

Species of *Brachystomella* (Collembola: Brachystomellidae) from the Neotropical region

WANDA MARIA WEINER¹ and JUDITH NAJT²

¹Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Ślawkowska 17, PL-31 016 Kraków, Poland, e-mail: weiner@isez.pan.krakow.pl

²UPRES-A CNRS 8043, Laboratoire d'Entomologie, Muséum national d'Histoire naturelle, 45, rue Buffon, F-75005 Paris, France, e-mail: najt@mnhn.fr

Key words. Collembola, Brachystomellidae, *Brachystomella*, Neotropical region, new species, diagnosis, key

Abstract. In this paper six new species of the genus *Brachystomella* Ågren from the Neotropical region are described: *B. desuttrae* sp. n. (Peru), *B. mataraniensis* sp. n. (Peru), *B. pefauri* sp. n. (Venezuela), *B. purma* sp. n. (Peru), *B. saladaensis* sp. n. (Argentina) and *B. zerpa* sp. n. (Venezuela). *Brachystomella honda* Christiansen & Bellinger, 1988 is synonymised with *Brachystomella baconaoensis* Gruia, 1983. Diagnoses and comments on the original descriptions as well as remarks on 22 species are included.

INTRODUCTION

Najt & Weiner (1996) revised the list of species of the genus *Brachystomella*, which currently includes 52 species, out of which 25 occur in the Neotropical region. In the Catalogue of Neotropical Collembola by Mari Mutt & Bellinger (1990) there are 29 species of *Brachystomella*. However, this list was assembled from the literature without critical evaluation of the species. *B. allendei* Massoud & Rubio (in Hermosilla & Rubio, 1976) is *nomen nudum*. Specimens from this region determined as *B. parvula*, with the “*parvula*” type of furca, should be called *B. ca. parvula* (Schaeffer, 1896). *B. rosai* (Bonet, 1934) belongs to the genus *Setanodosa* Salmon. *B. trinitata* (Jackson, 1927) (probably = *B. septemoculata* Denis, 1931) was identified on the basis of immature specimens (Massoud, 1967). *B. subandinensis* Massoud, 1967 is a new synonym for *B. contorta* Denis, 1931.

Two other species should also be mentioned, as they may belong to the genus *Brachystomella*. These are: *Pseudachorutes asper* Börner, 1906, described from Brasil and *Schoettella subcrassa* Schäffer, 1897, described from Argentina. However, at present it is not possible to resolve this problem, because the type material has been lost (Strümpel, personal comm.).

In the material from Argentina, Peru and Venezuela we found six new species, which are described below. We also examined the types and additional material of 22 species, commented on the original descriptions and provided some additional remarks. We were not able to examine one species: *Brachystomella sexoculata* Massoud, 1967 because the type material was not preserved. We also synonymised *Brachystomella honda* Christiansen & Bellinger, 1988 with *Brachystomella baconaoensis* Gruia, 1983.

This study confirms that most of the species of *Brachystomella* occur the Neotropical region (Najt & Weiner, 1996).

Abbreviations. ISEA – Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland; MNHN – Laboratoire d'Entomologie, Muséum national d'Histoire naturelle, Paris, France.

SYSTEMATIC ACCOUNT

Brachystomella agrosa Wray, 1953

Brachystomella maxima Cassagnau & Rapoport, 1962

Remarks. According to Najt et al. (1990), males of this species possess secondary sexual characters on genital papilla. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 19, 19 and 18 setae respectively; seta M present, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae respectively. Even anal valves each with two setae hr.

Brachystomella baconaoensis Gruia, 1983

Brachystomella honda Christiansen & Bellinger, 1988 syn. nov.

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 5–7 vesicles. 8+8 eyes present. Formula of sensory setae s per half tergum: 022/21111. Head without seta a0, setae c3, c5 present. Thoracic tergum I with 3+3 setae. Reduced furca with 3 setae on each dens. Mucro present. Tibiotarsi I, II and III with 18, 18 and 17, setae respectively; seta A1 is capitate, seta M absent (except a single anomaly in one specimen). Subcoxae “2” I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Redescription. Antennae shorter than head (about 3/4 the length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory

organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (dorsolateral sensillum shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather long ordinary setae, with 6 subcylindrical sensilla only slightly distinct (not as in the description of *Gruia* 1983); dorso-external microsensillum present, truncated subapical organite present; simple apical vesicle in deep cavity, ventral side with a few truncated setae.

Postantennal organ 1.2–1.4 times larger than ocellus B, bearing 5–7 vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 9 teeth (not as in the original description of *B. honda*). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy with smooth acuminate mesochaetae, with long sensory setae *s*. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head without seta *a*0, setae *c*3 and *c*5 present. Thoracic tergum I with 3+3 setae. Abdominal terga I–IV with seta *s* = *p*4. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum II with 1+1 setae.

Furca with four setae on each dens. Mucro with hooked apex and lamella (not as in the description of *B. baconaoensis*). Ratio mucro : dens = 1 : 1.5–1.75. Tenaculum with 3+3 teeth. Only preadult male known. Even anal valves each with three setae *hr*.

Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively; A1 capitate; seta M absent (one specimen with 18 setae on tibiotarsi III - seta M present), seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5, 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at half length of its inner edge, with a pair of lateral teeth. Empodial appendage absent.

Type material. Lectotype ♀, paralectotypes: ♂ (preadult) and 2 ♀♀ presently designated, in Institutul de Speologie “Emil Racovitza”, Bucharest, Romania.

Type locality. Cuba, Río Baconao (Oriente), in a sand on the beach at the mouth of the river, about 50 m of the seashore, March 24, 1973, lgt. L. Botoșăneanu.

Other locality. USA, Florida: Monroe Co., Bahia Honda Key, on rocky tide flats, January 5, 1985, lgt. K. Christiansen, 2 paratypes.

Discussion. *Brachystomella baconaoensis* Gruia, 1983 is most similar to *B. neomexicana* (Scott, 1960). They have the same number of setae on tibiotarsi (also the capitate setae), femora, trochanters, coxae, subcoxae “I” and “II”, the same number of setae *hr* on even valves (3). They differ in the number of setae on the dens (4 in *B. baconaoensis* and 5–6 in *B. neomexicana*) and in the shape of the apical vesicle on antennal segment IV (simple in *B. baconaoensis* and trilobated in *B. neomexicana*). We examined the type material of *Brachystomella baconaoensis* Gruia, 1983 and *Brachystomella honda* Christiansen & Bellinger, 1988 and concluded that *B. honda* is a new synonym of *B. baconaoensis* Gruia.

Brachystomella barrerai Palacios-Vargas & Najt, 1981

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively, of which 3, 4 and 4 capitate (not 3, 3, 4 as in the original description by Palacios-Vargas & Najt 1981); setae A1, A2, T3 capitate on tibiotarsus I, setae A1, A2, A7, T3 capitate on tibiotarsi II and III, seta M absent, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae *hr*.

Brachystomella chilensis (Rapoport & Rubio, 1963)

Organella chilensis Rapoport & Rubio, 1963.

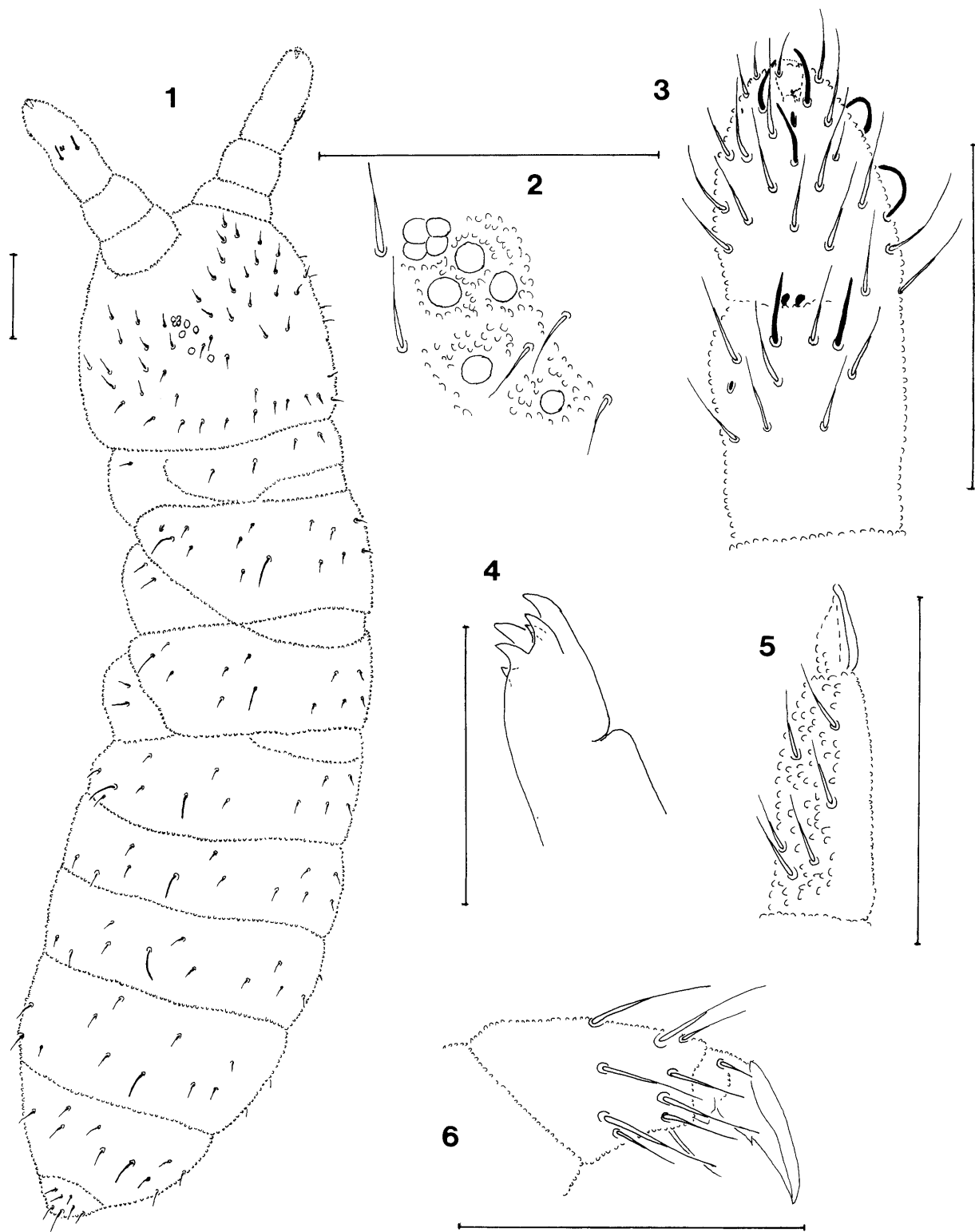
Figs 1–6

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with four vesicles. 5+5 eyes present, eyes D, F and H absent. One guard seta between guard sensilla in sensory organ of antennal segment III present. Very short ordinary setae, formula of sensory setae *s* per half tergum: 022/21111. Head with setae *a*0, *c*3, *c*5 present, *sd*5 absent. Thoracic tergum I with 3+3 setae. Furca well developed with 6 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M almost in row B. Subcoxae “2” I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with three setae *hr*.

Redescription. Antennae shorter than head (about 3/4 the length of head). Antennal segment I with 7 setae, antennal segment II with 12–13 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (both the same size) and one guard seta between them; ventral microsensillum present. Antennal segment IV with rather short ordinary setae, with 5 only slightly distinct subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapical organite present; apical vesicle simple in a deep cavity, ventral side with a few truncated setae (Fig. 3).

Postantennal organ (Fig. 2) almost 1.6 times larger than ocellus B, bearing 4 vesicles. Eyes 5+5, eyes D, F and H absent. Buccal cone typical for the genus. Mandible absent, maxilla with 6 teeth (not 5 as in original description by Rapoport & Rubio, 1963) (Fig. 4). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 1 with very short ordinary setae, with longer sensory setae *s*. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head with setae *a*0, *c*3 and *c*5 present, seta *sd*5 absent. Thoracic tergum I with 3+3 setae. Abdominal terga I–III with seta *s* = seta *p*4, abdominal tergum IV with seta *s* = *p*3. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.



Figs 1–6. *Brachystomella chilensis* (Rapoport & Rubio, 1963). 1 – dorsal chaetotaxy (scale 0.1 mm); 2 – postantennal organ and eyes (scale 0.1 mm); 3 – antennal segments III and IV, dorsolateral view (scale 0.1 mm); 4 – maxillum (scale 0.05 mm); 5 – dens and mucro (scale 0.1 mm); 6 – tibiotarsus III (scale 0.1 mm).

Furca well developed with 6 setae on each dens (Fig. 5). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 2.72. Tenaculum with 3+3 teeth. Males probably without secondary sexual characters (only juve-

nile males known). Even anal valves each with three setae hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal seta; seta M in row B, seta

B7 absent on tibiotarsus III. Femora I, II and III with 13, 12 and 11 setae, trochanters I, II and III with 6, 6 and 6 setae, coxae I, II and III with 3, 6 and 7 setae, respectively; subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at 1/3 length of its inner edge, with pair of lateral teeth (Fig. 6). Empodial appendage absent.

Type material. Lectotype juvenile ♂ and 5 paralectotypes: 2 ♀♀, 3 juveniles presently designated, in Museo Nacional de Historia Natural, Santiago, Chile; 1 paralectotype from Rapoport's collection (juvenile ♂) in Museo Nacional de Historia Natural, La Plata, Argentina.

Type locality. Chile, crest of "El Roble" 2200 m a.s.l., 18.viii.1961, lgt. I. Rubio.

Discussion. *Brachystomella chilensis* (Rapoport & Rubio), 1963, with *B. montebella* Najt & Palacios-Vargas, 1986 and *B. pefauri* sp. n. belong to the same group of species having the same number of eyes: 5+5, and the same number of setae on thoracic tergum I (2+2) (see discussion in *B. pefauri* sp. n.).

Brachystomella contorta Denis, 1931

Brachystomella subandinensis Massoud, 1967, syn. nov.

Brachystomella sabandinensis Winter, 1962, nomen nudum.

Figs 7–13

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with five vesicles. 8+8 eyes present. Very short ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head without setae a0 and sd1, with setae c3 and c5 present. Thoracic tergum I with 2+2 setae. Furca well developed with 5 setae on each dens. Bent mucro present. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M almost in row B. Subcoxae "2" I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with two setae hr.

Redescription. Antennae shorter than head (about 3/4 the length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (dorsolateral sensillum shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather short ordinary setae, with 6 slightly distinct subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapical organite present; apical vesicle simple in deep cavity, ventral side with a few truncated setae. (Fig. 9).

Postantennal organ (Fig. 8) almost 1.5 times larger than ocellus B, bearing five vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 7 teeth (Fig. 10). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 7 with very short ordinary setae, with longer sensory setae s. Their formula per half tergum: 022/21111. Microsensilla on thoracic tergum II present. Head without setae a0 and sd1, setae c3 and c5 present. Thoracic tergum I with 2+2 setae. Abdominal

terga I–IV with seta s = seta p3. Thoracic sternum without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 5 setae on each dens, with bent mucro (Fig. 13). Ratio mucro : dens = 1 : 2.2. Tenaculum with 3+3 teeth. Males with secondary sexual characters on genital papilla (Fig. 12). Even anal valves each with two setae hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal seta; seta M in row B, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 1–2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at 1/3 length of its inner edge, with pair of lateral teeth (Fig. 11). Empodial appendage absent.

Type material. Lectotype ♀ presently designated, in MNHN.

Type locality. Costa Rica, Puente de las Mulas, iii. 1916, lgt. J. Fig. Tristan. Costa Rica, San José, (no date) lgt. J. Fig. Tristan, 4 specimens; Costa Rica, Buenos Aires, San Isidro, plantation of Papaya, lgt. I. Rubio & W. Hermosilla, 3 specimens.

Discussion. In the group of species of *Brachystomella* without seta a0 on head and with 5 setae on dens *Brachystomella contorta* is closest to *Brachystomella septemoculata* (see discussion of *B. septemoculata*). We examined the type material of *Brachystomella subandinensis* Massoud, 1967 and concluded that it is a new synonym of *Brachystomella contorta*.

Brachystomella cyanea (Rapoport, 1962)

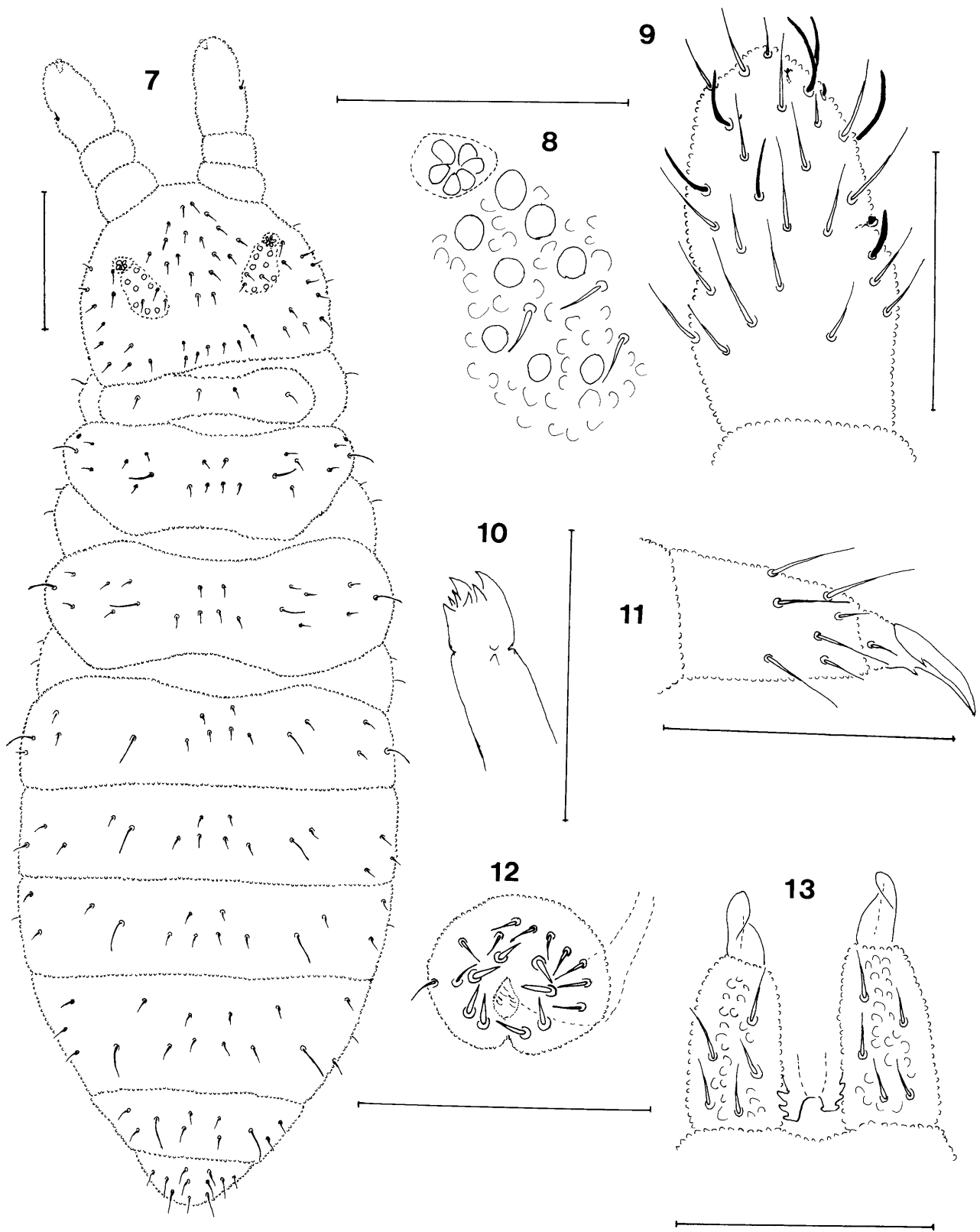
Brachygastrura cyanea Rapoport, 1962

Figs 14–19

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 7–10 vesicles. 8+8 eyes present. Mesochaetae and serrated macrochaetae present, formula of sensory setae s per half tergum: 022/21111. Head with setae a0, c1, c2 and c5. Thoracic tergum I with 2+2 setae. Reduced furca with 3 setae on each dens. Mucro absent. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M almost in row B. Subcoxae "2" I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with two setae hr.

Redescription. Antennae shorter than head (about 3/4 the length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (both of the same size) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather long ordinary setae, with 6 slightly distinct subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapical organite present; apical vesicle simple in deep cavity, ventral side with a few truncated setae (Fig. 16).

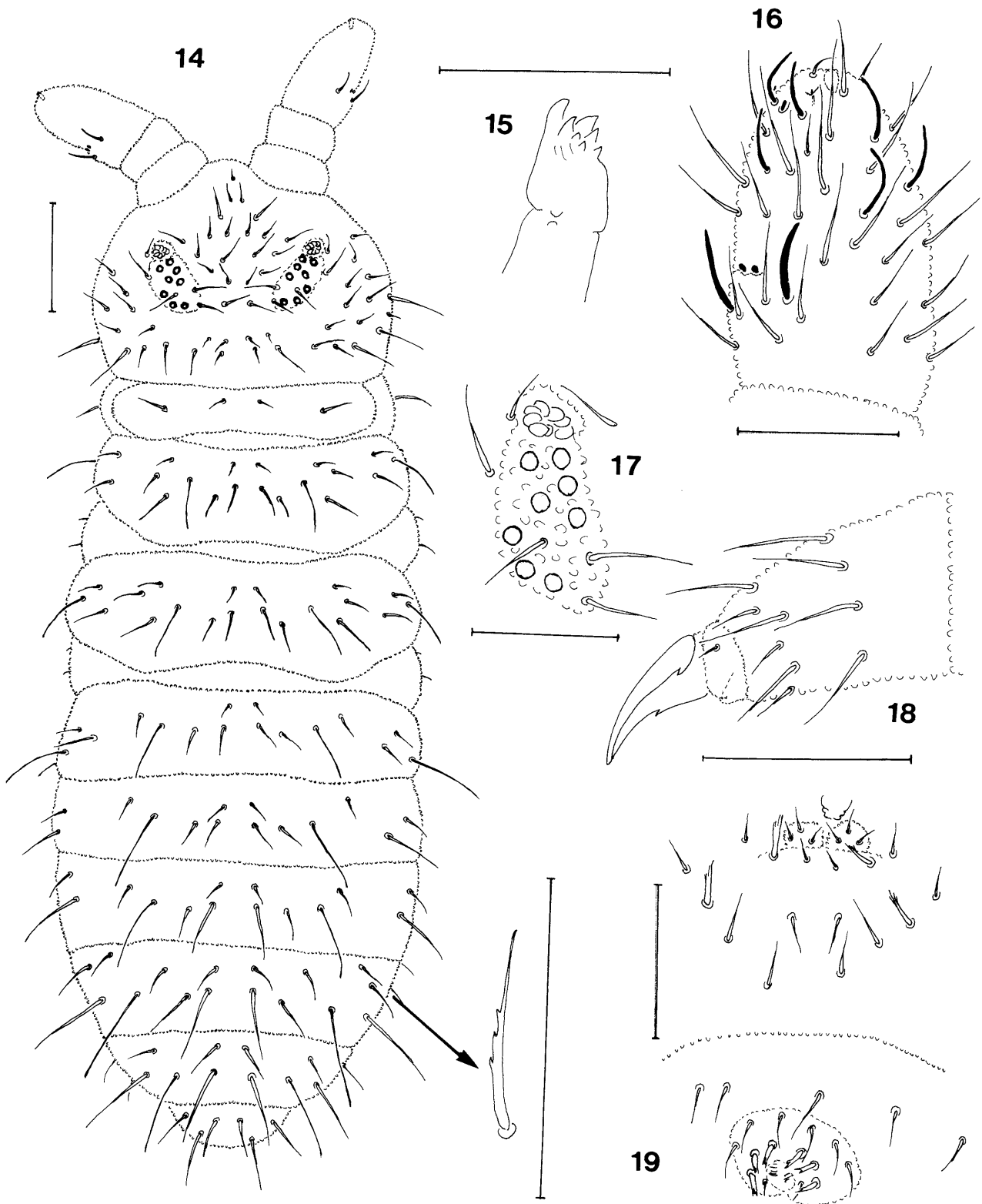
Postantennal organ (Fig. 17) 2.5 times larger than ocellus B, bearing 7–10 vesicles. Eyes 8+8. Buccal cone



Figs 7–13. *Brachystomella contorta* Denis, 1931. 7 – dorsal chaetotaxy (scale 0.1 mm); 8 – postantennal organ and eyes (scale 0.05 mm); 9 – antennal segments III and IV, dorsal view (scale 0.05 mm); 10 – maxillum (scale 0.05 mm); 11 – tibiotarsus III (scale 0.05 mm); 12 – male genital plate (scale 0.05mm); 13 – dens, mucro and tenaculum (scale 0.05 mm).

typical for the genus. Mandible absent, maxilla with 7 teeth (Fig. 15). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 14 with serrated meso- and macrochaetae, with long sensory setae s. Their formula per half tergum: 022/21111. Microsensilla on thoracic



Figs 14–19. *Brachystomella cyanea* (Rapoport, 1962). 14 – dorsal chaetotaxy (scale 0.1 mm), mesochaeta (scale 0.05 mm); 15 – maxillum (scale 0.05 mm); 16 – antennal segments III and IV, dorsolateral view (scale 0.05 mm); 17 – postantennal organ and eyes (scale 0.05 mm); 18 – tibiotarsus III (scale 0.05 mm); 19 – male secondary sexual characters and furca (scale 0.05 mm).

tergum II present. Head with setae a0, c1, c2 and c5. Thoracic tergum I with 2+2 setae. Abdominal terga I–IV with seta s = seta p3. Thoracic sterna without setae. Ventral

tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1.

Reduced furca with 3 setae, rarely with 4 setae on each dens (Fig. 19). Mucro absent. Tenaculum with 2+2 teeth. Males with secondary sexual characters on genital papilla and abdominal tergum IV (Fig. 19). Even anal valves each with two setae hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal seta; seta M between setae B4 and B5, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at half length of its inner edge, with pair of lateral teeth (Fig. 18). Empodial appendage absent.

Type material. Lectotype juvenile ♂ and 11 paralectotypes presently designated, in Museo de La Plata, Argentina.

Type locality. Argentina, Gonzales Chaves, half-bog, 8.i.1962, lgt. E.H. Rapoport.

Other material. Argentina, La Plata, Los Hornos, 12.vii.1972, lgt. A. Alzuet, 3 specimens.

Discussion. *Brachystomella cyanea* Rapoport, 1962 differs from all the other species belonging in the genus *Brachystomella* in the following characters: serrated macrochaetae, reduced furca, mucro absent, postantennal organ with 7–10 vesicles, 2+2 setae on thoracic tergum, tibiotarsi I, II and III with 19, 19 and 18 setae, respectively. The shape of the dens resembles that of the furca in *B. minimucronata* Palacios-Vargas & Najt, 1981, but the latter has serrated mesochaetae and capitate macrochaetae, a very small mucro, postantennal organ with 3–5 vesicles, 3+3 setae on thoracic tergum I, tibiotarsi I, II and III with 18, 18 and 17 setae, respectively (3, 4 and 4 of which are capitate). In both species the apical vesicle is simple, and the tenaculum possesses 2+2 teeth.

Brachystomella desutterae sp. n.

Figs 20–25

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 7 vesicles. 8+8 eyes present. Very short ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head without setae a0 and sd1, setae c2 and c5 present. Thoracic tergum I with 2+2 setae. Furca well developed with 5 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M. Subcoxae "2" I, II and III with 0, 1 and 1 setae, respectively. Even anal valves each with one seta hr.

Description. Holotype (female) length 0.78 mm, paratype (female) length 0.85 mm paratypes (juveniles) length 0.51–0.65 mm. Colour in alcohol spotted bluish-grey, ocular plate blue-black.

Antennae shorter than head (about 3/4 the length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two guard sensilla subcylindrical (both of the same size) and two guard setae between them; ventral microsensillum present. Antennal segment IV with ordinary

setae and 6 subcylindrical sensilla; dorsoexternal microsensillum, subapical organite present; apical vesicle trilobated, ventral side with a few blunt setae (Fig. 22).

Postantennal organ (Fig. 23) about 1.75 times larger than ocellus B, bearing 5 vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxillae each with 7 teeth (Fig. 21). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 20 with very short ordinary setae, with longer sensory setae s. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head without setae a0 and sd1, setae c2 and c5 present. Thoracic tergum I with 2+2 setae. Abdominal terga I–IV with seta s = p3. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 5 setae on each dens (Fig. 25). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 2.25. Tenaculum with 3+3 teeth. Males unknown. Even anal valves each with one seta hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal setae, seta M present, seta B7 absent on tibiotarsus III. Femora I, II and III with 11, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 1 and 1 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at half length of its inner edge, with pair of lateral teeth (Fig. 24). Empodial appendage absent.

Type material. Holotype ♀ in MNHN, paratypes 8 juveniles in MNHN, ♀ and 3 juveniles in ISEA.

Type locality. Peru, Brillo Nuevo, region of Rio Ampiyacu, confluence of rivers Zumun and Yahuasyacu, litter in secondary forest of 50 years (= 53 years after clear felling), 27.x.1985, lgt. L. Desutter-Grandcolas.

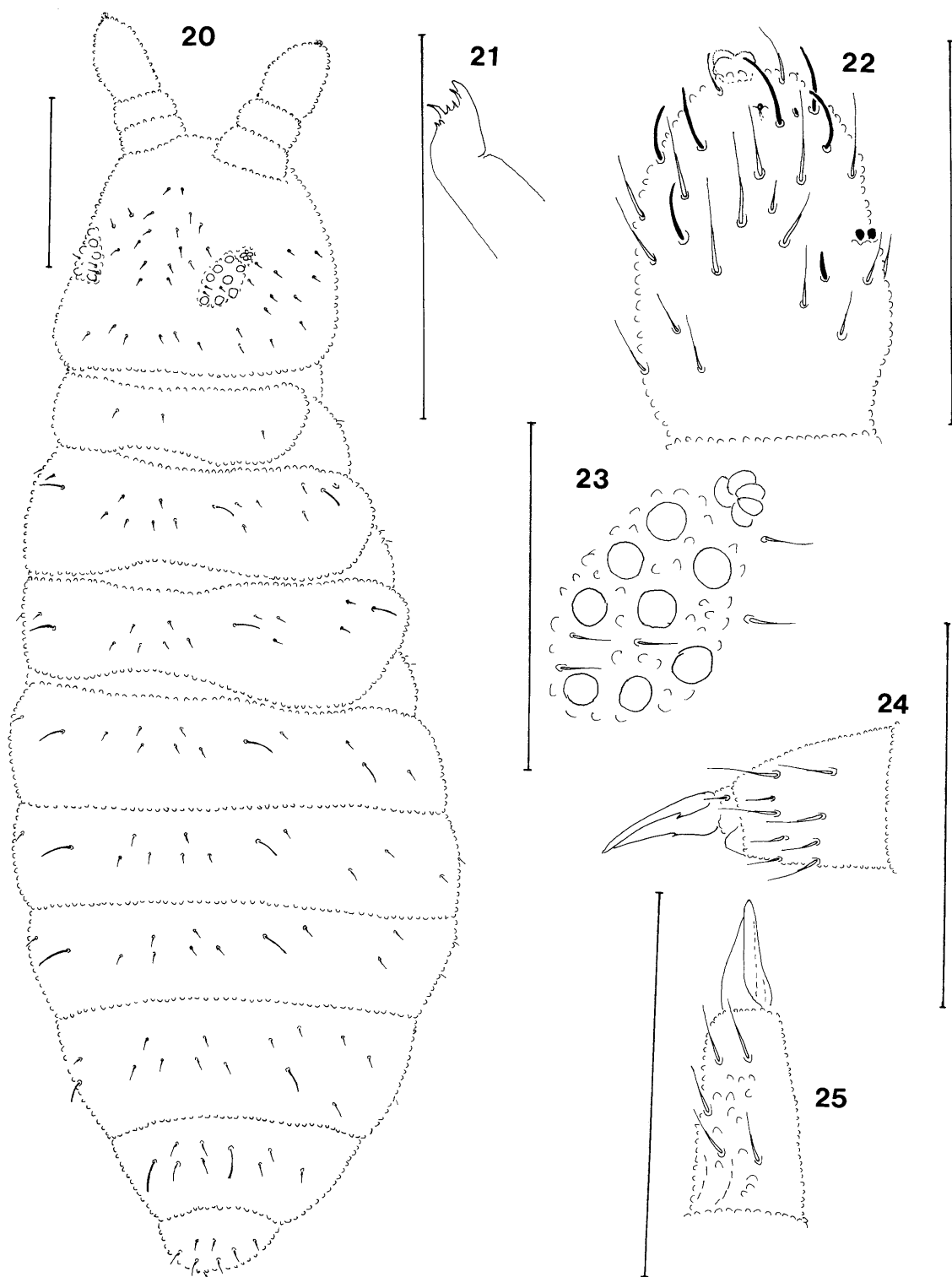
Other material. Peru, Brillo Nuevo, region of Rio Ampiyacu, confluence of rivers Zumun and Yahuasyacu, litter in secondary forest 5 years (= 8 years after clear felling), 7.xi.1985, lgt. L. Desutter-Grandcolas, 7 specimens.

Etymology. The new species is cordially dedicated to our colleague Laure Desutter-Grandcolas of Laboratoire d'Entomologie, Muséum national d'Histoire naturelle in Paris, who kindly collected this material for us.

Discussion. The new species is closest to *B. contorta* Denis, 1931. Both species share the same characters: absence of setae a0, on the head, 2+2 setae on the thoracic tergum I, the same number of setae on the dens (5), the same number of setae on tibiotarsi (19, 19, 18). They differ in the shape of the apical vesicle (simple in *B. contorta* and trilobated in the new species), in the number of setae on femora I (12 in *B. contorta* and 11 in the new species), in the number of setae on subcoxae "2" II and III (2, 2 in *B. contorta* and 1, 1 in the new species), in the number of setae hr on the even anal valves (two on each valve in *B. contorta* and one in the new species).

Brachystomella gabrielae Najt & Palacios-Vargas, 1986

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, (not 19, 18 and 17 as in the original description by Najt & Palacios-Vargas, 1986); seta M present, seta B7 absent on tibio-



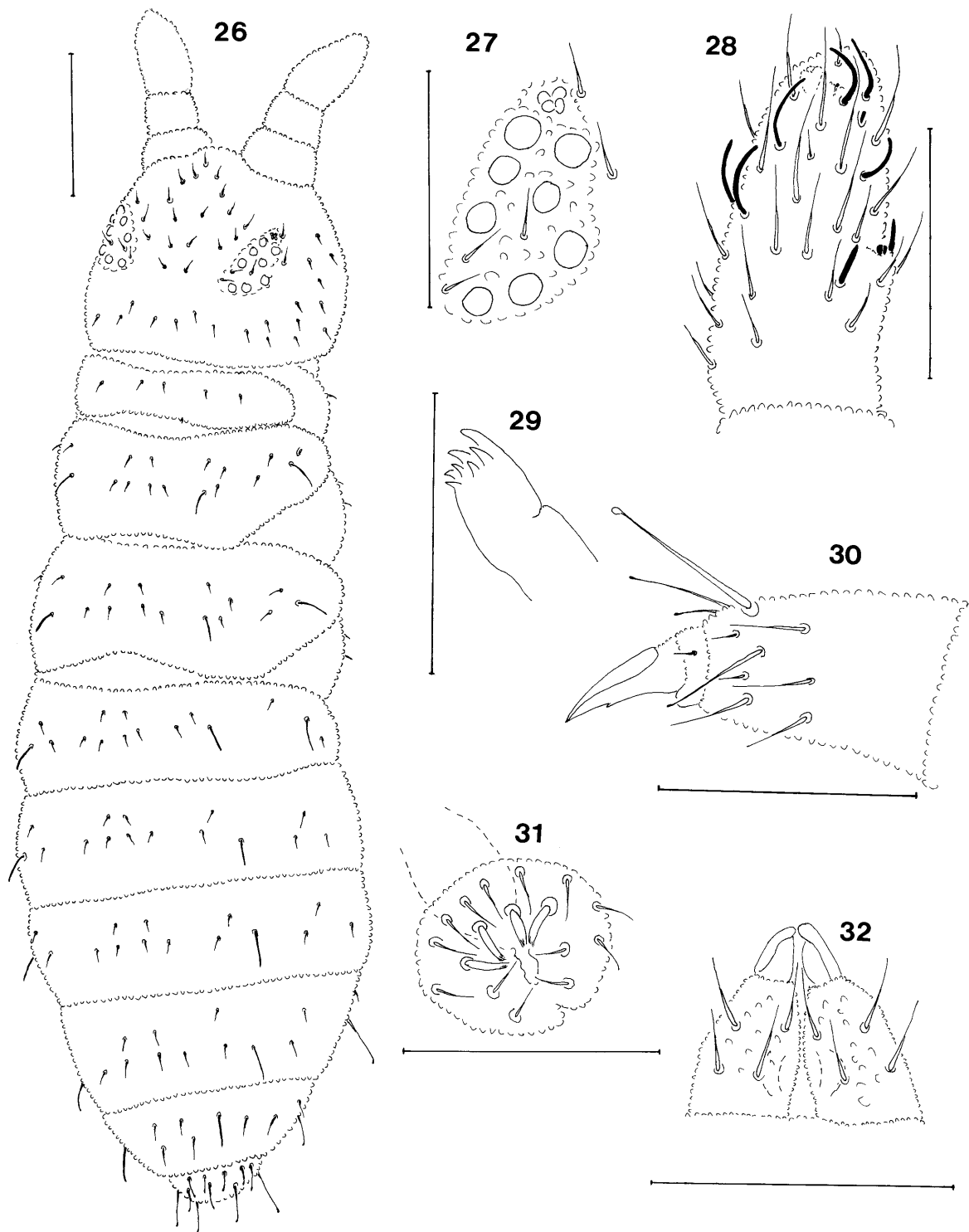
Figs 20–25. *Brachystomella desutterae* sp. n. 20 – dorsal chaetotaxy (scale 0.1 mm); 21 – maxillum (scale 0.05 mm); 22 – antennal segments III and IV, dorsal view (scale 0.05 mm); 23 – postantennal organ and eyes (scale 0.05 mm); 24 – tibiotarsus II (scale 0.05 mm); 25 – dens and mucro (scale 0.05 mm).

tarsus III. Femora I, II and III with 11, 10 and 10 setae, trochanters I, II and III with 5, 5, 4 setae, coxae I, II and III with 4, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

***Brachystomella globulosa* Cassagnau & Rapoport, 1962**

Figs 26–32

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 4 vesicles. 8+8 eyes present. Short ordinary setae, some mesochaetae, some serrated and slightly capitate setae on



Figs 26–32. *Brachystomella globulosa* Cassagnau & Rapoport, 1962. 26 – dorsal chaetotaxy (scale 0.1 mm); 27 – postantennal organ and eyes (scale 0.05 mm); 28 – antennal segments III and IV, dorsal view (scale 0.05 mm); 29 – maxillum (scale 0.05 mm); 30 – tibiotarsus III (scale 0.05 mm); 31 – male genital plate (scale 0.05mm); 32 – dens and mucro (scale 0.05 mm).

abdominal segment VI, formula of sensory setae s per half tergum: 022/21111. Head with seta a0, c2 and c5 present, seta d4 absent. Thoracic tergum I with 3+3 setae. Short furca with 4 setae on each dens. Mucro with hooked apex. Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively, of which 3, 4 and 4 capitate. Subcoxae

“2” I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with two setae hr.

Redescription. Antennae shorter than head (about 3/4 the length of head). Antennal segment I with 7 setae, antennal segment II with 11–12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two

small internal sensilla globular distally, two subcylindrical guard sensilla (dorsolateral sensillum somewhat shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather long ordinary setae, with 6 only slightly distinct subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapical organite present; apical vesicle slightly trilobed in deep cavity, ventral side with a few truncated setae. (Fig. 28).

Postantennal organ (Fig. 27) almost as large as ocellus B, bearing four vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 7 teeth (Fig. 29). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 26 with short ordinary setae, some mesochaetae, some slightly serrated and slightly capitate setae on abdominal segment VI, with long sensory setae s. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head with setae a0, c2 and c5, seta d4 absent. Thoracic tergum I with 3+3 setae. Abdominal terga I–IV with seta s = p4. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Short furca with four setae on each dens (Fig. 32). Mucro with hooked apex. Ratio mucro : dens = 1 : 2.1. Tenaculum with 3+3 teeth. Male with secondary sexual characters on genital papilla (Fig. 31). Even anal valves each with two setae hr.

Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively, of which 3, 4 and 4 capitate (not 3, 3 and 3 as in the original description by Cassagnau & Rapoport, 1962), seta A1 (the strongest one), A2 (acuminate on tibiotarsus I), A7 and T2 capitate, without seta M, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at 2/3 length of its inner edge, without lateral teeth (Fig. 30). Empodial appendage absent.

Type material. Lectotype ♂, paralectotypes juvenile ♀ and 2 juveniles presently designated, in MNHN.

Type locality. Argentina, province of Tucuman, south of Tapia, under bark, 20.iv.1959, lgt. Cl. Delamare Deboutteville and E.H. Rapoport.

Discussion. *Brachystomella globulosa* Cassagnau & Rapoport, 1962 possesses short furca like *B. villalobosi* Cassagnau & Rapoport, 1962, *B. barrerai* Palacios-Vargas & Najt, 1981 and *B. minimucronata* Palacios-Vargas & Najt, 1981 (with very reduced mucro). All these species have some capitate setae on the body, 2–4 capitate setae on tibiotarsi. *B. globulosa* has the same number of capitate setae on tibiotarsi I, II and III (3, 4 and 4) like *B. barrerai* and *B. minimucronata* (2, 3 and 3 in *B. villalobosi*). It differs in the number of setae on each dens (4 in *B. globulosa*, and 3 in the other species) and in the number of setae hr on the even valves (two in *B. globulosa* and three in the all other species).

Brachystomella grootaerti Najt, Thibaud & Jacquemart, 1991

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively (not 18, 18 and 17 as in the original description by Najt et al., 1991); seta M present, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with two setae hr.

Brachystomella mataraniensis sp. n.

Figs 33–39

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 4 vesicles. 8+8 eyes present. Very short ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head with setae a0, c3 and c5. Thoracic tergum I with 3+3 setae. Furca well developed with 6 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M almost in row B. Subcoxae "2" I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

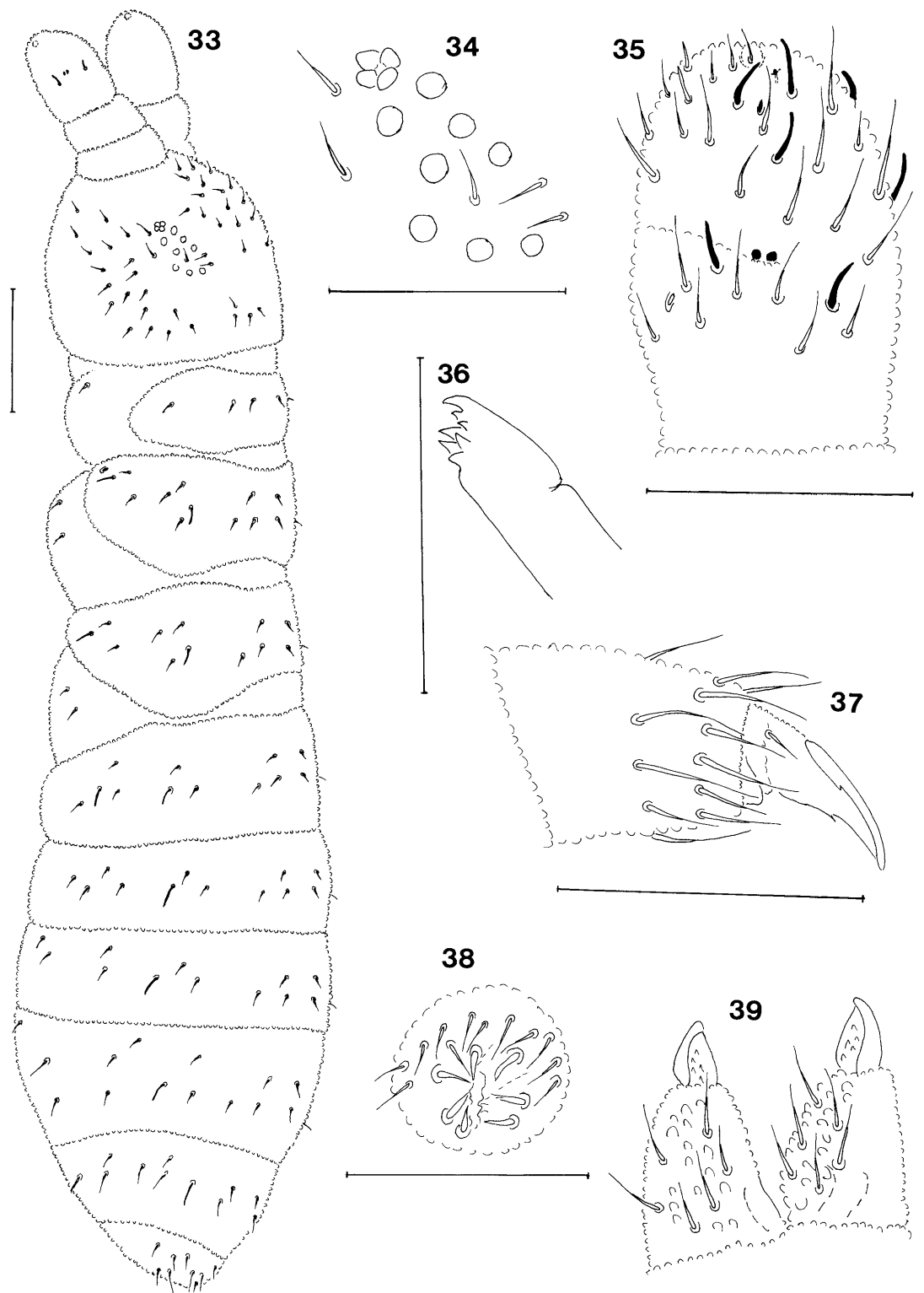
Description. Holotype (female) length 0.98 mm, paratypes (females) length 0.86–1.0 mm, paratypes (juvenile males) length 0.60 mm and 0.65 mm. Colour in alcohol bluish-grey, ocular plate blue-black. Entire body coarsely granulated.

Antennae shorter than head (about 3/4 length of head). Antennal segment I with 7 setae (sometimes asymmetrical: 6 or 8 on one antenna), antennal segment II with 12 setae (also asymmetrical: 11 or 13 setae). Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two rather short subcylindrical guard sensilla (both of the same size) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather short ordinary setae, with 6 distinct subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapical organite present; apical vesicle simple, ventral side with a few blunt setae (Fig. 35).

Postantennal organ (Fig. 34) almost two times larger than ocellus B, bearing 4 vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 7 teeth (Fig. 36). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 33 with very short ordinary setae, with longer sensory setae s. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head with setae a0, c3 and c5 present. Thoracic tergum I with 3+3 setae. Abdominal terga I–IV with seta s = p4. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum I with 0+0 setae, abdominal sternum II with 1+1 setae.

Furca well developed with 6 setae on each dens (Fig. 39). Mucro straight with apex slightly hooked. Ratio



Figs 33–39. *Brachystomella mataraniensis* sp. n. 33 – dorsal chaetotaxy (scale 0.1 mm); 34 – postantennal organ and eyes (scale 0.05 mm); 35 – antennal segments III and IV, dorsolateral view (scale 0.05 mm); 36 – maxillum (scale 0.05 mm); 37 – tibiotarsus III (scale 0.05 mm); 38 – male genital plate (scale 0.05mm); 39 – dens and mucro (scale 0.05 mm).

mucro : dens = 1 : 2. Tenaculum with 3+3 teeth. Males with secondary sexual characters on genital papilla (Fig. 38). Even anal valves each with three setae hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal seta; seta M in row B, seta

B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 (asymmetry: 3 or 4), and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae,

respectively. Claw with inner tooth at half length of its inner edge, with pair of lateral teeth (Fig. 37). Empodial appendage absent.

Type material. Holotype ♀ in MNHN, paratypes: 7 ♀♀, 1 juvenile ♂ in MNHN; 3 ♀♀ and 1 juvenile ♂ in ISEA.

Type locality. Peru, Matarani, El Camino, 23.ix.1974, lgt. J. Péfaur.

Other material. Peru, Matarani, Platanillo II, 16.vii.1974, 2 specimens, 23.ix.1974, lgt. J. Péfaur, 11 specimens.

Etymology. The name of the new species is derived from the type locality.

Discussion. Of the species of *Brachystomella*, with four vesicles in the postantennal organ, the new species is closest to *Brachystomella victoriensis* from Argentina (Izarra, 1972). The two species differ in the shape of the apical vesicle (trilobated in the new species and simple in *B. victoriensis*), in the number of setae on femora I, II and III (12, 11 and 10 in the new species and 13, 12 and 11 in *B. victoriensis*), and in the presence of two long setae curved at the tip on the tibiotarsi in *B. victoriensis*.

Brachystomella mauriesi Thibaud & Massoud, 1983

Remarks. This species has the maxilla typical for the genus (not as in Thibaud & Massoud, 1983: Fig. 1B); however, the distal tooth is very prominent. The entire type material is badly preserved and therefore we are unable to comment more extensively.

Brachystomella minimucronata Palacios-Vargas & Najt, 1981

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively, of which 3, 4 and 4 capitate (not 4, 4 and 4 as in the original description by Palacios-Vargas & Najt, 1981); A1, A7, T2 capitate on tibiotarsus I, setae A1, A2, A7, T2 capitate on tibiotarsi II and III, seta M absent, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Brachystomella montebella Najt & Palacios-Vargas, 1986

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla, ventral sensillum longer than dorsal one. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively (not 18, 18 and 17 as in the original description by Najt & Palacios-Vargas, 1986); seta M present, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 9 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with one seta hr.

Brachystomella nana Rubio & Najt, 1979

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively (not 15, 15

and 14 as in the original description by Rubio & Najt, 1979); seta M present, seta B7 absent on tibiotarsus III. Femora I, II and III with 12?, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 2, 3 and 3 setae, subcoxae "2" I, II and III with 0, 1 and 1 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Brachystomella neomexicana (Scott, 1960)

Neanurodes neomexicanus Scott, 1960

Brachystomella arida Christiansen & Bellinger, 1980

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively; seta A1 slightly capitate, seta M absent, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Brachystomella pefauri sp. n.

Figs 40–51

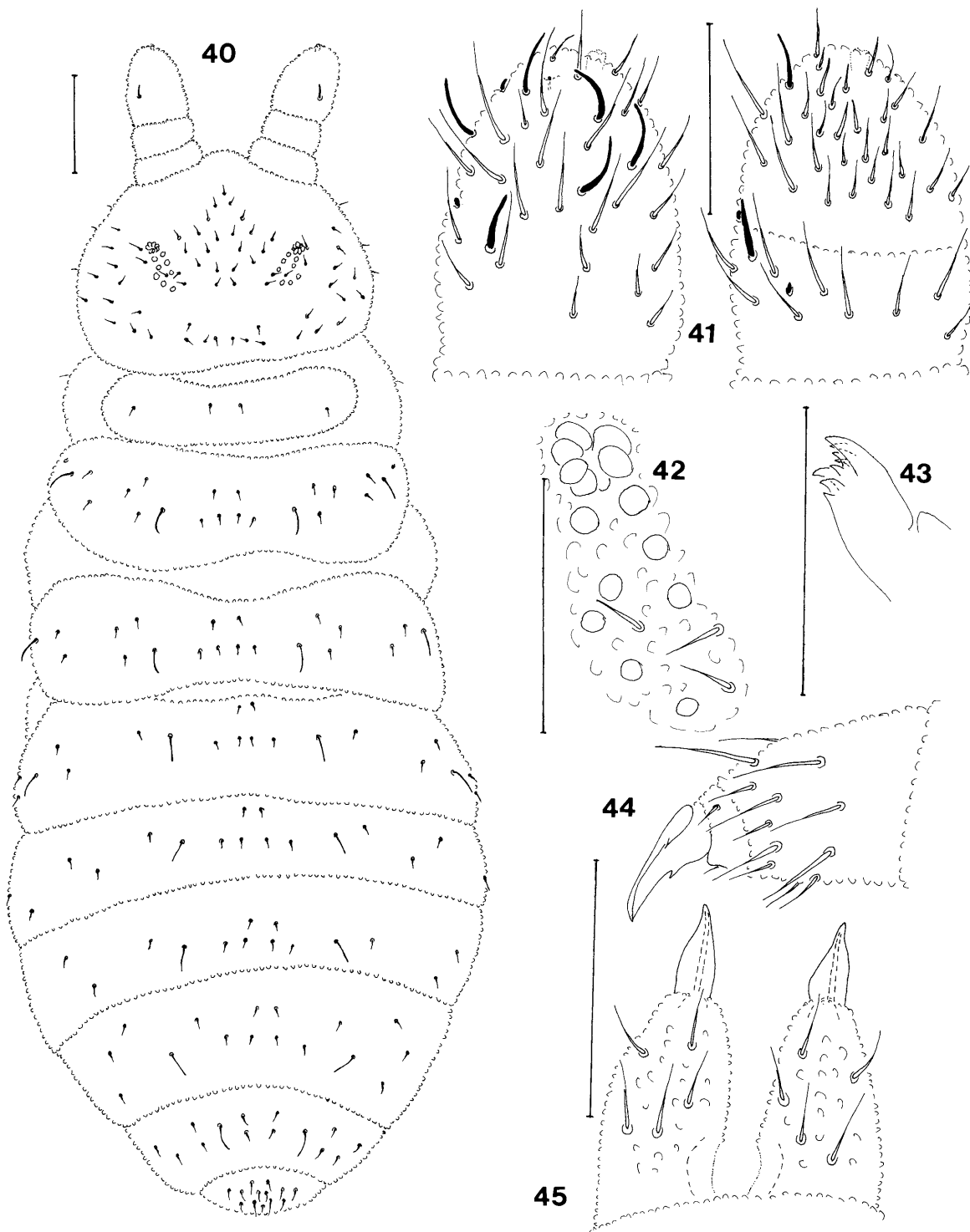
Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 7 vesicles. 8+8 eyes present. Very short ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head with setae a0, c3 and c5. Thoracic tergum I with 2+2 setae. Furca well developed with 5 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M present. Subcoxae "2" I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each without setae hr.

Description. Holotype (female) length 1.19 mm, paratypes (females) length 0.83–1.49 mm. Colour in alcohol bluish-grey, ocular plate blue-black.

Antennae shorter than head (about 3/4 length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (both of the same size) and two guard setae between them; ventral microsensillum present. Antennal segment IV with ordinary setae and 6 subcylindrical sensilla; dorsoexternal microsensillum, subapical organite present; apical vesicle slightly trilobated, ventral side with a few truncated setae (Fig. 41).

Postantennal organ (Fig. 42) about 3 times larger than ocellus, bearing 7 vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxillae each with 8 teeth (Fig. 43). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 40 with very short ordinary setae, with longer sensory setae s. Their formula per half tergum: 022/21111. Microsensilla on thoracic tergum II present. Head with setae a0, c3 and c5. Thoracic tergum I with 2+2 setae. Abdominal terga I–IV with seta s = p3. Thoracic sternum without setae. Ventral tube with 3+3



Figs 40–51. *Brachystomella pefauri* sp. n. 40 – dorsal chaetotaxy (scale 0.1 mm); 41 – antennal segments III and IV, dorsal and ventral views (scale 0.05 mm); 42 – postantennal organ and eyes (scale 0.05 mm); 43 – maxillum (scale 0.05 mm); 44 – tibiotarsus III (scale 0.05 mm); 45 – dens and mucro (scale 0.05 mm).

setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 5 setae on each dens (Fig. 45). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 2.25. Tenaculum with 3+3 teeth. Males unknown. The even anal valves each without setae hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal setae, seta M present. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae,

respectively. Claw with inner tooth at half length of its inner edge, with a pair of lateral teeth (Fig. 44). Empodial appendage absent.

Type material. Holotype ♀ in MNHN, paratypes 4 ♀♀ and 1 juvenile in MNHN; 1 ♀ in ISEA.

Type locality. Venezuela, Mérida, La Parroquia, 1,100 m a.s.l., soil in a private garden, 11.v.1980, lgt. J. Péfaur.

Etymology. The new species is cordially dedicated to J. Péfaur, Professor at the University of "Los Andes" in Mérida (Venezuela), who kindly collected the material for us.

Discussion. The new species is most similar to two species: *B. saladaensis* sp. n. and *B. taxcoama* Palacios & Najt, 1981 (see discussion in *B. saladaensis* sp. n.).

Brachystomella platensis Najt & Massoud, 1974

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, of which 3, 4 and 4 capitate (not 3, 3 and 3 as in the original description by Najt & Massoud, 1974), seta M present, seta B7 absent on tibiotarsus III. Setae A1, A2 and A7 slightly capitate on tibiotarsus I, setae A1, A2, A7 and T2 slightly capitate on tibiotarsi II and III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with two setae hr.

Brachystomella purma sp. n.

Figs 46–51

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with four vesicles. 8+8 eyes present. Very short ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head with setae a0, c3 and c5, setae d5 and sd1 absent. Thoracic sterna without setae. Furca well developed with 5 setae on each dens. Mucro straight. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M almost in row B. Subcoxa "2" I, II and III with 0, 1 and 1 seta respectively. Even anal valves each with one seta hr each.

Description. Holotype (female) length 0.47 mm, paratypes (females) length 0.51–0.65 mm, paratypes (juvenile) length 0.37–0.47 mm, other females 0.51–0.78 mm. Colour in alcohol bluish-grey, ocular plate blue-black. Entire body coarsely granulated.

Antennae shorter than head (more than 3/4 length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small curved internal sensilla, two subcylindrical guard sensilla (dorsolateral sensillum shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with ordinary setae, with 6 distinct subcylindrical sensilla; dorsoexternal microsensillum, subapical organite present; apical vesicle trilobated, ventral side with a few blunt setae (Fig. 47).

Postantennal organ (Fig. 48) almost 2.4 times larger than ocellus B, bearing 4 vesicles (2 anterior vesicles larger than posterior ones). Eyes 8+8. Buccal cone typical

for the genus. Mandible absent, maxilla with 6 teeth (Fig. 49). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 46 with short ordinary setae, with longer sensory setae s. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head with setae a0, c3 and c5, setae d5 and sd1 absent. Thoracic tergum I with 2+2 setae. Abdominal terga I–IV with setae s = p3. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 5 setae on each dens (Fig. 51). Mucro straight. Ratio mucro : dens = 1 : 1.95. Tenaculum with 3+3 teeth. Males unknown. Even anal valves each with one seta hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal setae, with seta M present between setae B4 and B5, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, respectively, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 1 and 1 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth in the middle of its inner edge, with a pair of lateral teeth (Fig. 50). Empodial appendage absent.

Type material. Holotype ♀ in MNHN, paratypes ♀ and 2 juveniles in MNHN, ♀ and 1 juvenile in ISEA.

Type locality. Peru, Estiron, Rio Ampiyacu, soil in secondary forest ("purma") of 9 years, xii.1983, lgt. Ch. Amedegnato & S. Poulain.

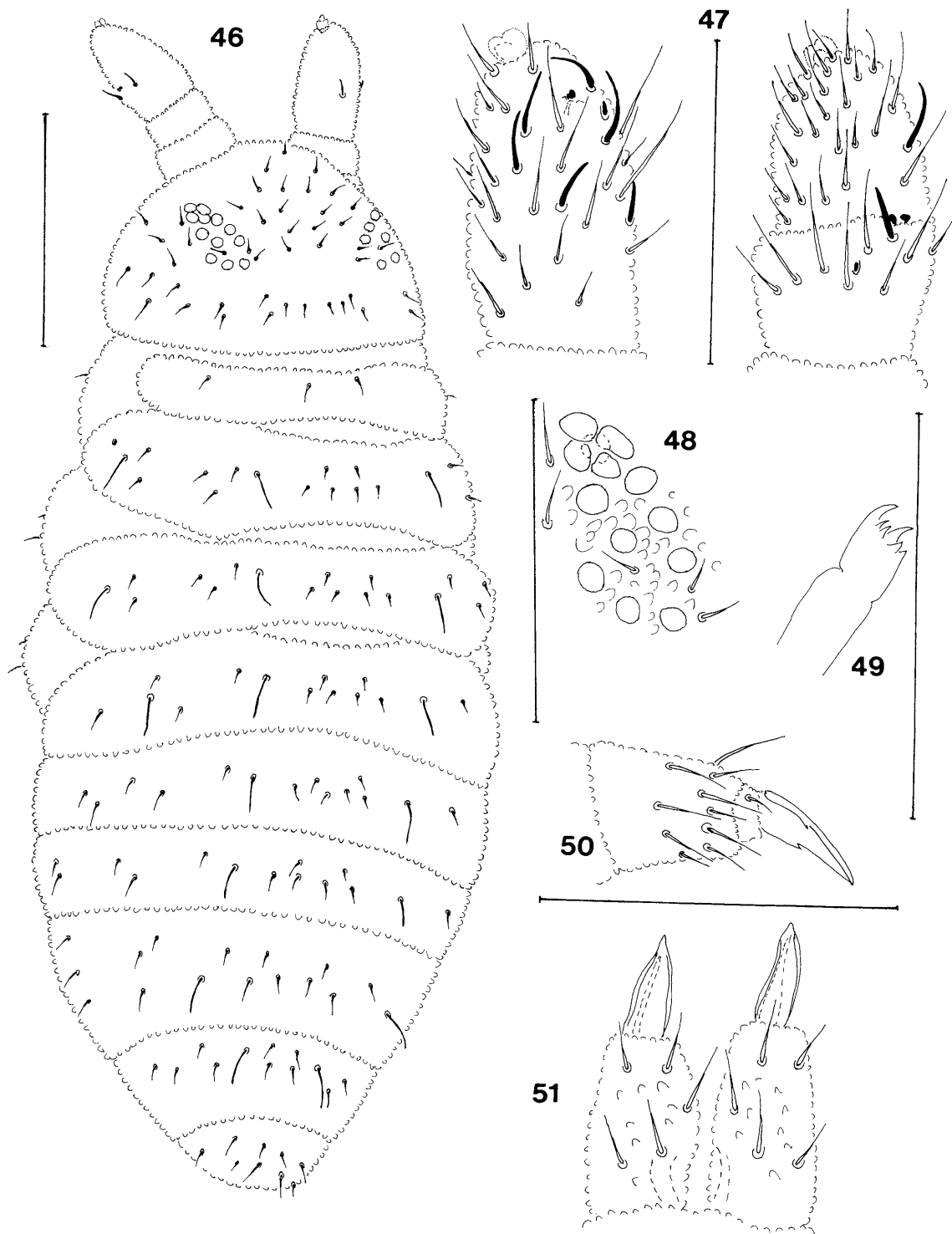
Other material. Peru, Estiron, Rio Ampiyacu, litter of secondary forest of over 30 years, i.1984, lgt. Ch. Amedegnato & S. Poulain, 5 specimens.

Etymology. The name of the new species is derived from the name for secondary forest - "purma".

Discussion. The new species is closest to *B. agrosa* Wray, 1953 described from Puerto Rico. They possess the same number of vesicles in postantennal organ (4), the same number of setae on thoracic tergum I (2+2), the same number of setae on the dens (5), the same sensillar formula (022/21111), the same number of setae on tibiotarsi I, II and III (19, 19 and 18) and seta a0 on the head. The two species differ in the shape of the apical vesicle on antennal segment IV (simple in *B. agrosa* and trilobated in the new species), in the number of setae hr (two setae in *B. agrosa* and one seta in the new species), and in size (1–1.5 mm for *B. agrosa* and 0.47–0.65 mm for the new species).

Brachystomella ronderosi Najt, 1973

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla, dorsolateral sensillum somewhat shorter than ventrolateral one. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively; setae A1, A2, A4, A5, A7, B4 and B5 slightly capitate; seta M present, seta B7 absent on tibiotarsus III. Femora I, II and III with 13, 12 and 11 setae, trochanters I, II and III with 6, 6 and 6 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 3 and 3 setae, respectively. Chaetotaxy of abdominal tergum V with a1 and p1 (not as in



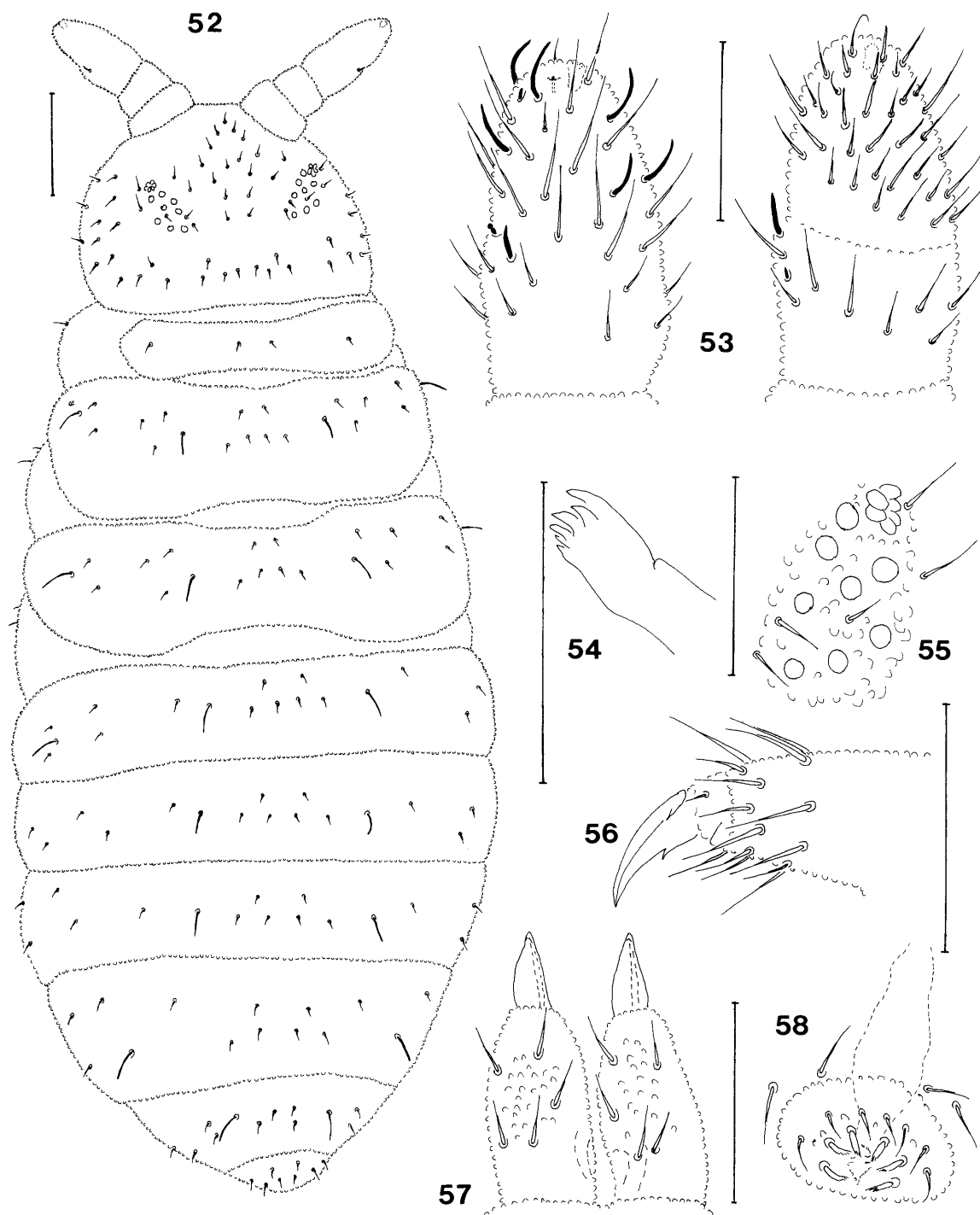
Figs 46–51. *Brachystomella purma* sp. n. 46 – dorsal chaetotaxy (scale 0.1 mm); 47 – antennal segments III and IV, dorsal and ventral views (scale 0.05 mm); 48 – postantennal organ and eyes (scale 0.05 mm); 49 – maxillum (scale 0.05 mm); 50 – tibiotarsus III (scale 0.05 mm); 51 – dens and mucro (scale 0.05 mm).

Fig. 13 in Weiner & Najt, 1997). Even anal valves each with three setae hr.

***Brachystomella saladaensis* sp. n.**

Figs 52–58

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 6 vesicles. 8+8 eyes present. Very short ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head with setae a0, c3 and c5, sd1 absent. Thoracic tergum I



Figs 52–58. *Brachystomella saladaensis* sp. n. 52 – dorsal chaetotaxy (scale 0.1 mm); 53 – antennal segments III and IV, dorsal and ventral views (scale 0.05 mm); 54 – maxillum (scale 0.05 mm); 55 – postantennal organ and eyes (scale 0.05 mm); 56 – tibiotarsus I (scale 0.05 mm); 57 – dens and mucro (scale 0.05 mm); 58 – male genital plate (scale 0.05 mm).

with 2+2 setae. Furca well developed with 5 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M. Subcoxae “2” I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with two setae hr.

Description. Holotype (female) length 1.07 mm, paratypes (females) length 0.81–1.16 mm, paratypes (males) length 0.67–0.86 mm. Colour in alcohol bluish-grey, ocular plate blue-black. Entire body moderately granulated.

Antennae shorter than head (about 3/4 length of head). Antennal segment I with 7 setae, antennal segment II with

12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (dorsolateral sensillum somewhat shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with ordinary setae and 6 distinct subcylindrical sensilla; dorsoexternal microsensillum, subapical organite present; apical vesicle trilobated, ventral side with a few blunt setae (Fig. 53).

Postantennal organ (Fig. 55) 2.5 times larger than ocellus, bearing 6 vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 7 teeth (Fig. 54). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 52 with very short ordinary setae, with longer sensory setae *s*. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head without setae *a0*, *c3* and *c5*, setae *sd1* absent. Thoracic tergum I with 2+2 setae. Abdominal terga I–IV with setae *s* = *p3*. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 5 setae on each dens (Fig. 57). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 2.6. Tenaculum with 3+3 teeth. Males with secondary sexual characters on genital papilla (Fig. 58). Even anal valves each with two setae *hr*.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, acuminate distal setae, with seta *M* present, seta *B7* absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at 1/3 length of its inner edge, with pair of lateral teeth (Fig. 56). Empodial appendage absent.

Type material. Holotype ♀ in MNHN, paratypes 1♂ and 6 ♀♀ in MNHN; 1 juvenile ♀ and 3 ♀♀ in ISEA.

Type locality. Argentina, Chascomus, province of Buenos Aires, litter on the shore of lake Salada Grande, 12.viii.1968, lgt. J. Snack & L. Bulla.

Etymology. The name of new species is derived from the type locality.

Discussion. The new species shares some characters with *B. taxcoana* Palacios-Vargas & Najt, 1981. Both have the same number of setae on the head, including seta *a0*, the same number of setae on the dens (5), the same number of setae on tibiotarsi (19, 19 and 18) and the apical vesicle on antennal segment IV is trilobated. They differ in the number of setae *hr* on the even anal valves (3 in *B. taxcoana*, 2 in *B. saladaensis*), in the ratio mucro : dens (1 : 2.12 in *B. taxcoana* and 1 : 2.6 in the new species), in the size of guard sensilla in the sensory organ of antennal segment III (long sensilla in *B. taxcoana*, with ventrolateral sensillum somewhat longer than the guard seta and short in the new species, with ventrolateral sensillum shorter than the guard seta).

Brachystomella septemocolata Denis, 1931

Figs 59–64

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with five vesicles. 7+7 eyes present. Very short ordinary setae, formula of sensory setae *s* per half tergum: 022/21111. Head without setae *a0*, *sd1* and *sd4*, setae *c3* and *c5*, one medial seta *dx* present. Thoracic tergum with 2+2 setae. Furca well developed with 5 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta *M* almost in row *B*. Subcoxae “2” I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with two setae *hr*.

Redescription. Antennae shorter than head (about 3/4 length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (dorsolateral sensillum shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather short ordinary setae, with 5 distinct subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapical organite present; apical vesicle simple, ventral side with a few blunt setae (Fig. 62).

Postantennal organ (Fig. 60) almost three times larger than ocellus *B*, bearing 5 vesicles. Eyes 7+7, ocellus *H* absent. Buccal cone typical for the genus. Mandible absent, maxilla with 8 teeth (Fig. 61). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 59 with very short ordinary setae, with longer sensory setae *s*. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head without setae *a0*, *sd1* and *sd4*, setae *c3* and *c5*, one medial seta *dx* present. Thoracic tergum I with 2+2 setae. Abdominal terga I–IV with seta *s* = *p3*. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 5 setae on each dens (Fig. 64). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 2.2. Tenaculum with 3+3 teeth. Males unknown. Even anal valves each with two setae *hr*.

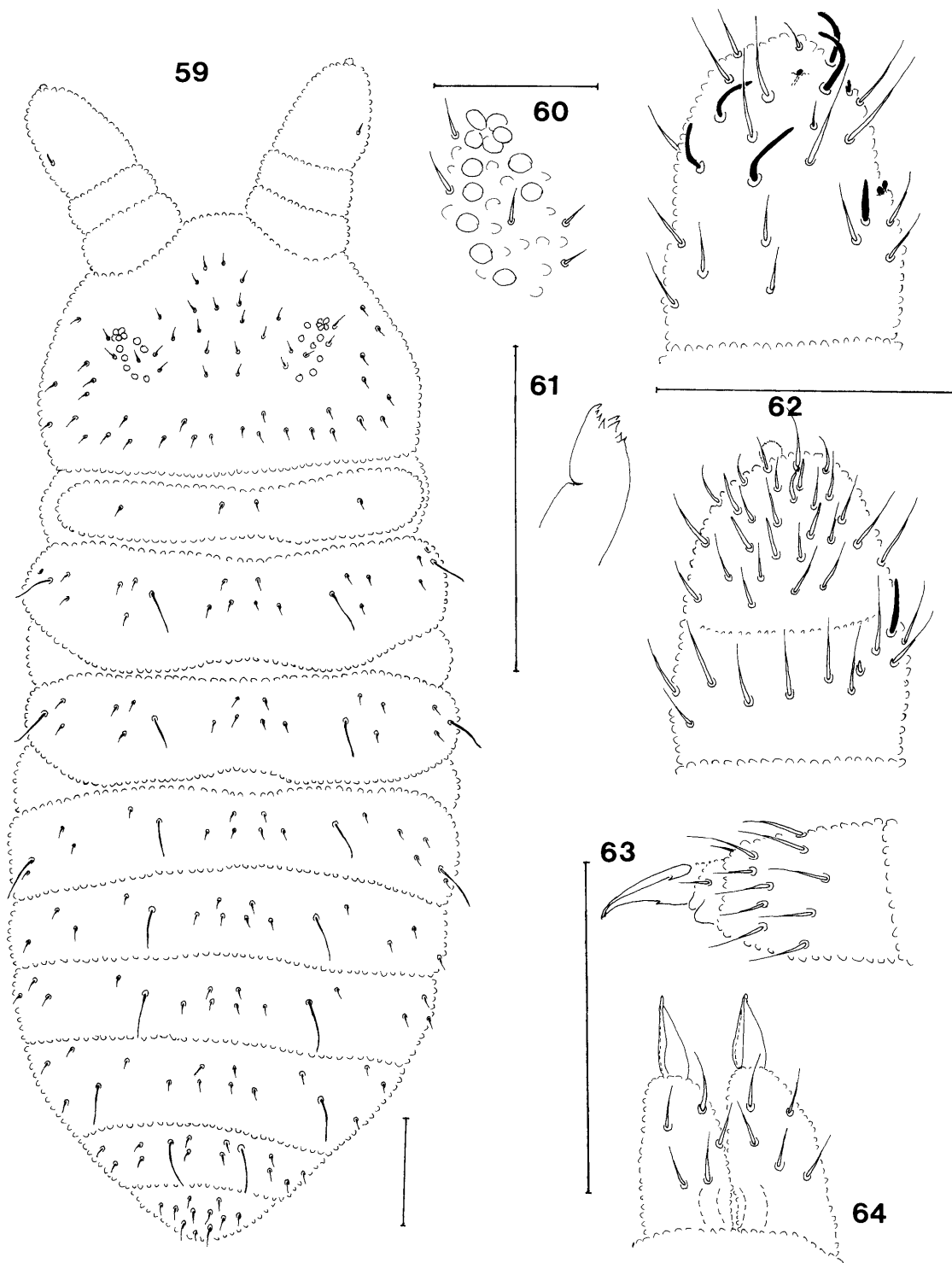
Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal seta; seta *M* between setae *B4* and *B5*, seta *B7* absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae “2” I, II and III with 0, 2 and 2 setae, subcoxae “1” I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at 1/3 length of its inner edge, with pair of lateral teeth (Fig. 63). Empodial appendage absent.

Type material. Not present in the collection of Laboratoire d'Entomologie, MNHN in Paris.

Type locality. Costa Rica, Tuis, xi. 1912, lgt. J.Fig. Tristan (Denis: 1931).

Other locality. Costa Rica, La Palma, xi.1931. lgt. J.Fig. Tristan, 3 specimens, Mexico, Veracruz, Teocelo, forest litter, 8.vi.1985, lgt. J. Boudinot, 6 specimens.

Discussion. Of the species of *Brachystomella*, without seta *a0* on the head and with 5 setae on the dens, *Brachys-*



Figs 59–64. *Brachystomella septemoculata* Denis, 1931. 59 – dorsal chaetotaxy (scale 0.1 mm); 60 – postantennal organ and eyes (scale 0.05 mm); 61 – maxillum (scale 0.05 mm); 62 – antennal segments III and IV (scale 0.05 mm); 63 – tibiotarsus I (scale 0.05 mm); 64 – dens and mucro (scale 0.05 mm).

tomella septemoculata is closest to *Brachystomella contorta*, described also from Costa Rica. The two species differ in the number of eyes (7+7 in *B. septemoculata* and 8+8 in *B. contorta*) and in the shape of the mucro (straight with apex slightly hooked in *B. septemoculata* and bent in *B. contorta*).

***Brachystomella stachi* Mills, 1934**

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla, dorsolateral sensillum shorter than ventrolateral one. Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively; seta M absent, seta B7 absent on tibiotarsus III. Femora I, II and III with 11, 11 and 10 setae, trochanters I, II and III with 5, 5 and

4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "1" I, II and III with 0, 2 and 2 setae, subcoxae "2" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Brachystomella taxcoana Palacios-Vargas & Najt, 1981

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla, dorsolateral sensillum shorter than ventrolateral one. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively; seta M present, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "1" I, II and III with 0, 2 and 2 setae, subcoxae "2" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Brachystomella tuberculata (Wahlgren, 1906)

Chondracherutes tuberculatus Wahlgren, 1906
Figs 65–70

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with four vesicles. 8+8 eyes present. Strong ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head without seta a0, setae c1 and c5 present. Thoracic tergum I with 4+4 setae. Furca well developed with 6 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M. All setae in rows A, T; setae B2–B7 and M slightly bent and slightly capitate. Seta B1 straight and acuminate. Subcoxae "2" I, II and III with 1, 3–4 and 3–4 setae, respectively. Even anal valves each with two setae hr.

Redescription. Colour in alcohol (at present) violet with lighter antennae, legs and ventral side, and ocular plate black (in original description: "Farbe dunkelblau. Die helle Grundfarbe leuchtet in zwei unvollständigen Längsbändern, die auf dem Kopfe winkelig zusammenstossen, hervor. Augenflecke schwarz. Unterseite und Beine lichter."). Entire body strongly granulated.

Antennae shorter than head (about 2/3 length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular, slightly bent internal sensilla, two subcylindrical guard sensilla (dorsolateral sensillum somewhat shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with long ordinary setae and 6 indistinct sensilla; dorsoexternal microsensillum, subapical organite present; apical vesicle fairly simple, ventral side with a few blunt setae (Fig. 67).

Postantennal organ (Fig. 68) 2.5 times larger than ocellus, bearing four vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 6 teeth (Fig. 66). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 65 with very strong ordinary setae, with longer sensory setae s. Their formula per half tergum: 022/21111. Microsensilla on thoracic tergum II present. Head with setae a0, c1 and c5 present. Tho-

racic tergum I with 4+4 setae. Abdominal terga I–IV with setae s = p4. Thoracic sternum without setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 3+3 setae.

Furca well developed with 6 setae on each dens (Fig. 70). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 1.7. Tenaculum with 3+3 teeth. Males unknown. Even anal valves each with two setae hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with seta M present, seta B7 absent on tibiotarsus III. All setae in row A, T and setae B2–B7 and M bent and slightly capitate. Seta B1 straight and acuminate. Femora I, II and III with 12, 12 and 10 setae, trochanters I, II and III with 6, 6 and 5 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 3–4 and 3–4 setae, respectively. Claw with inner tooth at 1/3 length of its inner edge, with pair of lateral, strong teeth (Fig. 69). Empodial appendage absent.

Type material. Lectotype ♀, paralectotype in alcohol presently designated, in Natur historiska Riksmuseet (Stockholm, Sweden).

Type locality. Falklands Is., Murray Heights near Port Stanley, 22.ii.1902, lgt. Svenska Sydpolsexped.

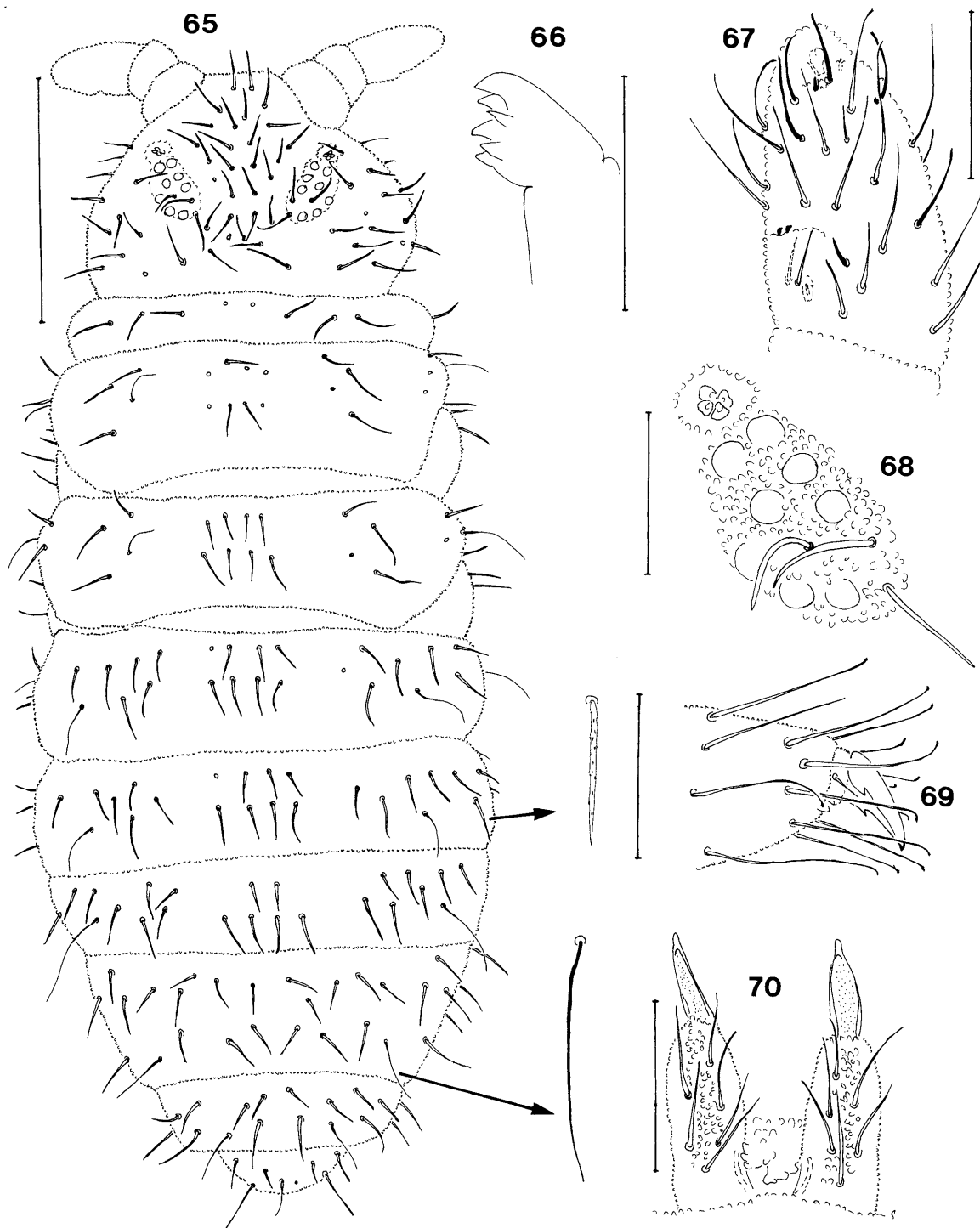
Discussion. *Brachystomella tuberculata* is quite exceptional among the species from the Neotropical region; it differs in the presence of 4+4 setae on thoracic tergum I and the number of setae on subcoxae A "1" II and III (3–4). It shares the first character with four species from the Australian region: *B. ultima* Greenslade & Najt, 1987, *B. disputa* Greenslade & Najt, 1987, *B. solidaria* Greenslade & Najt, 1987, *B. diana* Greenslade & Najt, 1987 and with one species from the South African region: *B. coatsi* Weiner & Najt, 1991. Four of them (excluding *B. ultima*) differ from *B. tuberculata* in the absence of seta a2 on thoracic tergum III (present in *B. tuberculata* and *B. ultima*). *B. tuberculata* and *B. ultima* differ in the number of vesicles in the postantennal organ (4 in *B. tuberculata* and 7–8 in *B. ultima*), in the presence of: setae from m-row of thoracic segments II and III in *B. ultima* (absent in *B. tuberculata*), long, bent and slightly capitate setae on tibiotarsi I–III and a pair of lateral teeth on the claw (the last two characters absent in *B. ultima*).

Brachystomella victoriensis Izarra, 1972

Figs 71–76

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with four vesicles. 8+8 eyes present. Short ordinary setae, very long setae s, their formula per half tergum: 022/21111. Head with setae a0, c3 and c5. Thoracic tergum with 3+3 setae. Furca well developed with 7 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with short seta M and long setae B4 and B5, curved at tips. Subcoxae "2" I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Redescription. Antennae as long as head. Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation



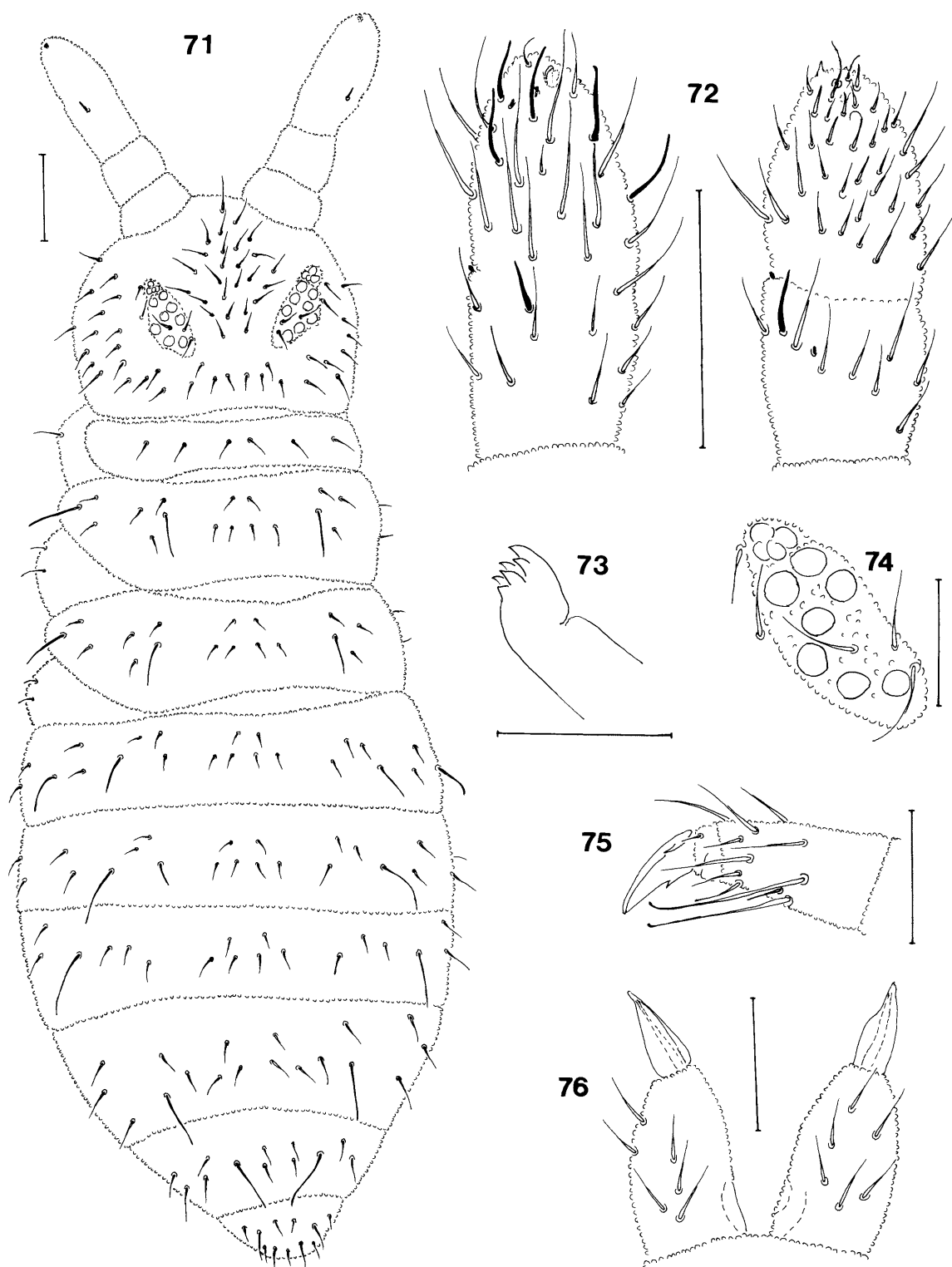
Figs 65–70. *Brachystomella tuberculata* (Wahlgren, 1906). 65 – dorsal chaetotaxy, ordinary seta and sensory seta (scale 0.1 mm); 66 – maxillum (scale 0.1 mm); 67 – antennal segments III and IV, dorsolateral view (scale 0.1 mm); 68 – postantennal organ and eyes (scale 0.1 mm); 69 – tibiotarsus I (scale 0.1 mm); 70 – dens, mucro and tenaculum (scale 0.1 mm).

well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (dorsolateral sensillum somewhat shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather long ordinary setae, with 6 only slightly distinct, long subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapi-

cal organite present; apical vesicle trilobated in deep cavity, ventral side with a few truncated setae (Fig. 72).

Postantennal organ (Fig. 74) almost 1.4 times larger than ocellus B, bearing 4 vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 6 teeth (Fig. 73). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 71 with very short ordinary setae, with sensory setae s longer than the latter. Their



Figs 71–76. *Brachystomella victoriensis* Izarra, 1972. 71 – dorsal chaetotaxy (scale 0.1 mm); 72 – antennal segments III and IV, dorsal and ventral views (scale 0.05 mm); 73 – maxillum (scale 0.05 mm); 74 – postantennal organ and eyes (scale 0.05 mm); 75 – tibiotarsus III (scale 0.05 mm); 76 – dens and mucro (scale 0.05 mm).

formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head with setae a0, setae c3 and c5, sometimes asymmetrical seta sd present. Thoracic tergum I with 3+3 setae. Abdominal terga I–IV with seta s = p4. Thoracic sterna without setae. Ventral tube with

3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 6 setae on each dens (Fig. 76). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 2.72. Tenaculum with 3+3 teeth. Males

with secondary sexual characters: genital plate with 4+4 stout setae near aperture. Even anal valves each with three setae hr.

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal seta; short seta M between long setae B4 and B5, curved at the tip; seta B7 absent on tibiotarsus III. Femora I, II and III with 13, 12 and 11 setae, trochanters I, II and III with 6, 6, and 6 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at 1/3 length of its inner edge, and a pair of lateral teeth (Fig. 75). Empodial appendage absent.

Type material. Holotype ♂ (juvenile), paratypes 2 ♂♂ in Museo de La Plata, Argentina.

Type locality. Argentina, Isla Victoria, in moss, 29.vii.1970, lgt. D. Izarra.

Discussion. *Brachystomella victoriensis* shares some characters with *B. mataraniensis* sp. n. They possess seta a0 on the head and the same number of setae: on thoracic tergum I (3+3), the dens (6), and tibiotarsi (19, 19, 18), as well as the same number of setae hr on each even valve (3). The apical vesicle on antennal segment IV is simple in *B. mataraniensis* and trilobated in *B. victoriensis*. They differ also in the number of setae on femora I, II and III (12, 11 and 10 in *Brachystomella mataraniensis* sp. n. and 13, 12 and 11 in *B. victoriensis*) and on trochanters (5, 5 and 4 in *Brachystomella mataraniensis* sp. n. and 6, 6 and 6 in *B. victoriensis*).

Brachystomella villalobosi Cassagnau & Rapoport, 1962
Figs 77–83

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 4 (3) vesicles. 8+8 eyes present. Very short ordinary setae, some capitate setae on the last abdominal terga, formula of sensory setae s per half tergum: 022/21111. Head with seta a0, setae c2 and c5 present. Thoracic tergum I with 3+3 setae. Reduced furca with 3 setae on each dens. Mucro present. Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively, of which 2, 3 and 3 capitate, without seta M. Subcoxae "2" I, II and III with 0, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Redescription. Antennae shorter than head (about 3/4 length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (dorso-lateral sensillum shorter than ventrolateral one) and two guard seta between them; ventral microsensillum present. Antennal segment IV with rather long ordinary setae, with 6 slightly distinct subcylindrical sensilla; dorsoexternal microsensillum present, truncated subapical organite present; apical vesicle slightly bilobated in deep cavity, ventral side with a few truncated setae (Fig. 79).

Postantennal organ (Fig. 80) almost as large as ocellus B, bearing 4 (3) vesicles. Eyes 8+8. Buccal cone typical for the genus. Mandible absent, maxilla with 6 teeth (Fig. 78). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 77 with mesochaetae and serrated macrochaetae, with long sensory setae s. Their formula per half tergum: 022/21111. Microsensilla on thoracic tergum II present. Head with seta a0, setae c2 and c5 present. Thoracic tergum I with 3+3 setae. Abdominal terga I–III with seta s = p4, abdominal tergum IV with seta s = p3. Thoracic sterna without setae. Ventral tube with 3+3 setae, abdominal sternum II with 1+1 setae.

Reduced furca with 3 setae on each dens (Fig. 82). Mucro with apex slightly hooked. Ratio mucro : dens = 1 : 2.75. Tenaculum with 3+3 teeth. Males with secondary sexual characters on genital papilla (Fig. 83). The even anal valves each with three setae hr.

Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively, of which 2, 3 and 3 capitate setae; seta M absent, seta B7 absent on tibiotarsus III. Setae A1 and A7 capitate on tibiotarsi I and setae A1, A2 and A7 capitate on tibiotarsi II and III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5, 4 setae, coxae I, II and III with 3, 6–7 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 1–2 and 1–2 setae, respectively. Claw with inner tooth at half length of its inner edge, with pair of lateral teeth (Fig. 81). Empodial appendage absent.

Type material. Lectotype ♂, paralectotypes ♂ and ♀ presently designated, in MNHN.

Type locality. Brasil, Recife, Rio Dolce, 19.v.1959, lgt. Cl. Delamare Deboutteville & E. H. Rapoport.

Discussion. *Brachystomella villalobosi* Cassagnau & Rapoport, 1962 is closest to *B. barrerai* Palacios-Vargas & Najt, 1981. They share the same number of the setae on the dens (3), the same shape of mucro and of apical vesicle. They differ in the number of the capitate setae on the tibiotarsus III (2, 3 and 3 in *B. villalobosi* and 3, 4 and 4 in *B. barrerai*), in the number of the setae hr on even anal valves (2 in *B. villalobosi* and 3 in *B. barrerai*).

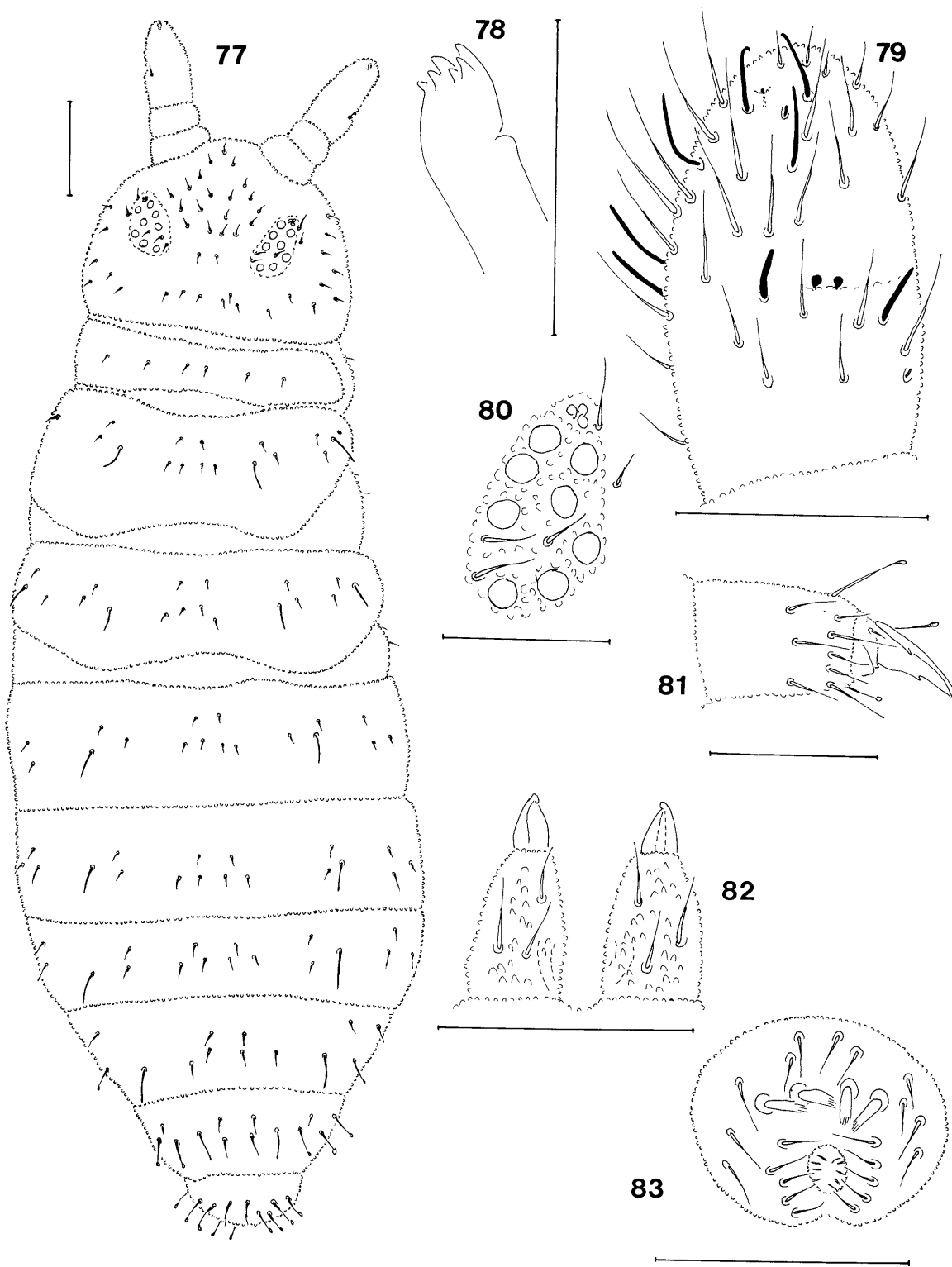
Brachystomella zapatai Najt & Palacios-Vargas, 1986

Remarks. Sensory organ of antennal segment III with two guard setae between guard sensilla. Formula of sensory setae s per half tergum: 022/11111. Tibiotarsi I, II and III with 18, 18 and 17 setae, respectively; seta M absent, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 0, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with three setae hr.

Brachystomella zerpa sp. n.

Figs 84–89

Diagnosis. Habitus and buccal cone typical for the genus *Brachystomella*. Postantennal organ with 5 vesicles. 5+5 eyes present. Very short ordinary setae, formula of sensory setae s per half tergum: 022/21111. Head without setae a0 and sd1, setae c2 and c5 present. Thoracic tergum I with 2+2 setae. Furca well developed with 5 setae on each dens. Mucro straight with apex slightly hooked. Tibiotarsi I, II and III with 19, 19 and 18 setae,



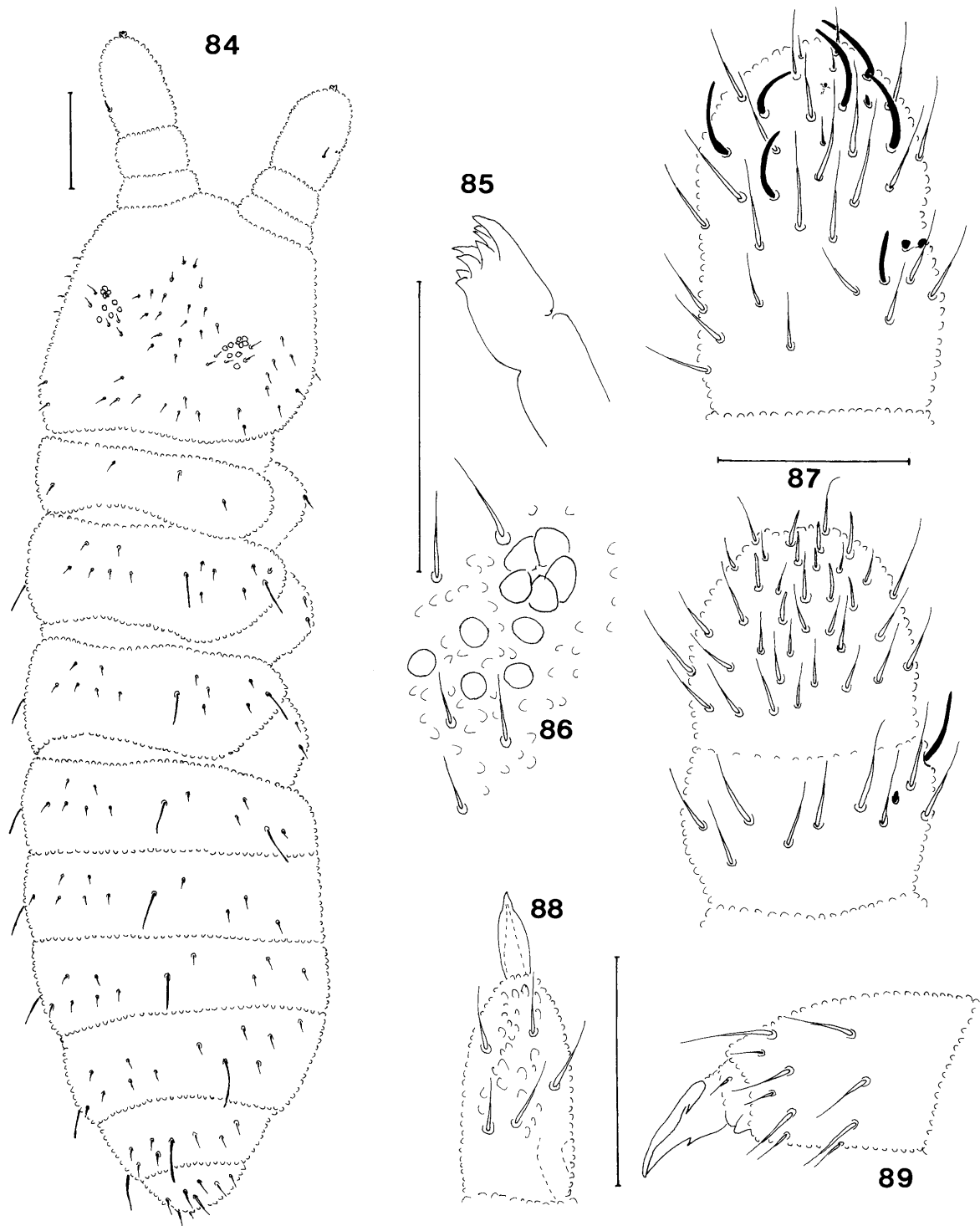
Figs 77–83. *Brachystomella villalobosi* Cassagnau & Rapoport, 1962. 77 – dorsal chaetotaxy (scale 0.1 mm); 78 – maxillum (scale 0.05 mm); 79 – antennal segments III and IV, dorsolateral view (scale 0.05 mm); 80 – postantennal organ and eyes (scale 0.05 mm); 81 – tibiotarsus II (scale 0.05 mm); 82 – dens and mucro (scale 0.05 mm); 83 – male genital plate (scale 0.05 mm).

respectively, with seta M almost in row B. Subcoxa “2” I, II and III with 1, 2 and 2 setae, respectively. Even anal valves each with two setae hr.

Description. Holotype (female) length 0.91 mm, paratypes (females) length 0.70–0.95 mm, paratype (juvenile)

length 0.67 mm. Colour in alcohol bluish-grey, ocular plate blue-black. Entire body moderately granulated.

Antennae shorter than head (about 3/4 length of head). Antennal segment I with 7 setae, antennal segment II with 12 setae. Antennae III and IV fused dorsally, ventral



Figs 84–89. *Brachystomella zerpa* sp. n. 84 – dorsal chaetotaxy (scale 0.1 mm); 85 – maxillum (scale 0.05 mm); 86 – postantennal organ and eyes (scale 0.05 mm); 87 – antennal segments III and IV, dorsal view (scale 0.05 mm); 88 – dens and mucro (scale 0.05 mm); 89 – tibiotarsus III (scale 0.05 mm).

separation well marked. Sensory organ of antennal segment III consisting of: two small globular internal sensilla, two subcylindrical guard sensilla (dorsoventral sensillum shorter than ventrolateral one) and two guard setae between them; ventral microsensillum present. Antennal segment IV with rather long ordinary setae, with 6 distinct subcylindrical sensilla; dorsoexternal

microsensillum, subapical organite present; apical vesicle trilobated, ventral side with a few blunt setae (Fig. 87).

Postantennal organ (Fig. 86) almost three times larger than ocellus B, bearing 5 vesicles. Eyes 5+5. Buccal cone typical for the genus. Mandible absent, maxilla with 8 teeth (Fig. 85). Labral chaetotaxy: 2/2334.

Dorsal chaetotaxy as in Fig. 84 with very short ordinary setae, with longer sensory setae s. Their formula per half tergum: 022/21111. Microsensilla present on thoracic tergum II. Head without setae a0 and sd1, with setae c2 and c5 present. Thoracic tergum I with 2+2 setae. Abdominal terga I–IV with seta seta s = p3. Thoracic sternum lacks setae. Ventral tube with 3+3 setae, abdominal sternum I without setae, abdominal sternum II with 1+1 setae.

Furca well developed with 5 setae on each dens (Fig. 88). Mucro straight with apex slightly hooked. Ratio mucro : dens = 1 : 2.5. Tenaculum with 3+3 teeth. Males unknown. Even anal valves each with 2 setae hr (one specimen with 2+3 setae).

Tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, with acuminate distal setae, seta M (= microchaeta) between setae B4 and B5 present, seta B7 absent on tibiotarsus III. Femora I, II and III with 12, 11 and 10 setae, trochanters I, II and III with 5, 5 and 4 setae, coxae I, II and III with 3, 6 and 7 setae, subcoxae "2" I, II and III with 1, 2 and 2 setae, subcoxae "1" I, II and III with 1, 2 and 2 setae, respectively. Claw with inner tooth at 1/3 length of its inner edge, with pair of lateral teeth (Fig. 89). Empodial appendage absent.

Type material. Holotype ♀, paratypes 5 ♀♀ and 1 juvenile in MNHN; 2 ♀♀ in ISEA.

Type locality. Venezuela, Monte Zerpa, 2,400 m a.s.l., cloud forest, litter, 11.v.1980, lgt. A. Pascual.

Etymology. The name of the new species is derived from the type locality.

Discussion. The new species shares with *B. montebella* Najt & Palacios-Vargas, 1986 and *B. chilensis* Rapoport & Rubio, 1963 the same number of eyes (5+5) and the same number of setae on thoracic tergum I (2+2). It differs from the first species in the number of setae on tibiotarsi (18, 18 and 17 in *B. montebella* and 19, 19, and 18 in the new species), the number of dental setae (6 in *B. montebella* and 5 in the new species) and the shape of the apical vesicle on antennal segment IV (simple in *B. montebella* and trilobated in the new species). The new species is closest to *B. chilensis*, which has the same number of tibiotarsal setae and the same sensillar formula. The two species differ in the number of dental setae (6 in *B. chilensis*, 5 in the new species), and vesicles in the postantennal organ (4 in *B. chilensis*, 5 in the new species), in the shape of apical vesicle (simple in *B. chilensis* and trilobated in the new species), and in the arrangement of eyes (in *B. chilensis* D, F and H absent, in the new species F, G and H absent). There are also some differences in chaetotaxy: *B. chilensis* has seta a0 on head and 3+3 setae on thoracic tergum I, and the new species has no seta a0 on head, and 2+2 setae on thoracic tergum I.

Key to the species of *Brachystomella* Ågren 1903 from the Neotropical region*

- 1. Less than 8+8 eyes present 2
- 8+8 eyes present 6
- 2. 6-7+6-7 eyes present 3

- 5+5 eyes present 4
- 3. 6+6 eyes present, postantennal organ with 6 vesicles, dens with 6 setae *B. sexoculata* Massoud, 1967
Peru
- 7+7 eyes present, postantennal organ with 5 vesicles, dens with 5 setae *B. septemoculata* Denis, 1931
Costa Rica, Jamaica, the French West Indies, Cuba, Mexico
- 4. Thoracic tergum I with 2+2 setae, postantennal organ with 5 vesicles, even anal valves each with 1 or 2 setae hr 5
- Thoracic tergum I with 3+3 setae, postantennal organ with 4 vesicles, apical vesicle on antennal segment IV simple, even anal valves each with 3 setae hr
..... *B. chilensis* (Rapoport & Rubio, 1963)
Chile
- 5. Head with seta a0, apical vesicle on antennal segment IV simple, dens with 6 setae, even anal valves each with 1 seta hr
..... *B. montebella* Najt & Palacios, 1986
Mexico
- Head without seta a0, apical vesicle on antennal segment IV trilobated, dens with 5 setae, the even anal valves each with 2 setae hr *B. zerpa* sp. n.
Venezuela
- 6. Tibiotarsi with capitate setae 7
- Tibiotarsi without capitate setae 15
- 7. Tibiotarsi with 7-16 capitate setae 8
- Tibiotarsi with 1-4 capitate setae 9
- 8. Thoracic tergum I with 4+4 setae, tibiotarsi with about 17–18 capitate setae, postantennal organ with 4 vesicles
..... *B. tuberculata* Wahlgren, 1906
Falklands Is.
- Thoracic tergum I with 2+2 setae, tibiotarsi with 7 capitate setae, postantennal organ with 5–6 vesicles
..... *B. ronderosi* Najt, 1973
Argentina (Tierra del Fuego), Chile (Magallanes Province)
- 9. Tibiotarsi with 3–4 capitate setae 10
- Tibiotarsi with 1 capitate seta 14
- 10. Thoracic tergum I with 3+3 setae, tibiotarsi I, II and III with 18, 18 and 17 setae, respectively 11
- Thoracic tergum I with 2+2 setae, tibiotarsi I, II and III with 19, 19 and 18 setae, respectively, of which 3, 4 and 4 are capitate *B. platensis* Najt & Massoud, 1974
Argentina, Australia, Tasmania
- 11. Dens with 3 setae each, tibiotarsi I, II and III with 2, 3 and 3 or 3, 4 and 4 capitate setae, even anal valves each with 3 setae hr 12
- Dens with 4 setae each, tibiotarsi I, II and III with 3, 4 and 4 capitate setae each, even anal valves each with 2 setae hr ..
..... *B. globulosa* Cassagnau & Rapoport, 1962
Argentina
- 12. Tibiotarsi I, II and III with 3, 4 and 4 capitate setae ... 13
- Tibiotarsi I, II and III with 2, 3 and 3 capitate setae, apical vesicle on antennal segment IV slightly trilobated
..... *B. villalobosi* Cassagnau & Rapoport, 1962
Brasil, Mexico, USA (Florida)
- 13. Mucro about 1/2 length of dens, apical vesicle on antennal segment IV trilobated
..... *B. barrerae* Palacios-Vargas & Najt, 1981
Mexico
- Mucro reduced, mamelon-shaped, about 1/4 length of dens, apical vesicle on antennal segment IV simple
..... *B. minimucronata* Palacios-Vargas & Najt, 1981
Mexico
- 14. Apical vesicle on antennal segment IV simple, dens with 4 setae *B. baconaoensis* Gruia, 1983

* *B. mauriesi* Thibaud & Massoud, 1983 is not included in this key.

- Cuba, USA (Florida), Mexico
- Apical vesicle on antennal segment IV trilobated, dens with 5–6 setae *B. neomexicana* (Scott, 1960)
USA, (New Mexico, California, Louisiana, Texas, Colorado), Mexico
15. Postantennal organ with 4 vesicles 16
– Postantennal organ with more than 4 vesicles 22
16. Thoracic tergum I with 3+3 setae 17
– Thoracic tergum I with 2+2 setae 18
17. Apical vesicle on antennal segment IV simple, femora I, II and III with 12, 11 and 10 setae, tibiotarsi with short inner setae (B4 and B5) *B. mataraniensis* sp. n.
Peru
- Apical vesicle on antennal segment III trilobated, femora I, II and III with 13, 12 and 10 setae, tibiotarsi with 2 long inner setae (B4 and B5), curved at the tip
..... *B. victoriensis* Izarra, 1972
Argentina
18. Abdominal tergum I with 1+1 sensory setae s, tibiotarsi I, II and III with 18, 18 and 17 setae 19
– Abdominal tergum I with 2+2 sensory setae s, tibiotarsi I, II and III with 19, 19 and 18 setae 20
19. Head with seta a0, apical vesicle on antennal segment IV trilobated, dens with 7 setae
..... *B. zapatai* Najt & Palacios-Vargas, 1986
Mexico
- Head without seta a0, apical vesicle on antennal segment IV simple, dens with 6 setae *B. stachi* Mills, 1934
USA (Iowa, Connecticut, Florida, Massachusetts, New York, Indiana, Missouri, North Carolina), the French West Indies, Mexico, French Guiana, Ecuador
20. Abdominal terga II and III with 1+1 sensory setae s, dens each with 5 normal setae, even anal valves each with 1 or 2 setae hr 21
– Abdominal terga II and III with 2+2 sensory setae s, dens each with 6 setae: 3 strong setae and three ordinary ones, even anal valves each with 3 setae hr
..... *B. nana* Rubio & Najt, 1979
Chile
21. Apical vesicle on antennal segment IV simple, even anal valves each with 2 setae hr each, animals of big size
..... *B. agrosa* Wray, 1953
Puerto Rico, the French West Indies, Ecuador, Cuba, Brasil, French Guiana
- Apical vesicle on antennal segment IV trilobated, even anal valves each with 1 seta hr, animals of small size
..... *B. purma* sp. n.
Peru
22. Head with seta a0 23
– Head without seta a0 27
23. Furca well developed, dens with 5-6 setae, mucro present 24
– Furca reduced, dens with 3 setae, mucro absent, apical vesicle on antennal segment IV simple, postantennal organ with 7-10 vesicles, even anal valves each with 3 setae hr
..... *B. cyanea* (Rapoport, 1962)
Argentina
24. Dens with 5 setae 25
– Dens with 6 setae, apical vesicle on antennal segment IV simple, postantennal organ with 5- 6 vesicles, even anal valves each with 3 setae hr
..... *B. gabrielae* Najt & Palacios-Vargas, 1986
Mexico
25. Apical vesicle on antennal segment IV trilobated 26
– Apical vesicle on antennal segment IV simple, postantennal organ 6-7 vesicles, even anal valves each with 2 setae hr ..
..... *B. grootaerti* Najt, Thibaud & Jacquemart, 1991
- Galapagos
26. Even anal valves each with 2 setae hr, ratio mucro : dens = 2.6 *B. saladaensis* sp. n.
Argentina
- Even anal valves each with 3 setae hr, ratio mucro : dens = 2.12 *B. taxcoana* Palacios-Vargas & Najt, 1981
Mexico
27. Apical vesicle on antennal segment IV trilobated, straight mucro with apex slightly hooked 28
– Apical vesicle on antennal segment IV simple, mucro bent, even anal valves each with 2 setae hr
..... *B. contorta* Denis, 1931
Costa Rica, Jamaica, Malaysia, Cuba, the French West Indies, Hawaii, Galapagos, Mexico, India, the Cape Verde Is., Philippines, Ivory Coast, Angola
28. Even anal valves each without setae hr, subcoxae “2” I, II and III with 0, 2 and 2 setae, respectively
..... *B. pefauri* sp. n.
Venezuela
- Even anal valves each with 1 seta hr, subcoxae “2” I, II and III with 0, 1 and 1 setae, respectively
..... *B. desutterae* sp. n.
Peru

ACKNOWLEDGEMENTS. We are most grateful to the following colleagues who supplied us with the materials described in this study: Ch. Amedegnato, L. Desutter-Grandcolas and S. Poulain from the Laboratoire d'Entomologie, Muséum national d'Histoire naturelle (Paris, France), A. Pascual and J. Péfaur, University of “Los Andes” (Mérida, Venezuela), J. Snack and L. Bulla, Facultad de Ciencias y Museo de La Plata (Argentina). We are also grateful to A. Camousseight, Museo Nacional de Historia Natural, (Santiago, Chile), K.A. Christiansen, Grinnell College (Grinnell, USA), M. Gruia, Institutul de Speologie “Emil Racovitza” (Bucharest, Romania), J.G. Palacios-Vargas, Facultad de Ciencias, UNA (México), Torbjörn Kronstedt, Naturhistoriska Riksmuseet (Stockholm, Sweden) for loan of type material, and H. Strümpel, Zoologisches Institut und Zoologisches Museum, Universität Hamburg (Hamburg, Germany) for information. We express our sincere gratitude to Maria Bieniek for her effective assistance. Finally, we thank the two reviewers and the English language editor for valuable comments to the manuscript.

The work is supported by grant KBN 6P04C 004 14 from the Polish Committee for Research.

REFERENCES

- CASSAGNAU P. & RAPOPORT E.H. 1962: Collemboles d'Amérique du Sud (I). Poduromorphes. *Biol. Am. Australe* 1: 139–184.
- GRUIA M.M. 1983: Collemboles arthropléones de Cuba récoltés par les expéditions cubano-roumaines en 1969–1973. II. *Résult. Expéd. Biospéol. Cubano-Roumaines à Cuba* 4: 191–205.
- HERMOSILLA W. & RUBIO I. 1976: Structure des populations de Collemboles Poduromorphes dans une colline de la Cordillera de la Côte Chilienne. *Rev. Ecol. Biol. Sol.* 13: 477–489.
- IZARRA D.C. 1972: Fauna colemológica de Isla Victoria (Prov. Neuquén, Argentina). II. Familia Neanuridae. *Physis* 31: 88–96.
- MARI MUTT J.A. & BELLINGER P.F. 1990: A Catalog of the Neotropical Collembola Including Nearctic Areas of Mexico. *Flora and Fauna Handbook* 5: 1–237.
- MASSOUD Z. 1967: Monographie des Neanuridae, Collemboles Poduromorphes à pièces buccales modifiées. *Biol. Am. Austr.* 3: 1–399.

- NAJT J. & MASSOUD Z. 1974: Contribution à l'étude des Brachystomellinae (Insectes, Collemboles). I. Nouvelles espèces récoltées en Argentine. *Rev. Ecol. Biol. Sol* **11**: 367–372.
- NAJT J. & PALACIOS-VARGAS J.G. 1986: Nuevos Brachystomellinae de México (Collembola, Neanuridae). *Nouv. Rev. Entomol.* **1–3**: 457–471.
- NAJT J., THIBAUD J.-M. & WEINER W.M. 1990: Collemboles (Insecta) Poduromorphes de Guyane française. *Bull. Mus. Natn. Hist. Nat., Paris* **12A**: 95–121.
- NAJT J., THIBAUD J.-M. & JACQUEMART S. 1991: Les Collemboles (Insecta) de l'Archipel des Galápagos. I. Poduromorpha. *Bull. Inst. R. Sci. Nat. Belg., Entomol.* **61**: 149–166.
- NAJT J. & WEINER W.M. 1996: Geographical distribution of Brachystomellidae (Collembola: Neanuridae). *Pan-Pacific Entomol.* **72**: 61–69.
- PALACIOS-VARGAS J.G. & NAJT J. 1981: Tres nuevas Brachystomella (Collembola : Neanuridae) de México. *Bull. Soc. Hist. Nat. Toulouse* **117**: 263–271.
- RAPOPORT E.H. & RUBIO I. 1963: Fauna collembologica de Chile. *Inv. Zool. Chilena* **9**: 95–124.
- RUBIO I. & NAJT J. 1979: Deux nouvelles espèces de Collemboles du Chili. *Rev. Ecol. Biol. Sol* **16**: 131–135.
- THIBAUD J.-M. & MASSOUD Z. 1983: Les Collemboles des Petites Antilles III. – Neanuridae (Pseudachorutinae). *Rev. Ecol. Biol. Sol* **20**: 111–129.
- WEINER W.M. & NAJT J. 1997: Collembola Poduromorpha from the Magallanes Province (Chile). *Bonn. Zool. Beitr.* **47**: 99–110.

Received May 2, 2000; revised February 8, 2001; accepted June 8, 2001