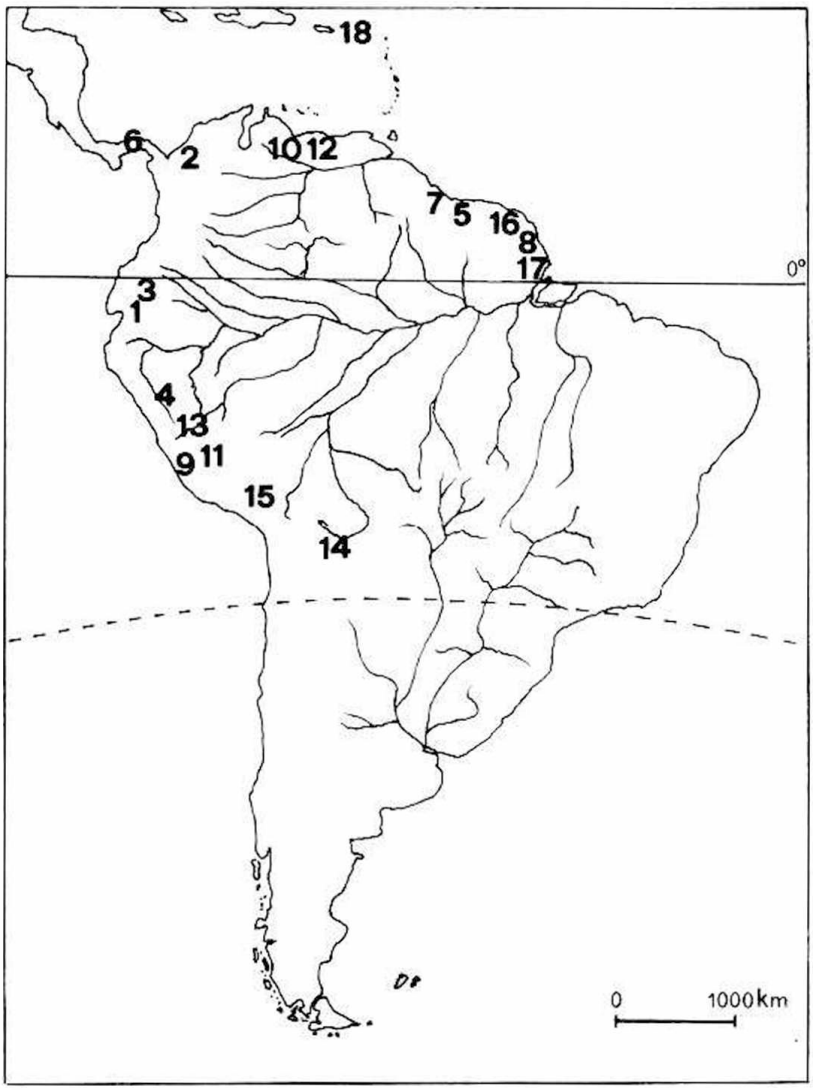


Fig. 113. — Geographical distribution of the species of *Schendylurus* known from Bolivia, Peru, Ecuador, northern South America, Central America and West Indies. 1, *andesicola*; 2, *colombianus*; 3, *dentifer*; 4, *edentatus*; 5, *gracilis*; 6, *integer*; 7, *labbanus*; 8, *lesnei*; 9, *lomanus*; 10, *minutus* n. sp.; 11, *pallidus*; 12, *paolettii* n. sp.; 13, *peruanus*; 14, *potosius*; 15, *titicacaensis*; 16, *tropicus*; 17, *verhoeffi*; 18, *virgingordae*.

LIST OF THE NEOTROPICAL SPECIES OF *SCHENDYLURUS* SILVESTRI 1907

S. anamariae Pereira 1981 (Argentina)
S. andesicola Chamberlin 1957 (Ecuador)
S. bakeri Chamberlin 1914 (Brazil)
S. bolivianus Silvestri 1897 (Bolivia)
S. borellii Silvestri 1895 (Paraguay)
S. brasilianus Silvestri 1897 (Brazil)

S. colombianus Chamberlin 1921 (Colombia)
S. demangei Pereira 1981 (Argentina)
S. demelloi Verhoeff 1938 (Brazil)
S. dentifer Chamberlin 1957 (Ecuador)
S. edentatus Kraus 1957 (Peru)
S. elegantulus (Meinert 1886) (Argentina)
S. fieldi (Chamberlin 1944) (Argentina)
S. gounellei (Brölemann 1903) (Brazil)
S. gracilis Attems 1934 (Suriname)
S. iguapensis Verhoeff 1938 (Brazil)
S. interfluvius Pereira 1984 (Argentina)
S. integer Chamberlin 1926 (Panama)
S. labbanus Chamberlin 1921 (Guyana)
S. lesnei Brölemann & Ribaut 1911 (Brazil)
S. lomanus Chamberlin 1957 (Peru)
S. longitarsis (Silvestri 1895) (Paraguay and Argentina)
S. luederwaldi Brölemann & Ribaut 1911 (Brazil)
S. madariagensis Pereira 1981 (Argentina)
S. mesopotamicus Pereira 1981 (Argentina)
S. minutus n. sp. (Venezuela)
S. olivaceus Crabill 1972 (Brazil)
S. pallidus Kraus 1955 (Peru)
S. pampeanus (Pereira & Coscarón 1976) (Argentina)
S. paolettii n. sp. (Venezuela)
S. paraguayensis (Silvestri 1895) (Paraguay)
S. paulista Brölemann 1904 (Brazil)
S. perditus Chamberlin 1914 (Brazil)
S. peruanus Turk 1955 (Peru)
S. potosius Chamberlin 1956 (Bolivia)
S. sublaevis (Meinert 1870) (Brazil)
S. titicacaensis (Kraus 1954) (Peru)
S. tropicus Brölemann & Ribaut 1911 (French Guiana)
S. varipictus (Chamberlin 1950) (Puerto Rico and Guadeloupe)
S. verhoeffi Brölemann & Ribaut 1911 (Brazil)
S. virgingordae Crabill 1960 (British West Indies: Virgin Gorda)

KEY TO THE SPECIES OF *SCHENDYLURUS* OF BOLIVIA, PERU, ECUADOR, NORTHERN SOUTH AMERICA, CENTRAL AMERICA AND THE WEST INDIES

1	Pore fields present only on some anterior sterna	2
—	Pore fields present on both anterior and posterior sterna	12
2	First sternum with pores . . . . . *S. gracilis*	
—	First sternum without pores	3
3	Pleurites of head capsule covered by numerous small setae (Fig. 95) . . . . . *S. virgingordae*	
—	Pleurites of head capsule glabrous	4
4	Pore fields present on sterna II to XXXI; body length 40 mm; female with 57 pairs of	

legs . . . . . *S. peruanus*

— Pore fields present on sterna II (rarely III) to XIV-XXVII; body length 17-35 mm 5

5 Forcipular tarsungulum with a well developed basal tooth 6

— Forcipular tarsungulum without basal tooth, or with a very small one . . . 7

6 Forcipulae: trochanteroprefemur, femur and tibia without teeth, tarsungulum with dark tooth; pore fields present on sterna II (rarely III) to XV-XIX; male coxopleura greatly developed at ventral posterior end, so as to cover half of trochanter . . . . . *S. pallidus*

— Forcipulae: trochanteroprefemur with a well developed tooth, femur and tibia each with a small tooth, tarsungulum with a pale tooth; pore fields on sterna II to XIV-XVI; male coxopleura normally developed at ventral posterior end and not covering the trochanter . . . . . *S. dentifer*

7 Body length 32-35 mm; clypeus with 8 + 8 postantennal setae; labrum laterally with 13-19 + 13-19 teeth, much longer than those of the central arc; [female with 53 or 55 pairs of legs; male with 51 or 53 pairs of legs; pore fields extending from sternum II (or III) to XXI-XXIV] . . . . . *S. titicacaensis*

— Maximum body length 28 mm; clypeus with 1 + 1 postantennal setae; labrum laterally with 4-6 + 4-6 teeth, similar in size to those of the central arc 8

8 Pore fields subovoidal . . . . . *S. lomanus*

— Pore fields subcircular 9

9 35-41 pairs of legs; clypeus with ca 3 + 3 setae in the middle; maximum body length 16 mm . . . . . *S. paolettii* n. sp.

— 45-53 pairs of legs; clypeus with ca 7 + 7 setae in the middle; body length 20-28 mm 10

10 Coxosternum of the first maxillae with 0 + 0 or 1 + 1 setae; all pore fields undivided; dentate lamella of the mandible subdivided into 3 distinct blocks; maximum body length 28 mm; [female with 47, 49 or 53 pairs of legs (probably also with 51); male with 45, 47 or 49 pairs of legs] . . . . . *S. andesicola*

— Coxosternum of the first maxillae with at least 1 + 1 setae; some pore fields subdivided in two areas; dentate lamella of the mandible subdivided in 2 distinct blocks; maximum body length 23 mm 11

11 Pore fields on sterna II to XVII-XXI; labrum with 12-15 teeth on central arc; second maxillae with ca 9 + 10 setae on coxosternum, apical claw of telopodite of normal size and provided with 8-14 teeth on each side; body length 22-23 mm; female with 49, 51 or 53 pairs of legs; male with 49 pairs of legs . . . . . *S. edentatus*

— Pore fields on sterna II to XXVII; labrum with 10 teeth on central arc; second maxillae with 4 + 4 setae on coxosternum, apical claw of telopodite very short, with only 8-9 teeth on each side; body length 20 mm; male with 47 pairs of legs . . . . . *S. potosius*

12 Pore field series interrupted in middle part of trunk. [In holotype (female) pore fields are present on sterna II to XIX and XLVIII-LII, and completely lacking on sterna XX-XLVII] . . . . . *S. minutus* n. sp.

— Pore field series uninterrupted 13

13 Dentate lamella of mandible not subdivided into blocks . . . . *S. integer*

— Dentate lamella of the mandible subdivided in 3 distinct blocks 14

14 Tarsus II of the last pair of legs much shorter than for tarsus I . . . *S. varipictus*

— Tarsus II of the last pair of legs similar in length to tarsus I 15

15 Sternum I with pores 16

— Sternum I without pores 17

16 All pore fields undivided . . . . . *S. labbanus*

— Pore fields of the middle part of the body subdivided into two areas . . *S. tropicus*

17 Pore fields present on all sterna from II to penultimate one . . . *S. colombianus*

— Pore fields present on sterna II to antepenultimate one only 18

18 All pore fields undivided; body length 12 mm . . . . . *S. lesnei*

— Pore fields on middle part of body subdivided in two areas; body length 38 mm . . . . . *S. verhoeffi*

ACKNOWLEDGEMENTS

We are indebted to M.G. Paoletti (Università di Padova), who allowed us to study his interesting centipede collection from Venezuela, as well as for the facilities provided for completing this paper; to J.A. Coddington (National Museum of Natural History, Washington) and H.W. Levi (Museum of Comparative Zoology, Harvard, Mass.) for the loan of type specimens; to the late D.K. McE. Kevan (McGill University, Ste-Anne-de-Bellevue, Canada) and, again, to J.A. Coddington for a careful reading of our manuscript; to the Consiglio Nazionale delle Ricerche and the Ministero dell'Università e della Ricerca Scientifica e Tecnologica for financial support to one of us (A. Minelli).

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