A New Dwarf Species of the Genus *Strigamia* Gray, 1843 from the Southern Appalachian Mountains of Western Virginia (Chilopoda: Geophilomorpha: Linotaeniidae)

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Abstract

Strigamia hoffmani sp. n. (Chilopoda: Geophilomorpha: Linotaeniidae) is described and illustrated based on specimens from Burkes Garden (Tazewell-Bland counties) and the northern slope of Bent Mountain (Roanoke County), in the Southern Appalachians of western Virginia. The new species is characterized principally by very small body size and a very low number of pairs of legs. It appears to be closely related to *Strigamia chionophila* (Wood, 1862), with which it is compared. The present contribution is a small addition to the knowledge of the eastern North American species of *Strigamia.* There is an obvious need to undertake a complete revision of all Nearctic nominal taxa presently included in this genus, as well as those cited from the Neotropics, towards developing a more complete and appropriate understanding of this very interesting and difficult group of geophilomorph centipedes.

Key words: centipede, Chilopoda, Geophilomorpha, Linotaeniidae, new species, Southern Appalachians, *Strigamia,* Virginia.

Introduction

Strigamia Gray, 1843 is the largest and most widespread genus of the geophilomorph family Linotaeniidae. According to Minelli (2006), this taxon comprises 39 valid species that are mostly distributed in the Holarctic Region. Of these, 22 occur in the Palearctic Region (Europe, Russia, Turkey**,** Japan, and South Korea), two in the Neotropics (Nicaragua and Costa Rica), and 14 in the Nearctic Region (Canada and United States); the collecting locality of the remaining species, *S. longicornis* (Meinert, 1885), is unknown.

In the present contribution, a new dwarf species of the genus is described from the Southern Appalachians, based on specimens collected by Dr. Richard L. Hoffman in Burkes Garden (Tazewell-Bland counties) and the northern slope of Bent Mountain (Roanoke County), in western Virginia. *Strigamia hoffmani* sp. n. is characterized principally by very small body size and a very low number of pairs of legs, and seems to be closely related to *S. chionophila* Wood, 1862, with which it is compared.

According to Hoffman (1995), only four species of *Strigamia* were known previously from Virginia: *S. bidens* (Wood, 1862), *S. bothriopoda* (Wood, 1862), *S. branneri* (Bollman, 1888), and *S. chionophila* (Wood, 1862). *Strigamia hoffmani* sp. n., is the fifth species of the genus for the state's fauna.

Materials and Methods

The type material herein designated is deposited in the Virginia Museum of Natural History, Martinsville, Virginia, (VMNH) and the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM); non-type specimens are deposited in the VMNH.

All specimens were examined through light microscopy. Temporary mounts have been prepared by direct transfer of the specimens from the preservation liquid (70 percent ethanol) onto microscopic slides, using undiluted ethylene glycol monophenyl ether as a mounting medium. (No additional steps were employed before mounting). Permanent mounts have been made, simply by direct mounting of the specimens on temporary slides, (previously cleared and dehydrated *in situ* by the action of the ethylene glycol) into Canada balsam diluted with vegetable creosote (refined from beech tar).

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Details on these and other procedures for the preparation of geophilomorphs for microscopical examination are described in Pereira (2000), Foddai et al. (2002), Bonato and Minelli (2004), and Uliana et al. (2007).

The figures were delineated using a light microscope equipped with a camera lucida drawing tube attachment. Measurements are given in mm.

The following abbreviations are used in the text and figure legends: a.a., antennal article; b.l., body length; p.l., pairs of legs.

Results

Family Linotaeniidae

Genus *Strigamia* Gray, 1843

Diagnosis: Cephalic shield without a frontal sulcus but with an indistinct, pale transverse line or band in its place. Labrum: mid-piece well developed and provided with teeth distributed near its anterior border, which is generally convex in the form of a broad arc; side-pieces consisting of narrow bands, sometimes framing the mid-piece anteriorly but not quite meeting medially. Mandible rather narrow, the trunk being glabrous though sometimes bearing a band of spinous papillae. First maxillary telopodite indistinctly articulated. Apical claw of second maxillary telopodite distinct, though sometimes rather short. Forcipular segment: coxosternum without chitinlines; tarsungulum basally with a well-developed and deeply pigmented tooth. Trunk-terga without longitudinal sulci. Sterna: most bearing one or two pairs of pore fields. Procoxae and metacoxae with a pore field. Sternital surface sometimes showing features of sculpturing. Last legs of seven articles, terminal one bearing an apical claw. Coxopleura of last leg-bearing segment with coxal organs opening separately and distributed on ventral surface.

Remarks on the generic diagnosis: The mid-piece of the labrum has been previously described as having its anterior border convex and provided with teeth which are always illustrated as being directed anteriad (Attems 1929, Brölemann 1930, Crabill 1954, Eason 1964). Nevertheless, in cleared, undissected specimens of the new species described below and mounted on temporary microscope slides, the aspect of the labrum under a light microscope (without squashing effect) looks as in Figures 40-41. It can be seen in those figures that these teeth are not distributed on the anterior border of the mid-piece (i.e., these teeth do not form that border), and, that they are directed ventrally or slightly posteriad (but not anteriad). On the contrary, when the head capsule is separated from the trunk, and the mouth parts are removed from it and the latter mounted on a microscope slide, the internal part of the mid-piece is displaced posteriad (i.e., it becomes more exposed ventrally). Simultaneously, the teeth were directed anteriad, suggesting that they form the rostral border of the mid-piece itself, but in reality, this appearance represents an artifact due to the squashing effect caused by the cover glass on the corresponding microscope slides (Figs. 6, 33, 36, 37, 39).

Type of the genus: *Strigamia fulva* Sager, 1856, by monotypy.

Remarks: See Minelli (2006) for a complete and detailed list of all species currently included in the genus *Strigamia*.

Strigamia hoffmani sp. n.

Figs. 1-41

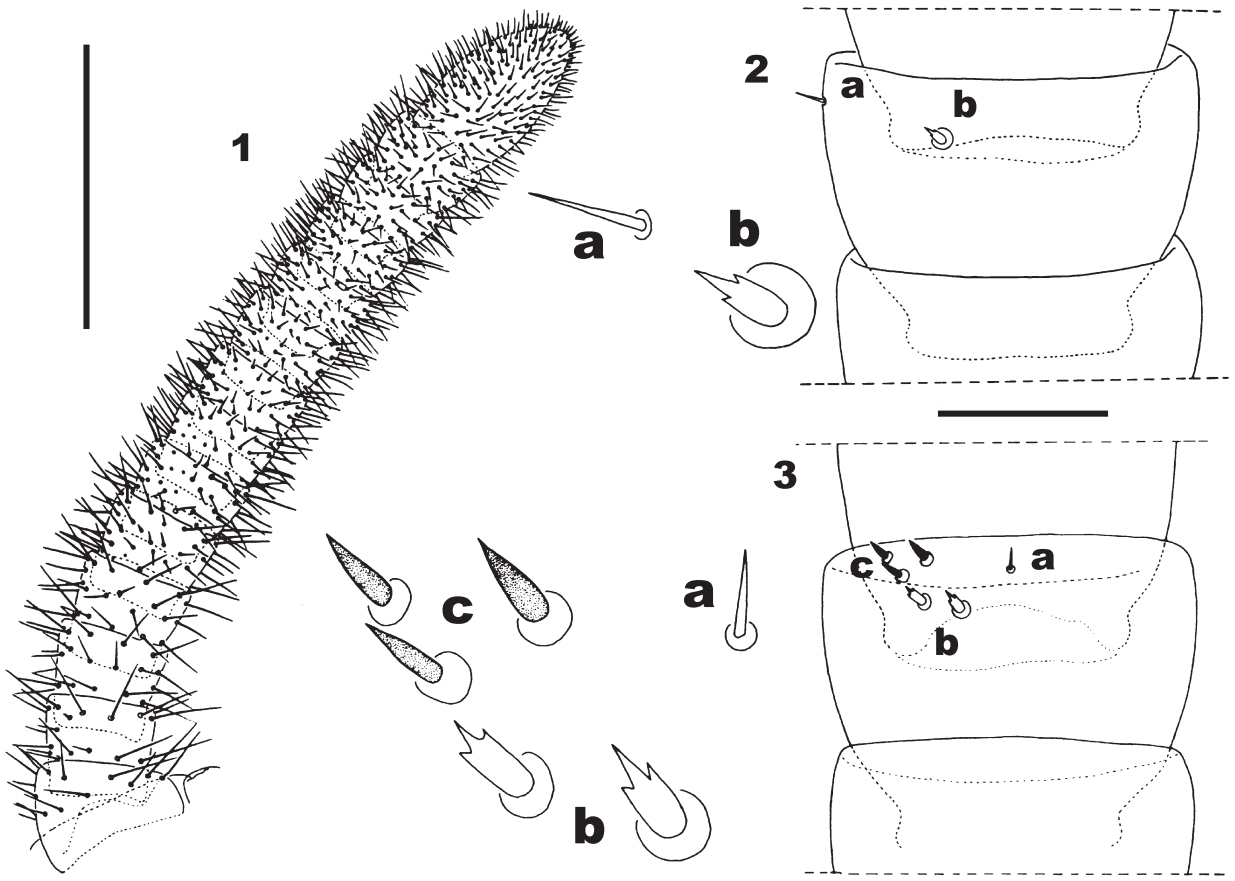
Diagnosis: This species is characterized principally by very small body size and a very low number of pairs of legs, and it appears to be closely related to *Strigamia chionophila* (Wood, 1862). *Strigamia hoffmani* sp. n., can be differentiated from the latter by means of the following characters (the corresponding ones in *S. chionophila* are given in parentheses): males with 33 or 35 pairs of legs and females with 35 or 37 pairs of legs (males with 35, 37, 39, 41 or 43 pairs of legs and females with 37, 39, 41 or 43 pairs of legs); body length to 16 mm (25 mm); aspect of basal internal tooth of the forcipular tarsungulum as shown in Figures 13-16**,** 40 (pointed, acuminate); sterna apparently without median sulci and without paramedian depressions (sternital sulci pronounced as are the paramedian depressions, giving to the sterna the appearance of being trisulcate); up to ca. 10 coxal organs in each coxopleuron of the last leg-bearing segment (up to 15).

Remarks: The characters of *S. chionophila* have been taken from the published literature.

Type material examined: All specimens from USA: Virginia: Tazewell-Bland counties, Burkes Garden, crest of Clinch (Garden) Mountain at Route 623 AT (Appalachian Trail) crossing, ca. 1250 m a.s.l., 7 February 2001, R. L. Hoffman leg.: holotype ♂, 33 p.l., b.l. 12 mm; paratype A (♀), 35 p.l., b.l. 14 mm; paratype B (♀), 35 p.l., b.l. 15 mm; paratype C (♂), 33 p.l., b.l. 12 mm; paratype D (♂), 33 p.l., b.l. 12 mm; paratype E (♂), 33 p.l., b.l. 12 mm; paratype F (♂), 33 p.l., b.l. 11.5 mm; paratype G (♂), 33 p.l., b.l. 10.5 mm.

Remarks: Holotype partly in alcohol (trunk and head capsule with antennae) and partly on two permanent slides: (1) mandible, (2) first and second maxillae; all paratypes in alcohol. The adult condition of all type specimens is indicated by mature spermatozoa in the tubula seminifera of the males and spermatozoa in the spermathecae of the females.

Depository of types: VMNH (Holotype and paratypes



Figs. 1-3. *Strigamia hoffmani* sp. n., ♂ holotype. 1. Left antenna, ventral; 2. Left a.a. XIII, ventral (a, b: a, b type sensilla); 3. Left a.a. XIII, dorsal (a, b, c: a, b, c type sensilla). Scale bars: 0.3 mm (1); 0.05 mm (2-3).

A, C, D, E, F); USNM (Paratypes B, G).

Other material examined: Same locality, date, and collector as the type series: 5 ♂♂ subadult, 33 p.l., b.l. 8, 9, 9, 10, 11 mm; 2 ♂♂ juv., 33 p.l., b.l. 7.5, 8 mm; 2 ♀♀ subadult, 35 p.l., b.l. 9.5, 10 mm (VMNH). USA: Virginia: Roanoke County, north slope of Bent Mountain, 1000 m a.s.l. over talus, 15 November 1985, R. L. Hoffman leg.: 1 ♂ adult, 35 p.l., b.l. 11.5 mm (specimen "A", see below); 1 ♂ adult, 35 p.l., b.l. 11.5 mm (specimen "B", see below); 3 ♂♂ adult, 35 p.l., b.l. 10, 10, 10.5 mm; 1 ♀ adult, 37 p.l., b.l., 16 mm (specimen "C", see below); 1 ♀ adult, 37 p.l., b.l. 11 mm (specimen "D", see below); 4 ♀♀ adult, 37 p.l., b.l. 9.5, 9.5, 10.5, 14 mm; 2 ♂♂ subadult, 35 p.l., b.l. 8, 8.5 mm; 1 ♀ subadult, 37 p.l., b.l. 9 mm; 5 ♂♂ juv., 35 p.l., b.l. 5.5, 6.5, 6.5, 7, 8 mm; 4 ♀♀ juv., 37 p.l., b.l. 6, 7, 7.5, 8 mm (VMNH).

Remarks: Adult condition confirmed by the presence of mature spermatozoa in the tubula seminifera of males and spermatozoa in the spermathecae of females.

Description: Male holotype. Thirty-three pairs of legs, body length 12 mm; first and last five leg-bearing segments narrower than the remaining segments; width of segments changing along the body as follows: segment I, 0.46 mm; II, 0.45 mm; IV, 0.49 mm; VI, 0.54 mm; VIII, 0.60 mm; X, 0.66 mm; XIII, 0.73 mm; XVII, 0.73 mm; XIX, 0.79 mm; XXIII, 0.79 mm; XXVII, 0.79 mm; XXVIII, 0.73 mm; XXIX, 0.66 mm; XXX, 0.60 mm; XXXI, 0.54 mm; XXXII, 0.48 mm; XXXIII, 0.48 mm. Length of cephalic shield 0.43 mm, width of forcipular coxosternum 0.52 mm. Ground color (of preserved specimen in alcohol) pale ochreous.

Antennae: relatively short, ca. 2.5X as long as the cephalic plate; first article remarkably wider than all remaining articles (Fig. 1). Setae on a.a. I-IV of various lengths, few in number; those of remaining articles progressively shorter and more numerous towards the tip of the appendage (Fig. 1). Terminal a.a. with ca. 12 claviform sensilla on the external border and 9 on the internal border. Distal end of this a.a. with ca. 8 very small sensilla with two tiny, apical branches. Ventral and dorsal surface of a.a. II, V, IX, and XIII (Figs. 2-3) with very small, specialized sensilla. Ventral sensillae of two types (a and b) and restricted to an internal latero-apical area. Type a sensilla very thin and not split apically, type

b sensilla thicker and very similar to those on the distal end of the terminal a.a. (Figs. 2a, 2b). Dorsal sensillae of three types (a, b, and c) and restricted to an external latero-apical area. Types a and b, respectively, similar to a and b of ventral side; type c sensilla similar to type b but darker (brownish ochre) in color (Figs. 3a, 3b, 3c). Distribution of type a, b, and c sensillae as in Table 1.

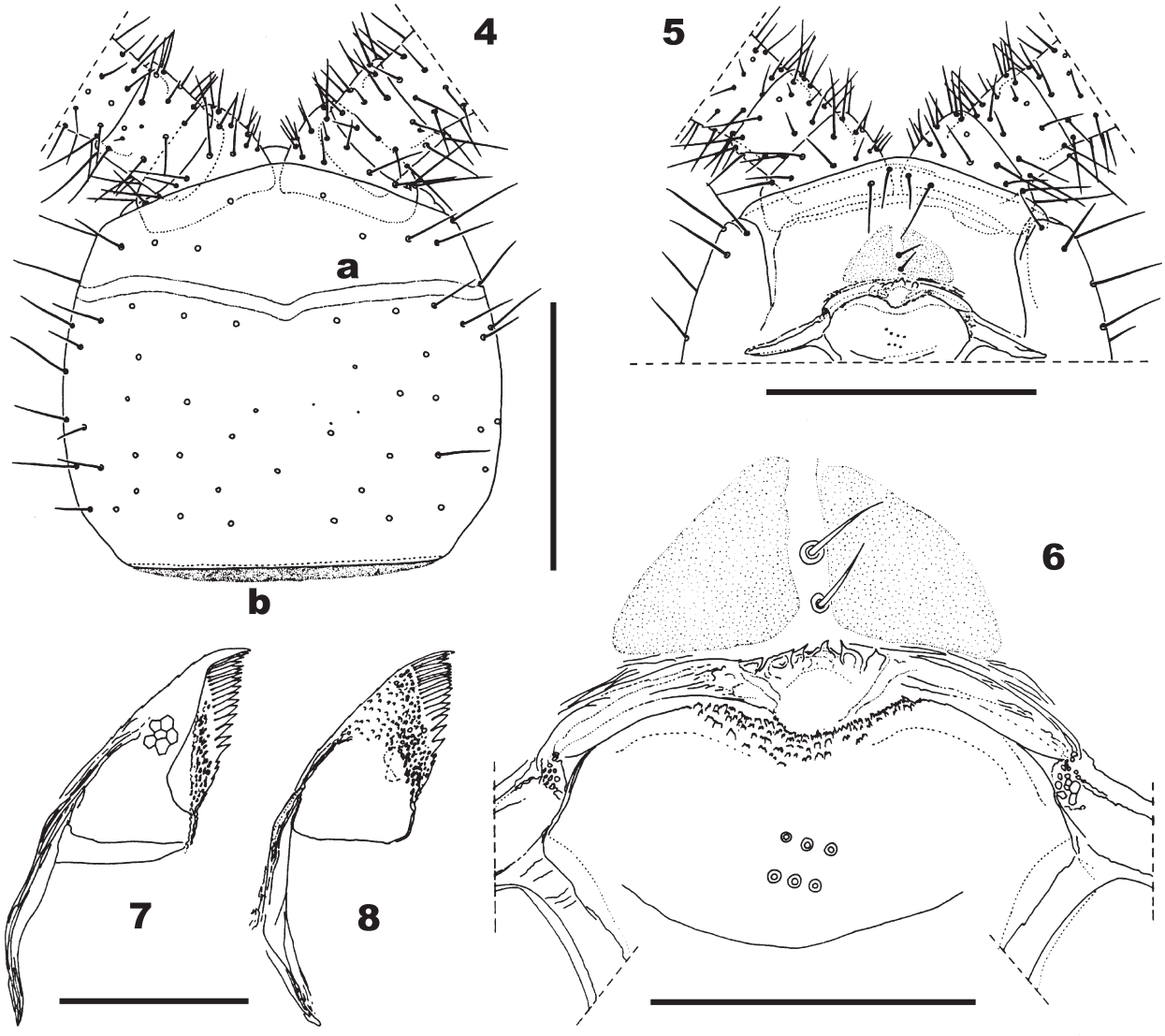
Cephalic plate: very slightly wider than long (ratio ca. 1.08:1) with an indistinct narrow and pale transverse frontal band (Fig. 4a). Posterior border accompanied by a prebasal plate (Fig. 4b). Shape and chaetotaxy as in Fig. 4.

Clypeus: with four post-antennal setae and two praelabral setae (Fig. 5). Middle part of posterior half with 1+1 subtriangular areas more pigmented than the remaining surface (Figs. 5-6).

Labrum: mid-piece provided with six teeth. Aspect and relative size of mid-piece and side-pieces (when squashed on temporary microscope slide), as in Fig. 6.

Mandible: pectinate lamella with ca. 19 hyaline teeth (Figs. 7-8).

First maxillae: without lappets on coxosternum; telopodites with relatively small lappets (Figs. 9-10). Coxosternum with three setae on anterior middle part, its anterior border incomplete in the middle (Figs. 9, 11); median projections of coxosternum well-developed, round-tipped and provided ventrally with 4+4 small setae on basal half and 4+4 minute setae on the apex, dorsal surface with numerous small sensilla on distal half (Figs. 9-10). Telopodites indistinctly articulated, ventral side



Figs. 4-8. *Strigamia hoffmani* sp. n., ♂ holotype. 4. Cephalic shield and base of antennae (a: transverse frontal band, b: praebasal plate); 5. Clypeus and base of antennae; 6. Labrum (very squashed on temporary slide); 7. Left mandible, dorsal; 8. Right mandible, ventral. Scale bars: 0.3 mm (4-5); 0.1 mm (6-8).

with 3+3 large setae and 2+2 minute setae on distal half, dorsal side with numerous sensilla on the distal internal area (Figs. 9-10).

Second maxillae: anterior border of coxosternum broadly concave with no trace of median notch. Coxosternum with 9+8 very small setae distributed as in Fig. 11. Apical claw of telopodites with relative size as in Figs. 11-12. Chaetotaxy of coxosternum and telopodites as in Fig. 11.

Forcipular segment: when closed, the telopodites do not reach the level of the anterior margin of the head (similar to the female, Fig. 32). Forcipular tergum very slightly broader than the head (ratio 1.06: 1) and about as broad as the tergum of the first leg-bearing segment, with chaetotaxy as in Fig. 14. Coxosternum unicolorous, without chitinous lines (Fig. 13); middle part of anterior border straight to very slightly concave, without denticles. Telopodites: trochanteropraefemur with ratio greatest length/greatest width equal to 1.2:1 (Figs**.** 13-15). Tarsungulum basally with a well-developed and deeply pigmented tooth with shape as in Figs. 13-15; ungulum not dorsoventrally flattened; shape and relative size of poison gland as in Fig. 16; calyx of poison gland very small with shape as in Figs. 16, 17. Chaetotaxy of coxosternum and telopodites as in Figs. 13-15.

Walking legs: with similar chaetotaxy along entire body length, distribution, number, and relative size of setae as in Figs. 18-19. First pair shorter than second (ratio 0.8:1); penultimate pair longer than last legs (ratio 1:0.77). Claws ventrobasally with an anterior and a posterior parunguis (Fig. 20).

Sterna: apparently without median sulci and paramedian depressions. Pore fields present from first to penultimate sterna. Fields undivided on sternum I, partially divided on sterna II - III, and divided in two subsymmetrical areas on sterna IV-XXXII. Form and relative size of fields changing along the trunk as in Figs. 13, 21-26. Number of pores on selected sterna: sternum I (13); II (29); IV (15+14); IX (21+21); XIX (22+22); XXV (21+19); XXXII (14+7).

Procoxae: pores present from second to penultimate leg-bearing segments. Number and distribution of pores on each procoxa of segments II, IV, IX, XIX, XXV, and XXXII as in Figs. 21-26, respectively.

Metacoxae: pores present from first to penultimate leg-bearing segments. Number and distribution of pores on each metacoxa of segments I**,** II, IV, IX, XIX, XXV, and XXXII as in Figs. 13**,** 21-26, respectively.

Last leg-bearing segment: with pleurites at sides of praetergum. Praesternum divided along sagittal plane; shape and chaetotaxy of tergum and sternum as in Figs. 27-28. Coxopleura slightly protruding at distal ventral ends, setae numerous on distal ventral half, remaining surface with few setae (Figs. 27-28). Each coxopleuron with six, single coxal organs, four opening on membrane between coxopleuron and sternum (and partially or completely covered by the latter), remaining two opening ventrally on the coxopleural surface (Fig. 28). Last legs with seven podomeres, those of telopodites remarkably inflated; shape and chaetotaxy as in Figs. 27-28. Praetarsus unguiform, about 0.5X length those of preceding legs, with a single internal parunguis basally.

Terminal segments: intermediate tergum with posterior margin convex, intermediate sternum and first genital sternum with posterior margin concave (Figs. 27-28). Gonopods biarticulate, basal article with ca. 9 setae, apical article with ca. 11 setae (Figs. 28-29), penis dorsally with 2+2 setae (Fig. 30). Anal organs present (Figs. 28, 31).

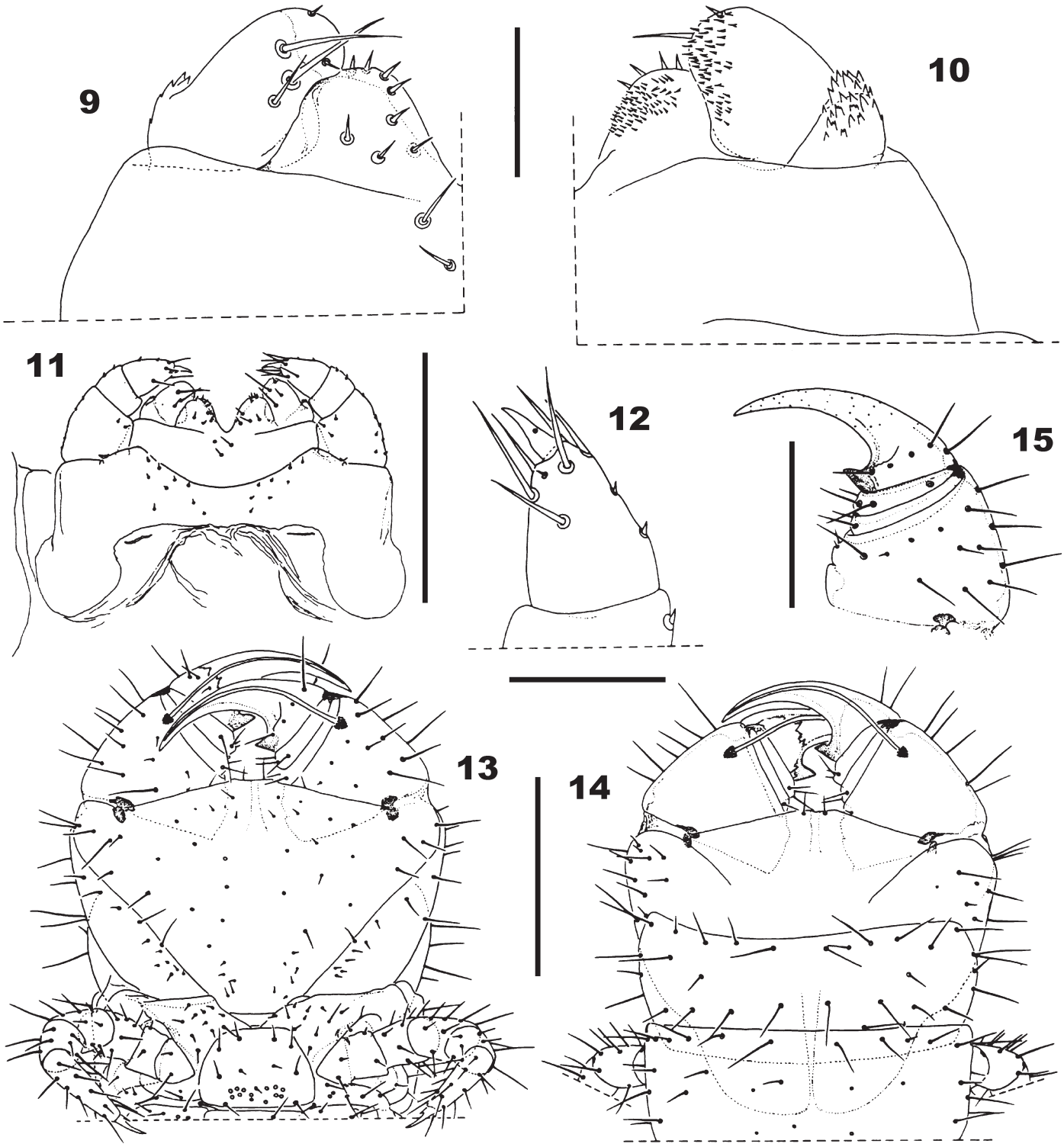
Female (Paratype A). Thirty-five pairs of legs, body length 14 mm, maximum body width 0.95 mm.

All features similar to those of male except for shape and chaetotaxy of last leg-bearing segment and terminal segments.

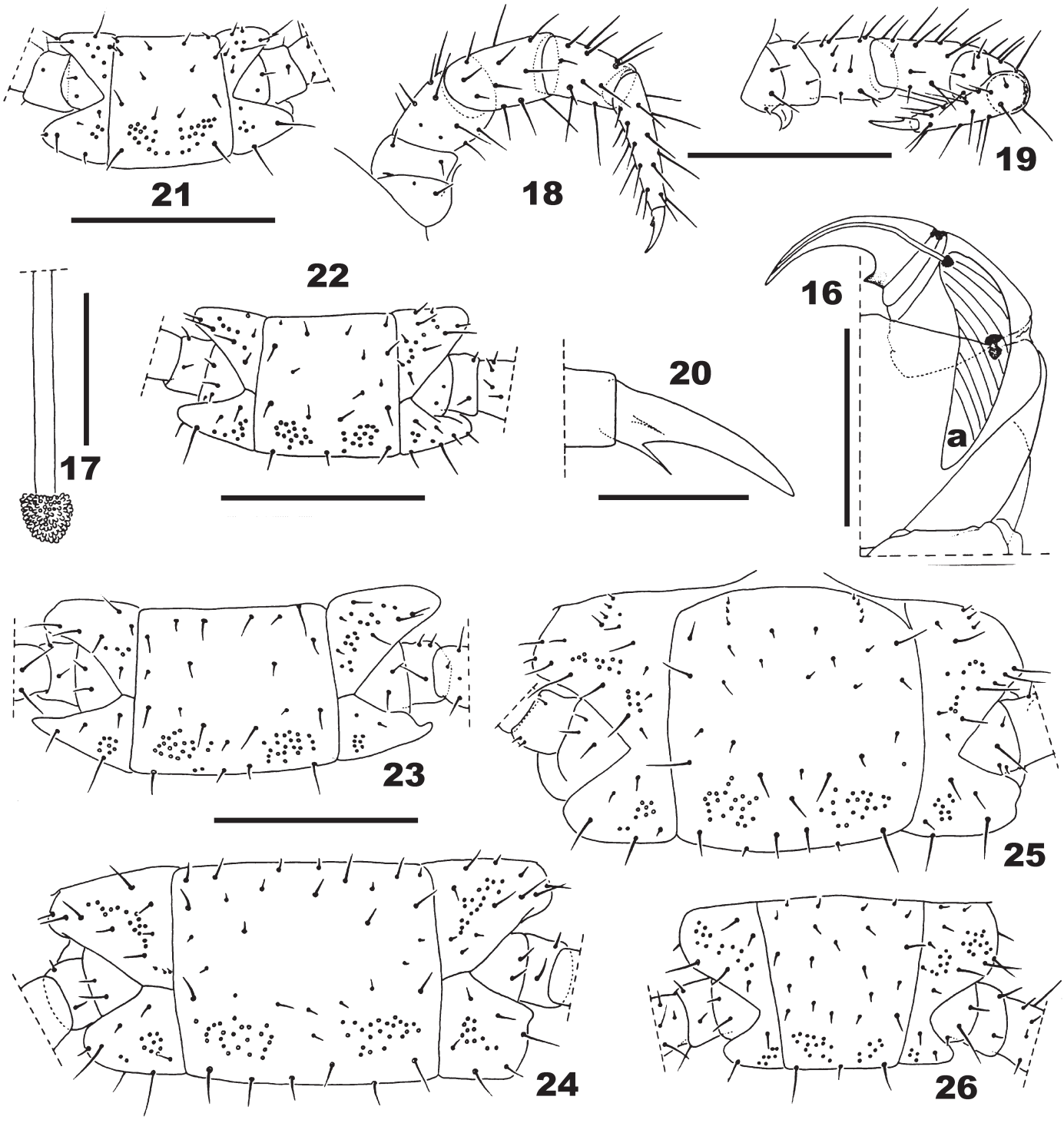
Last leg-bearing segment: form and chaetotaxy of tergum and sternum as in Figs. 34-35. Coxopleura slightly protruding at distal ventral ends, setae uniformly distributed in all surfaces (Figs. 34-35). Each coxopleuron with eight single coxal organs distributed as in Fig. 35.

Table 1. Number of type a, b, and c sensilla on antennal articles II, V, IX, and XIII in the male holotype of *Strigamia hoffmani* sp. n.

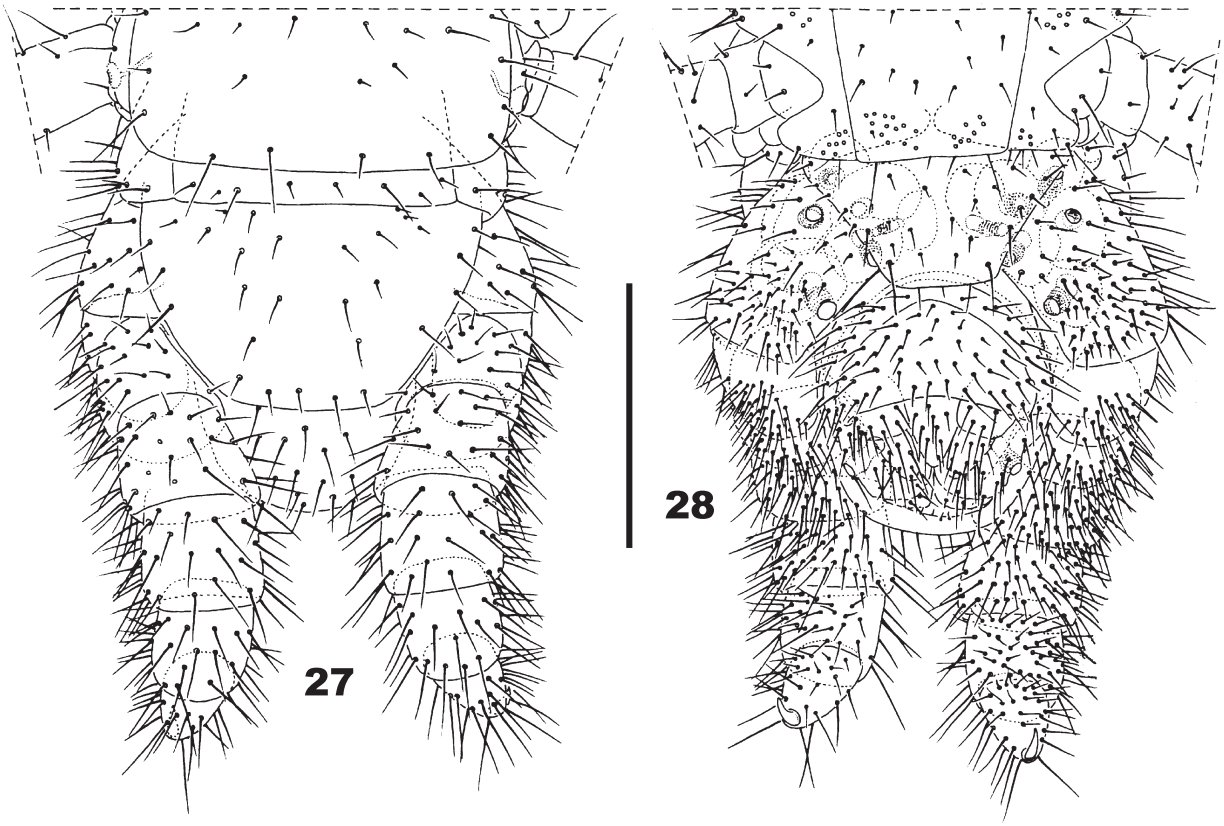
Antennal article	Ventral		Dorsal			Figures
	a	b	a	b	c	
II		2	1	1		
V	1	2	1	1		
IX	1	2–3	1	3	2	
XIII	1	1	1	2	3	2, 3



Figs. 9-15. *Strigamia hoffmani* sp. n., ♂ holotype. 9. Right first maxilla, ventral; 10. Right first maxilla, dorsal; 11. First and second maxillae, ventral; 12. Apical article and claw of telopodite of left second maxilla, ventral; 13. Forcipular segment and first leg-bearing segment, ventral; 14. Same, dorsal; 15. Left forcipular telopodite, ventral. Scale bars: 0.05 mm (9-10, 12); 0.3 mm (11, 13-14); 0.2 mm (15).



Figs. 16-26. *Strigamia hoffmani* sp. n., ♂ holotype. 16. Detail of poison gland in left side of forcipular segment, ventral (a: poison gland); 17. Detail of calyx of left poison gland, ventral. 18. Left leg XV, ventro-anterior view; 19. Left leg XXXII, ventral; 20. Claw of left leg XXVIII, anterior view; 21. Sternum, procoxae, and metacoxae of leg-bearing segment II; 22. Same, leg-bearing segment IV; 23. Same, leg-bearing segment IX; 24. Same, leg-bearing segment XIX; 25. Same, leg-bearing segment XXV; 26. Same, leg-bearing segment XXXII. Scale bars: 0.3 mm (16, 18-19, 21-26); 0.05 mm (17, 20).



Figs. 27-28. *Strigamia hoffmani* sp. n., ♂ holotype. 27. Posterior part of penultimate leg-bearing segment, last leg-bearing segment, and terminal segments, dorsal; 28. Same, ventral. Scale bar: 0.3 mm.

Podomeres of terminal legs with shape and chaetotaxy as in Figs. 34-35.

Terminal segments: intermediate tergum with posterior margin convex, intermediate sternum seemingly covered by sternum of last leg-bearing segment, first genital sternum with posterior margin concave (Figs. 34-35). Gonopods uniarticulate, poorly developed, and fused along sagittal plane (Fig. 35).

Variability:

Maximum body length: adult males, 12 mm; adult females, 16 mm.

Number of pairs of legs: males, 33 or 35; females, 35 or 37.

Labrum: mid-piece with ca. 6 to 15 teeth, which, in most specimens, are distributed contiguously near the anterior margin of the mid-piece; in some specimens, a few additional teeth present in the internal side of the mid-piece (Fig. 36). Aspect of teeth and that of the whole mid-piece are dependent on the degree of squashing on microscope slides. Figs. 40-41 show a labrum without squashing effect and Fig. 38 shows a lightly squashed labrum. By contrast, Figs. 6, 33, 36, 37, and 39 show very squashed labra of different specimens, all aspects representing artifacts. The greater the degree of squashing, the longer the teeth appear to be to the observer, and the more their orientation changes from posteriad – or ventrally – (Figs. 38, 40, 41) to clearly anteriad (Figs. 6, 33, 36, 37, 39; in the latter, two teeth are folded posteriad).

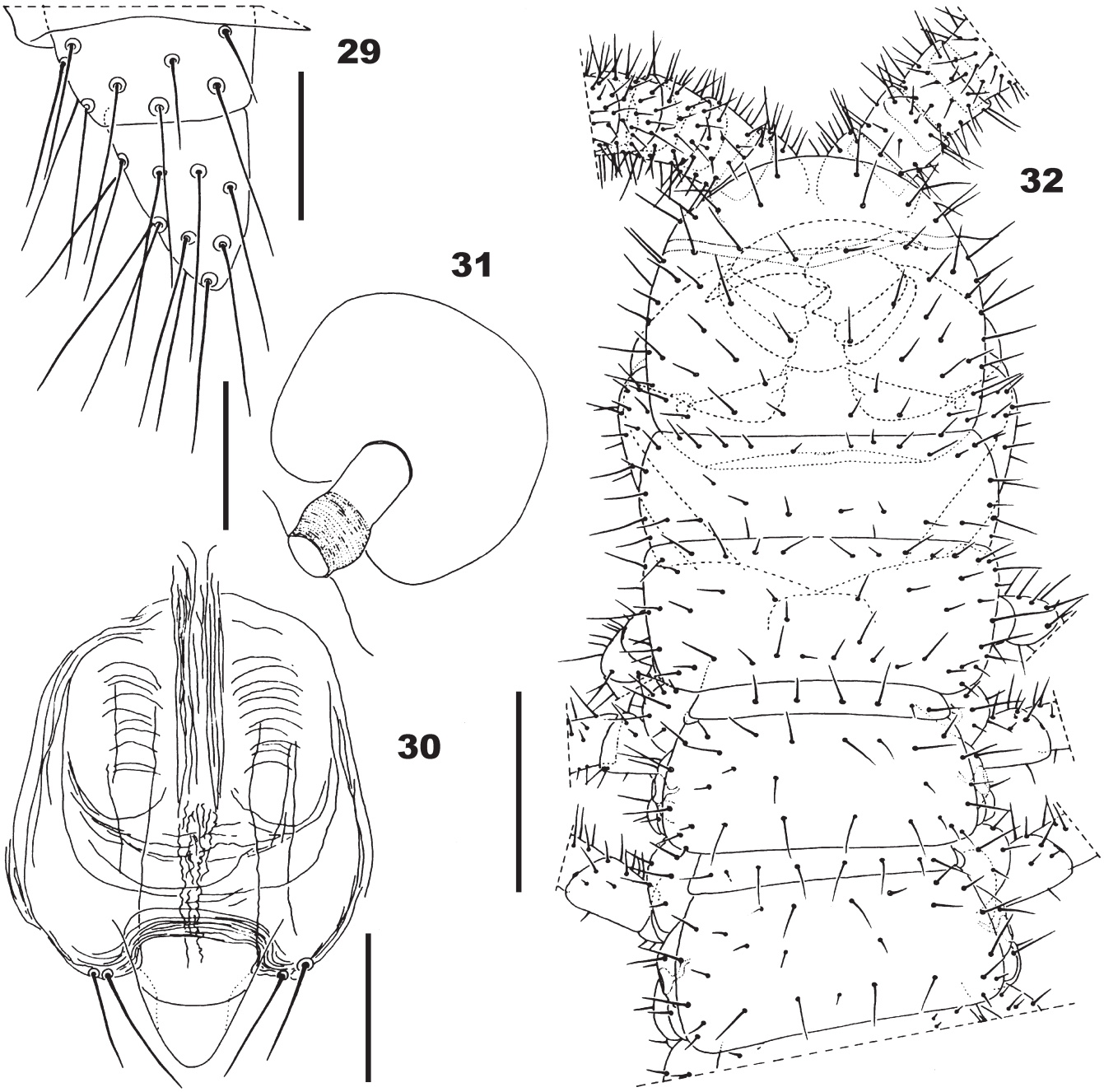
Coxal organs: number in each coxopleuron is 5 to 10 in adult specimens, 4 to 6 in subadults, and 1 to 4 in juveniles.

All specimens examined have 1+1 anal organs.

Etymology: This species is kindly dedicated to Dr. Richard L. Hoffman, Curator of Recent Invertebrates at the Virginia Museum of Natural History, as a personal recognition for all of the generous help and expert advice that he has provided me during many years of research on Chilopoda Geophilomorpha.

Discussion

All males and females from Burkes Garden (Tazewell-Bland counties) have 33 and 35 pairs of legs, respectively, whereas all males and females from the northern slope of Bent Mountain (Roanoke County) have 35 and 37 pairs of legs, respectively. The first site (type locality) is on Silurian sandstone, the second is on



Figs. 29-32. *Strigamia hoffmani* sp. n., ♂ holotype. 29. Right gonopod, ventral; 30. Penis, dorsal; 31. Right anal organ, ventral. *Strigamia hoffmani* n. sp. (♀ Paratype A; USA: Virginia: Tazewell-Bland counties: Burkes Garden). 32. Anterior region of the body, showing cephalic shield, base of antennae, and first three leg-bearing segments, dorsal. Scale bars: 0.05 mm (29-31); 0.3 mm (32).

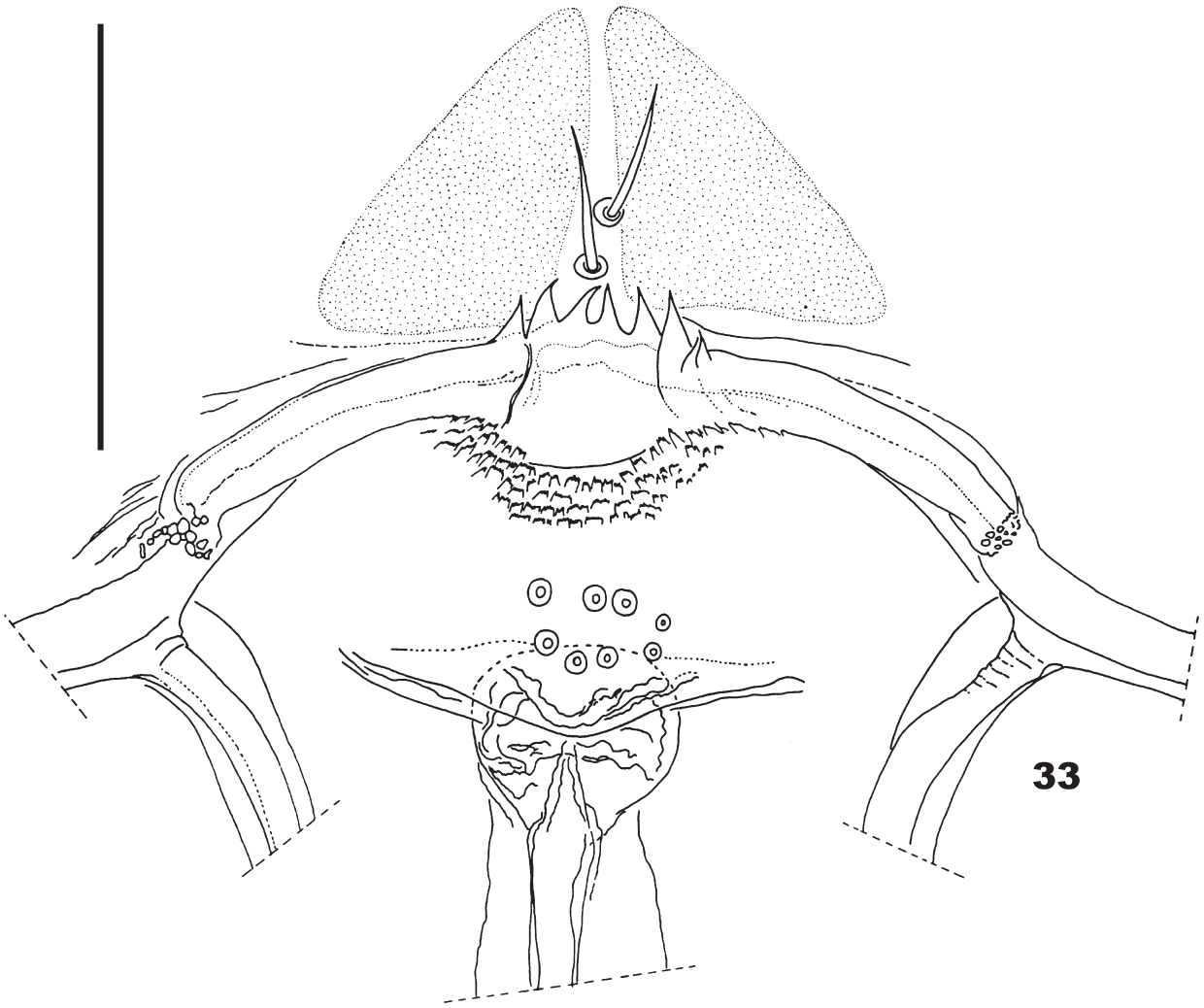


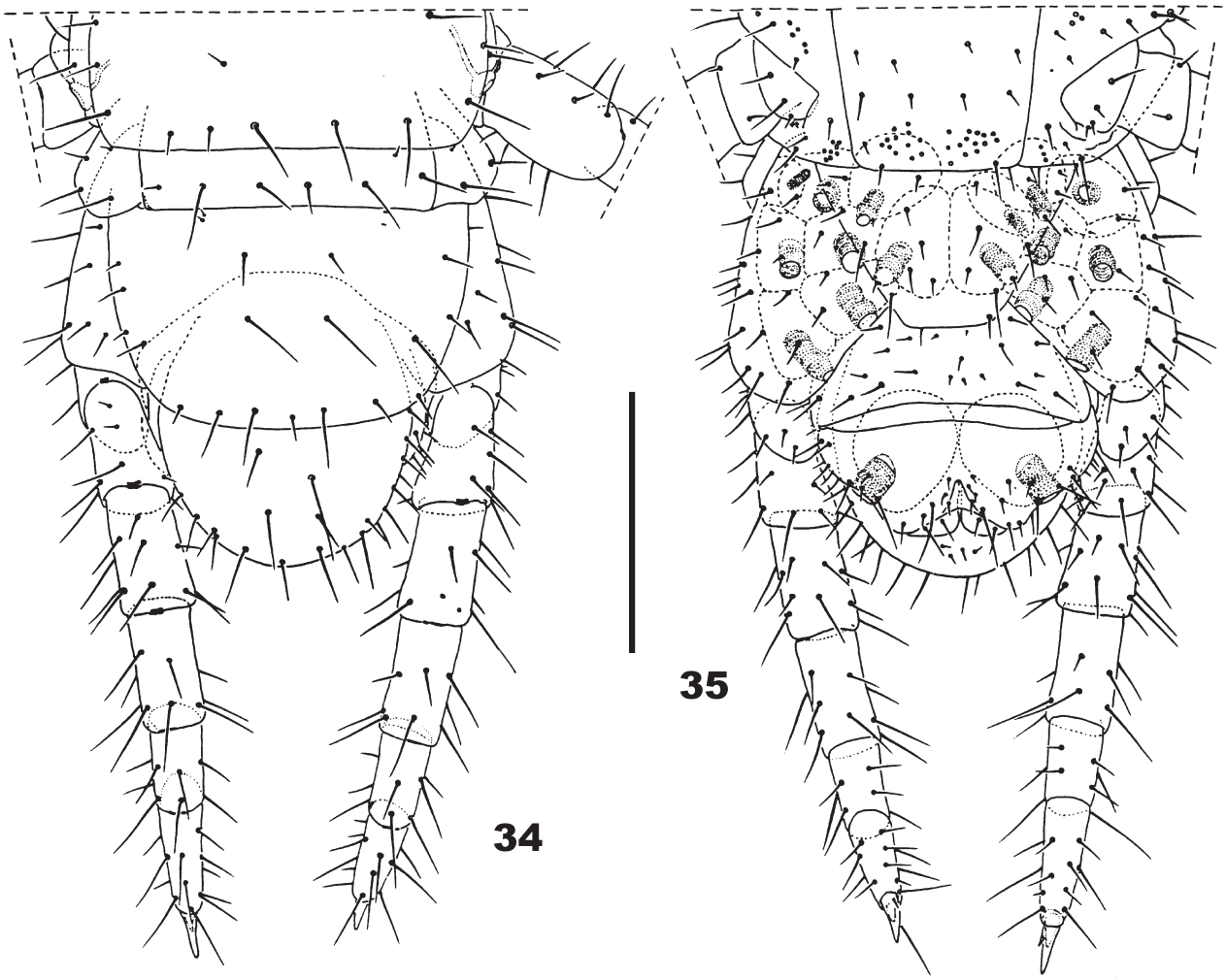
Fig. 33. *Strigamia hoffmani* sp. n. (♀ Paratype A; USA: Virginia: Tazewell-Bland counties, Burkes Garden). Labrum (very squashed on microscope slide). Scale bar: 0.1 mm.

metamorphosed igneous rocks. The sites are separated by about 100 km, but the forest cover seems comparable. The difference in the number of pairs of legs perhaps could be interpreted just as interpopulation variation. Currently, in the absence of any quantitative data (e.g., soil pH, etc.), it is not possible to attribute any obvious difference in ecological conditions between the sites. The possible reasons of the different number of pairs of legs between the specimens from the two populations remain to be discovered and adequately explained.

Significant interpopulation variation is known to exist in several geophilomorph species. However, until now there has been no strong evidence of any particular geographical pattern to the variation, partly as a result of limited sample size and/or small numbers of samples, with the only exception of a latitudinal cline in segment number in British populations of *Strigamia maritima* (Leach, 1817) (Kettle and Arthur 2000).

Strigamia hoffmani sp. n. and *S. chionophila* (Wood, 1862) are characterized by very small body size and a very low number of pairs of legs. Similar traits are observed in a Palearctic member of the genus, i.e., *S. pusilla* (Seliwanoff, 1884), with 35 or 37 pairs of legs and 18-24 mm long (treated by Zalesskaja et al. 1982). (*Scolioplanes perkeo* Verhoeff, 1935, regarded as a synonym of the latter [Minelli 2006], shows 33 pairs of legs and is 15 mm long.). A small segment number is probably a derived condition within *Strigamia* where the maximum body length known to occur in the genus is ca. 80 mm.

Diverse cases of reduced body size exist within geophilomorphs (see Minelli et al. 2000, Foddai et al. 2003). This is known to occur in some genera of the Geophilidae (within *Geophilus* Leach, 1814, where *G. persephones* Foddai & Minelli, 1999, with 29 pairs of legs is 16 mm long, *Hyphydrophilus* Pereira, Minelli



Figs. 34-35. *Strigamia hoffmani* sp. n. (♀ Paratype A; USA: Virginia: Tazewell-Bland counties, Burkes Garden). 34. Posterior part of penultimate leg-bearing segment, last leg-bearing segment, and terminal segments, dorsal; 35. Same, ventral. Scale bar: 0.3 mm.

& Barbieri, 1994, *Ribautia* Brölemann, 1909, and *Dinogeophilus* Silvestri, 1919, where *D. oligopodus* Pereira, 1984, with 29 pairs of legs, is just 4.5 mm long); the Schendylidae (within *Schendyla* Bergsoe and Meinert, 1866 and *Schendylops* Cook, 1899, where *Schendylops oligopus* (Pereira Minelli & Barbieri, 1995), with 27, 29, and 31 pairs of legs is 8-9 mm long); the Ballophilidae (within *Taeniolinum* Pocock, 1893 and *Ityphilus* Cook, 1899, where *I. calinus* Chamberlin, 1957 with 41-43 pairs of legs is 9 mm long); and the Mecistocephalidae (within *Nannarrup* Foddai, Bonato, Pereira & Minelli, 2003, where *N. hoffmani*, with 41 pairs of legs is 10 mm long). Reduction in adult body size hence evolved independently in several derived lineages, often coupled with a secondary reduction to the smallest number of pairs of legs actually found in the respective family; nevertheless, no reduction in the number of body segments is involved in the case of *N. hoffmani* (Foddai et al. 2003), which is analysed as a possible instance of miniaturization in the same paper.

The present contribution represents only a small addition to our knowledge of the eastern North American species of the genus *Strigamia*. There is an obvious need to undertake a complete revision of all Nearctic nominal taxa presently included in this genus, as well as those cited from the Neotropics, towards developing a more complete and appropriate understanding of this very interesting and difficult group of geophilomorph centipedes.

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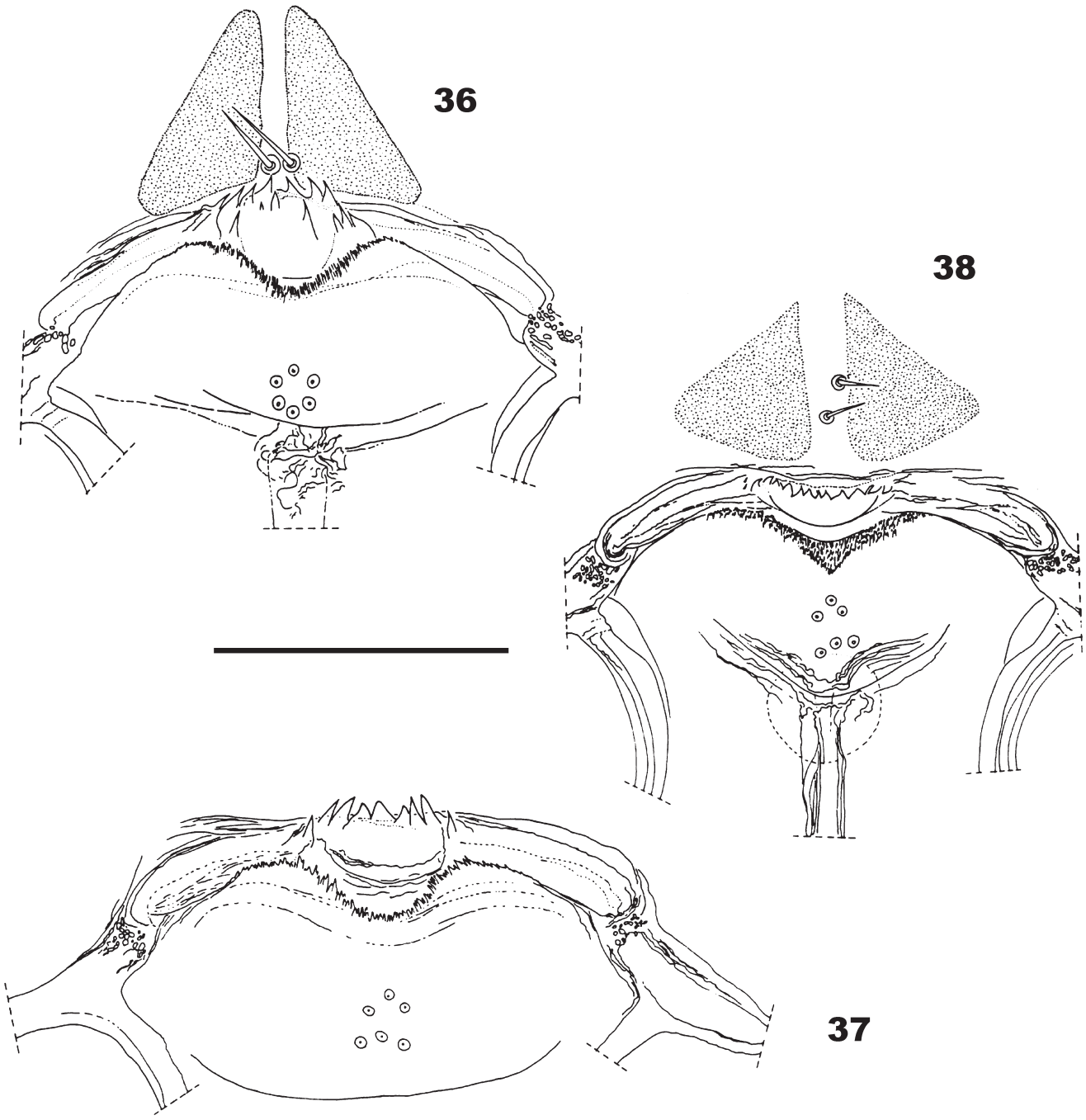
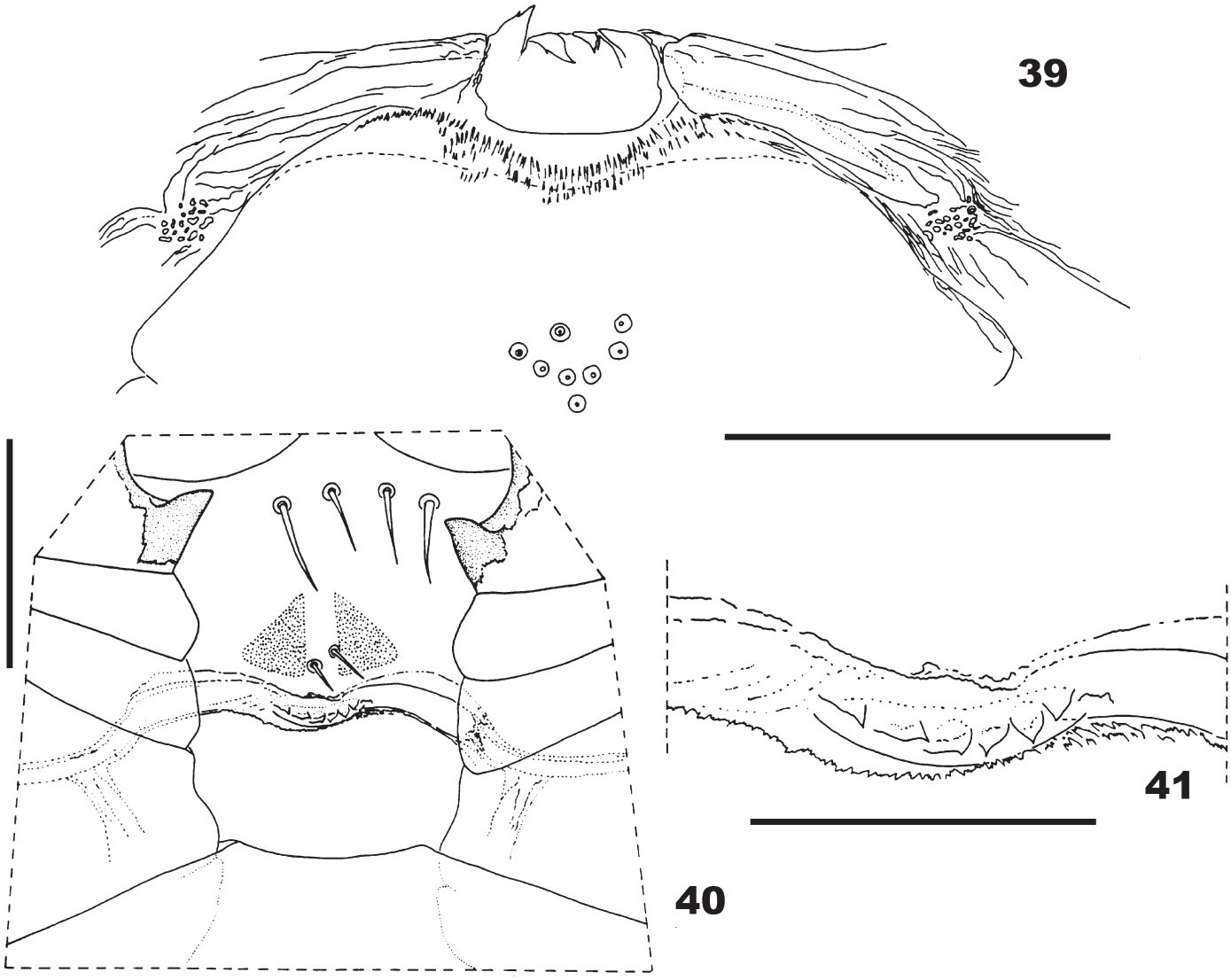
I am very grateful to Dr. Richard L. Hoffman who collected all of the specimens studied herein and recognized them as belonging to a new species of *Strigamia*, but very kindly offered me the opportunity to



Figs. 36-38. *Strigamia hoffmani* sp. n. (♂ Paratype F; USA: Virginia: Tazewell-Bland counties, Burkes Garden). 36. Labrum (very squashed on microscope slide). *Strigamia hoffmani* sp. n. (♂ Specimen "A"; USA: Virginia: Roanoke County: north slope of Bent Mountain). 37. Labrum (very squashed on microscope slide). *Strigamia hoffmani* sp. n. (♂ Specimen "B"; USA: Virginia: Roanoke County: north slope of Bent Mountain). 38. Labrum (lightly squashed on microscope slide – three right lateral teeth are directed anteriad and all the remaining, posteriad). Scale bar: 0.1 mm.



Figs. 39-41. *Strigamia hoffmani* sp. n. (♀ Specimen "C"; USA: Virginia: Roanoke County, north slope of Bent Mountain). 39. Labrum (very squashed on microscope slide – two teeth were folded posteriad during remounting). *Strigamia hoffmani* sp. n. (♀ Specimen "D"; USA: Virginia: Roanoke County, north slope of Bent Mountain). 40. Aspect of the labrum observed by transparency in an undissected specimen, not squashed on the microscope slide (first and second maxillae not drawn); 41. Detail of teeth of mid-piece of labrum of Fig. 40. Scale bars: 0.1 mm (39-40); 0.05 mm (41).

describe the new taxon that he discovered. He strongly encouraged the realization of the present contribution and provided expert help and advice for the improvement of the manuscript. Dr. Steven M. Roble very kindly improved the language and contributed valuable comments and corrections, and two anonymous referees provided useful suggestions on a previous version of the paper. Hernán L. Pereira (La Plata) edited the digital figures.

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