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204

A new species of the Gondwanan centipede *Anopsobius* (Chilopoda: Lithobiomorpha) from New South Wales, Australia

GREGORY D. EDGECOMBE
Australian Museum, 6 College Street, Sydney, NSW 2010, Australia; greged@austmus.gov.au

Abstract

Anopsobius wrighti n. sp., from the New England and Washpool-Gibraltar Range regions of northern New South Wales, is the first Australian species of the Gondwanan genus *Anopsobius* Silvestri, 1899 (Henicopidae: Anopsobiinae). *Anopsobius* is also known from Chile, Argentina, the Falkland Islands, South Africa, New Zealand, and the Chatham and Auckland Islands. The new species is closely related to the New Zealand species *A. neozelanicus* Silvestri, 1909.

Key words: Chilopoda, Lithobiomorpha, Henicopidae, Anopsobiinae, *Anopsobius*, *Anopsobius wrighti*, taxonomy

Introduction

Anopsobiinae is a chiefly Southern temperate subfamily within the lithobiomorph family Henicopidae. Gondwanan Anopsobiinae include four named genera, with species having been described from Patagonian Argentina and Chile (Silvestri 1899, 1909a, b; Verhoeff 1939; Chamberlin 1962), the Falkland Islands (Eason 1993), New Zealand (Silvestri 1909a; Archey 1917, 1937), New Caledonia (Ribaut 1923), Tasmania (Chamberlin 1920), southwest Western Australia (Attems 1911), and the Cape region of South Africa (Attems 1928). Four additional monotypic genera (*Rhodobius* Silvestri, 1933; *Anopsobiella* Attems, 1938; *Ghilaroviella* Zalesskaja, 1975; *Shikokuobius* Shinohara, 1982) represent Anopsobiinae in the northern hemisphere. To date, 16 species and subspecies of Anopsobiinae have been described, seven of these assigned to *Anopsobius* Silvestri, 1899. The distribution of this genus includes southern Chile (Silvestri 1899, 1905, 1909a), southern Argentina (Silvestri 1909a), the Falkland Islands (Eason 1993), the Cape region of South Africa (Attems 1928, though possibly an introduction fide Lawrence 1984), New Zealand (Silvestri 1909a; Archey 1917, 1937), the Chatham Islands (Archey 1926) and the Auckland Islands (Johns 1964).

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The occurrence of an anopsobiine from Sydney, Australia, was cited by Silvestri (1909a), but no material was figured or formally described. A new species from the New England and Washpool-Gibraltar Range regions of northern New South Wales, *Anopsobius wrighti* n. sp., is the first named species of *Anopsobius* from Australia.

For electron microscopy, specimens were photographed on a Leo 435VP using a Robinson backscatter detector. Digital images were assembled into plates with Photoshop. Morphological terminology is as summarised by Edgecombe (2001: 203), with terminology for the mandible as in Edgecombe et al. (2002: 40, fig. 4).

Taxonomy

Specimens cited herein are housed in the Australian Museum, Sydney (prefix AM KS) and the Australian National Insect Collection, Canberra (prefix ANIC).

Anopsobius Silvestri, 1899

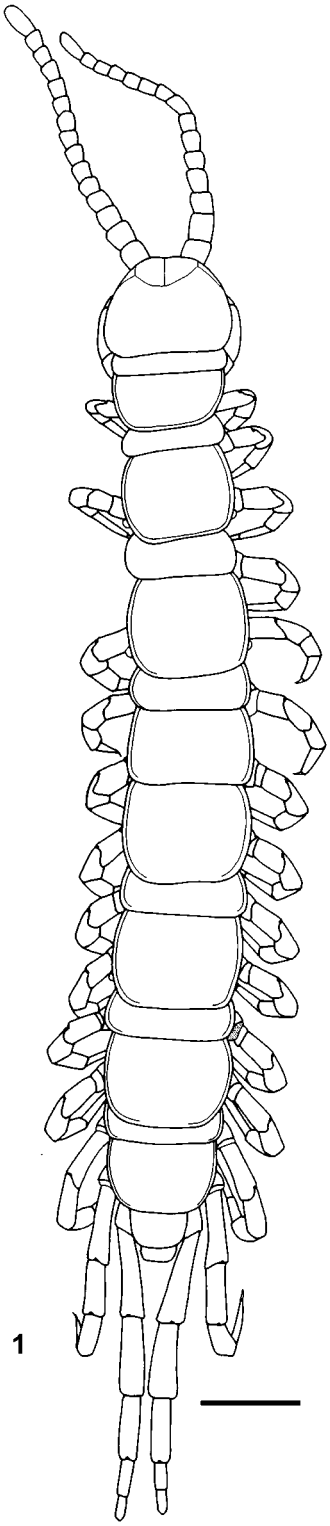
Type species: *Anopsobius productus* Silvestri, 1899.

Assigned species: See key below.

Diagnosis: Anopsobiinae with spiracles on segments 3, 5, 8, 10, 12 and 14; most specimens of all species with 15 antennal articles; distal spinose projection on tibia of legs 1-12; posteroventral spine on pretarsus short, with a smaller accessory spine.

Discussion: The high spiracle count that traditionally defines *Anopsobius* is a plesiomorphic character relative to that of other Gondwanan anopsobiine genera (*Dichelobius* Attems, 1911, and its possible junior synonym *Tasmanobius* Chamberlin, 1920; *Catanopsobius* Silvestri, 1909b), being shared with Henicopinae and Lithobiidae as well as non-lithobiomorph outgroups. This character thus does not provide positive evidence for the monophyly of *Anopsobius* as conventionally understood (e.g., Attems 1928; Chamberlin 1962). Particularly doubtful as members of a clade based on the type species, *A. productus*, are the Chilean species *A. actius* Chamberlin, 1962, and *A. diversus* Chamberlin, 1962, both of which lack a ventrodistal spur on the prefemur of legs 14 and 15. These spurs are shared by *Anopsobius* s.s. and *Dichelobius*, and seem to provide a compelling synapomorphy. If so, a primitive absence of the spurs in *A. actius* and *A. diversus* would exclude them from a monophyletic *Anopsobius*.

FIGURES 1-3. *Anopsobius wrighti* n. sp. 1, holotype ANIC-03-44, male, scale 500 µm; 2, AM KS 84038, female, posterior segments and gonopods, scale 100 µm; 3, AM KS 84042, male, posterior segments and gonopods, scale 100 µm.



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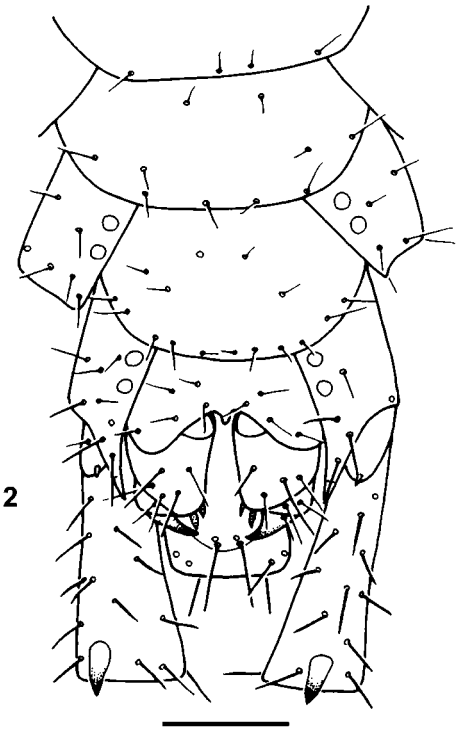

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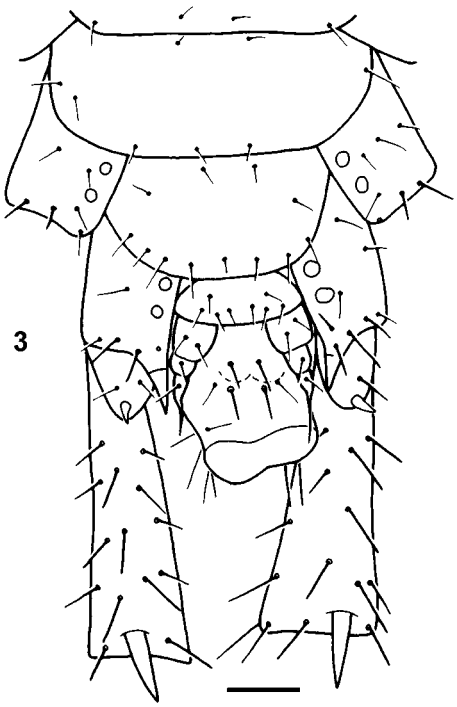

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New to the diagnosis is a diminutive posteroventral spine on the pretarsus. The short spine and smaller accessory spine in *Anopsobius wrighti* (Figs. 30, 31) are shared with *A. neozelanicus*. In contrast, the type species of *Dichelobius*, *D. flavens* Attems, 1911, and *D. bicuspis* Ribaut, 1923, have an elongate posteroventral spine, nearly as long as the main pretarsal claw.

A monotypic subgenus *Promethon* Chamberlin, 1962, was based on an "unusual form of the prosternum" in *A. diversus* Chamberlin, 1962. This distinction seemingly involves the projection of the dental margin, a narrow and deep median notch, and the positioning of the porodont between the two most lateral teeth on the maxillipede coxosternite. The taxonomic significance of the porodont position is called into question by variation in *Anopsobius neozelanicus*, in which the porodont ranges from the outer edge of the outer tooth, in front of the outer tooth, or between the two outer teeth (the "*Promethon*" state). Likewise, the dental margin is scarcely more projected in *A. diversus* (Chamberlin 1962, fig. 40) than in some specimens of *A. neozelanicus* (Archey 1917, fig. 41), nor is the median notch deeper or narrower. A subgenus *Promethon* has little merit.

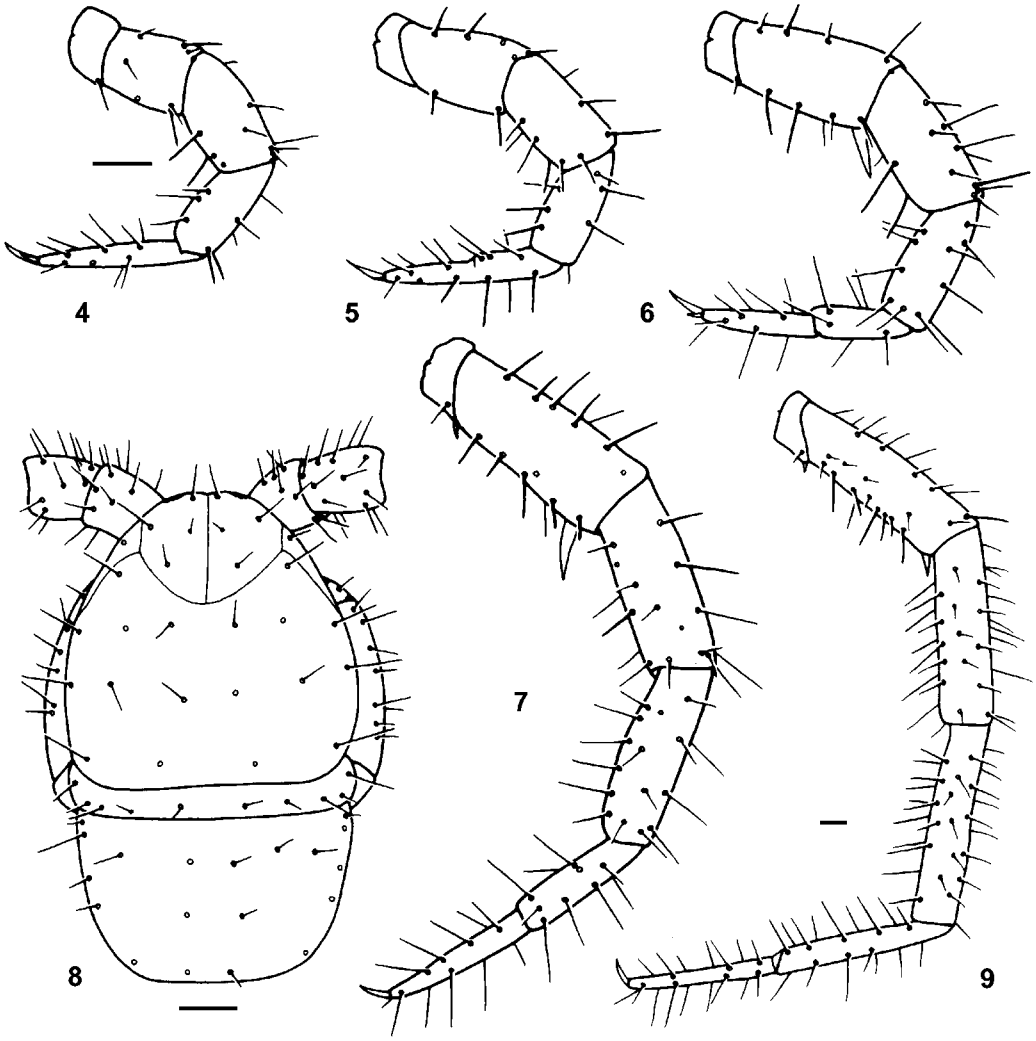
***Anopsobius wrighti* n. sp.**
Figs. 1-8, 10-33

Anopsobius sp. NSW: Edgecombe et al., 2002: fig. 3F,I.
Anopsobius NSW: Edgecombe & Giribet, 2003: figs. 1-3.

Diagnosis: *Anopsobius* with body length up to 5.0 mm; usually 5+5 (maximum 6+6) teeth on dental margin of maxillipede coxosternite; pleural collar of maxillipede with a small, subtrapezoidal median sclerite; 2,2/2,2 coxal pores on legs 14 and 15 in both sexes, female exceptionally 3,3/3,3 with small inner pore; leg 15 with relatively stout podomeres, tibial length three times maximal width, basitarsal length 3.5-4 times maximal width.

Holotype: ANIC-03-44, male (Fig. 1), New England National Park, New South Wales, Tom's Cabin, 30°30'S 152°24'E, 1410 m, L. Hill, 27 June 1982 (ex. ANIC Berlesate 842).

Paratypes: New England National Park: ANIC-03-45, female, 7 males, from type collection; ANIC-03-46, 8 females (Fig. 24), 6 males (Figs. 10-15), 30°31'S 152°31'E, R.W. Taylor, 2 February 1968, c. 4700', *Eucalyptus-Nothofagus*, leaf mould (ex. ANIC Berlesate 56); ANIC-03-47, 14 females, 18 males, 30°31'S 152°31'E, J. Doyen, 15 November 1982, *Nothofagus moorei* litter (ex. ANIC Berlesates 862, 863); AM KS 57959, 2 females, 2 males (Figs. 16-19, 21, 23, 25-31), Tom's cabin, 30°29'55"S 152°23'51"E, 1457 m, G.D. Edgecombe, G. Giribet, M. Nishiguchi & Y.-y. Zhen, 30 March 2000, *Nothofagus*, mossy cool temperate rainforest; AM KS 84038, female (Fig. 2), KS 84039, female (Figs. 4-7, 20, 22, 32, 33), KS 84040, female (Fig. 8), KS 84041, 3 females, 5 males, Tom's cabin, G.D. Edgecombe, C. Reid & Y.-y. Zhen, 23 February 2002.



FIGURES 4-9. *Anopsobius* spp. 4-8, *Anopsobius wrighti* n. sp. 4-7, AM KS 84039, female. 4, leg 12; 5, leg 13; 6, leg 14; 7, leg 15. Scale 100 µm. 8, AM KS 84040, female, head, maxillipede and tergite of first pedigerous segment. Scale 100 µm. 9. *Anopsobius neozelanicus* Silvestri, 1909. AM, female, leg 15, Chaslands National Park, South Island, New Zealand. Scale 100 µm.

Other material: Washpool National Park: AM KS 84042, male (Fig. 3), KS 84043, 2 females, 4 males, Washpool Walk, Coombadjha Creek, 29°28'S 152°19'E, 790 m, G.D. Edgecombe & Y.-y. Zhen, 26 February 2002, rainforest; AM KS 84044, female, Coachwood Drive, 1.6 km NW Gwydir Hwy, 29°30'S 152°19'E, G.D. Edgecombe & Y.-y Zhen, 26 February 2002. Gibraltar Range NP: ANIC-03-48, female, 3 males, 29°31'S 152°22'E, 920 m, L. Hill, 14 April 1982, closed forest (ex. ANIC Berlesate 836); AM KS 84045,

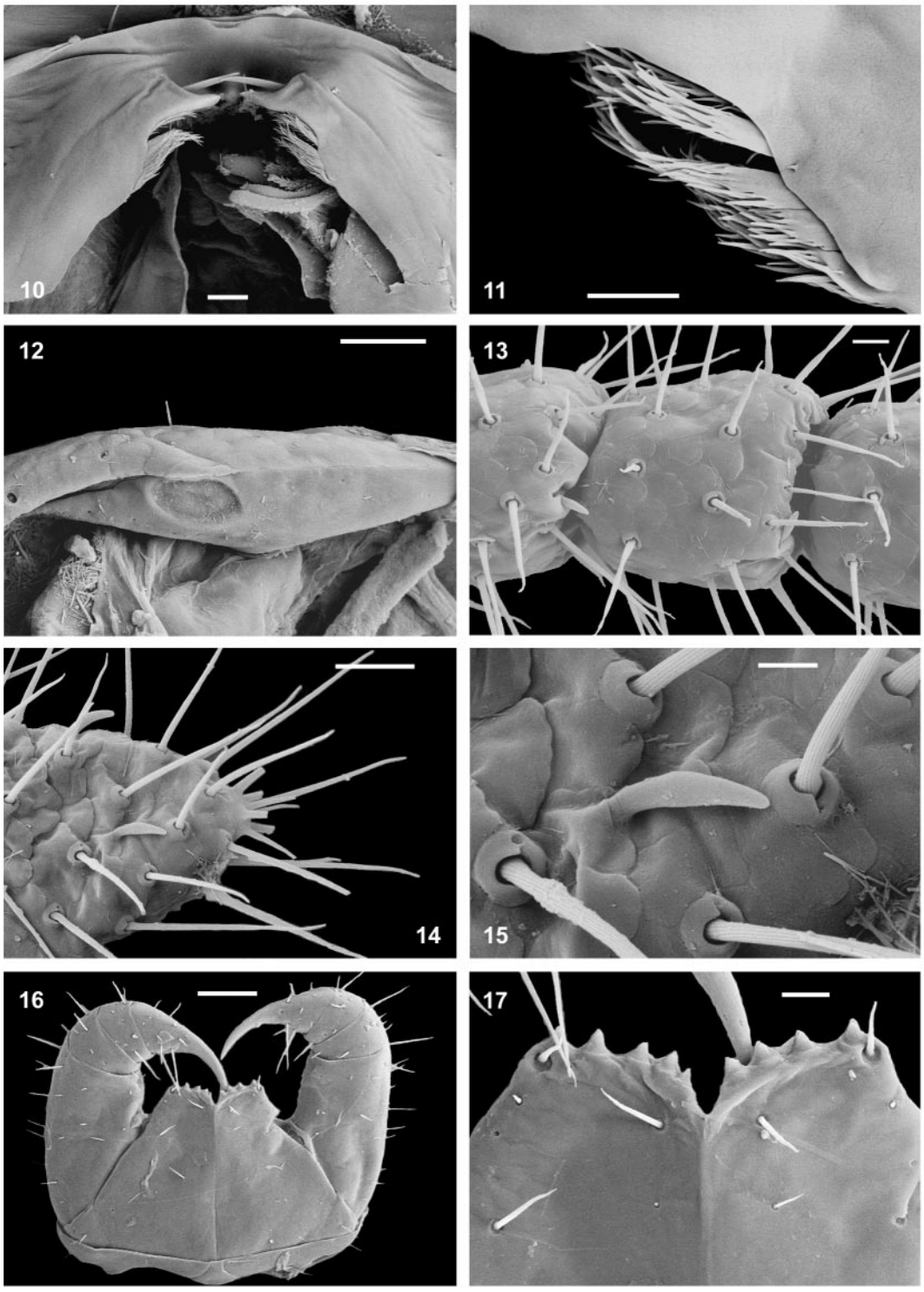
female, male, 700 m SW Heffron Lookout, 29°27'S 152°21'E, 800 m, G.D. Edgecombe, C. Reid & Y.-y Zhen, 26 February 2002; AM KS 84046, 3 females, 5 males, Gibraltar Range NP/SF, junction of Vinegar Hill Rd and Gwydir Hwy, 29°33'S 152°14'E, 1075 m, G.D. Edgecombe, C. Reid & Y.-y Zhen, 26 February 2002, wet sclerophyll.

Etymology: For Phillip Wright, grazier, who in the 1920s spearheaded the campaign to preserve New England National Park.

Description: Length (anterior margin of head to posterior margin of telson) up to 5.0 mm; length of head shield up to 0.6 mm. Colour (in absolute ethanol): Head shield, maxillipedes, and posterior trunk tergites and sternites pale orange; anterior trunk tergites and sternites yellow; some specimens uniformly medium orange on head and along length of trunk; legs yellow.

Head: Transverse suture extends back to more than 35% length of head shield. Median notch strong; longitudinal median furrow deep in anterior two-thirds, lightly impressed to transverse suture. Region distal to antennocellar sutures depigmented but not entirely so. Setae on head shield symmetrically arranged, four pairs between antennocellar and transverse suture, nine pairs behind these sutures (Fig. 8). Antenna 2.2-2.6 times length of head shield; 15 articles, basal two enlarged, next 12 each about as long as wide, submoniliform, with numerous trichoid sensilla arranged in three indistinctly defined rows (Fig. 13); distal article about twice length of penultimate, bearing two sickle-shaped thin-walled basiconic sensilla (Figs. 14, 15); cluster of about eight sensilla brachyconica at tip of distal article (Fig. 14); other articles with a single clavate thin-walled basiconic sensillum on dorsolateral anterior edge of article (Fig. 13), single minute thick-walled basiconic sensillum on mediolateral anterior edge; several sensilla microtrichoidea on proximal part of first article on its dorsal side. Tömösváry organ large, longitudinally ovate, outer margin at lateral edge of cephalic pleurite (Fig. 12). Clypeal apex with cluster of seven setae, three along margins, one medially; transverse band of four clypeal setae in front of labrum; transverse seta projects from pit in sidepiece (Fig. 10). Labral margin prominently incised where fringe of branching bristles projects; branching bristles with fairly wide bases, each divided distally into several elongate, slender spines (Fig. 11).

FIGURES 10-17. *Anopsobius wrighti* n. sp. 10-12, 14, 15, ANIC-03-46, male. 10, labrum, scale 10 µm; 11, labral margin, scale 5 µm; 12, cephalic pleurite with Tömösváry organ, scale 30 µm; 14, 15, distal article of antenna, and detail of basiconic sensillum, scales 20 µm, 5 µm. 13, ANIC-03-46, male, antennal articles, scale 10 µm. 16, 17, AM KS 57959, male, maxillipede and detail of dental margin of coxosternite, scales 100 µm, 20 µm.

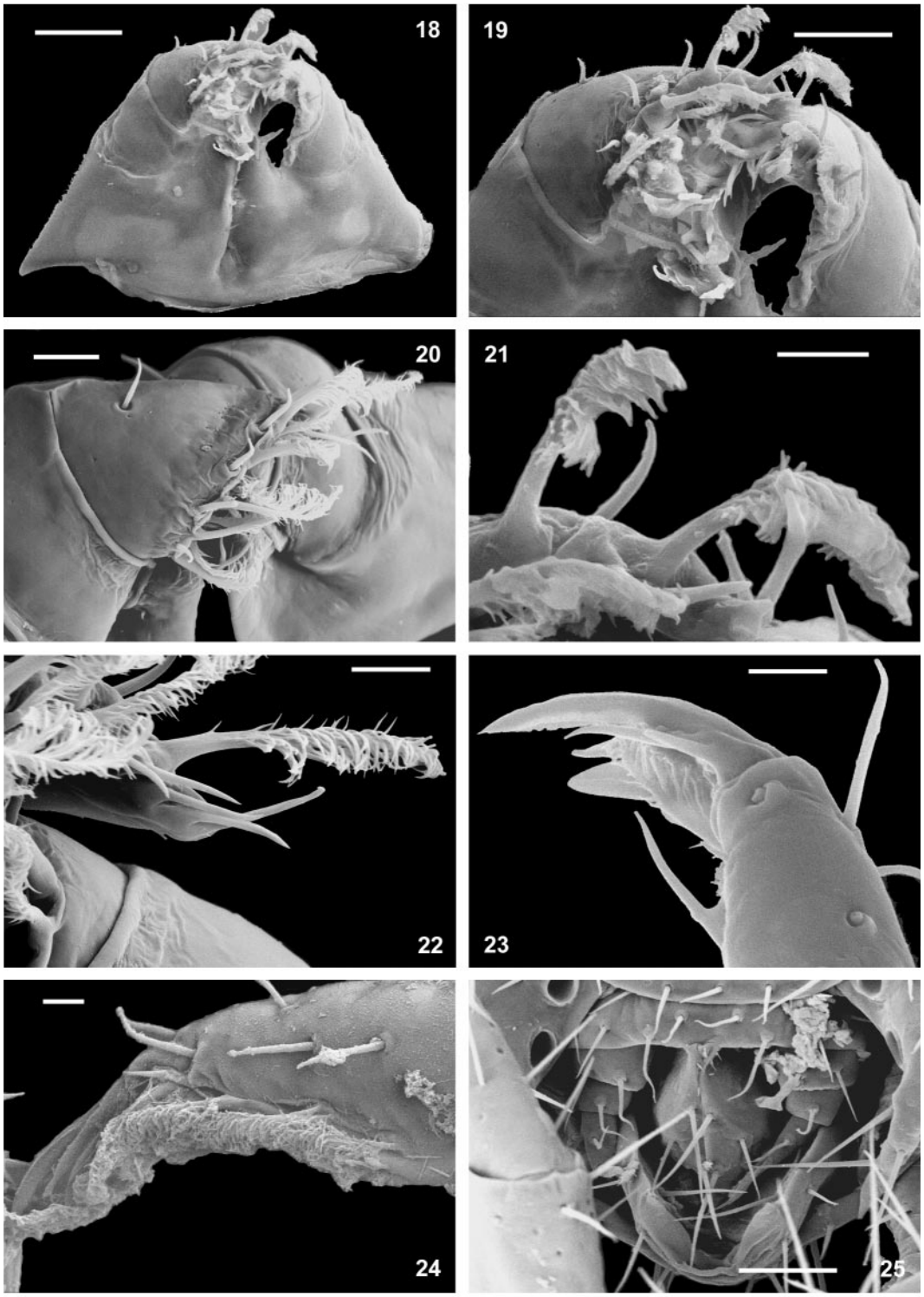


Maxillipede: Coxosternite trapezoidal with narrow, slightly convex dental margin; each margin slopes posteromedially, separated by moderate to deep median notch (Fig. 17); few short setae sparsely scattered on coxosternite, absent posteromedially. Usually 5+5 teeth, ranging in large specimens from 4+4 to 6+6; inner tooth usually smaller than others; teeth composed of two cusps, one directly behind the other. Porodont posterolateral to outermost tooth, seta-like, of similar thickness to thickest setae on coxosternite, set in prominent circular socket. Pretarsal section of tarsungulum equal in length to tarsal section (Fig. 16); pair of setae on inner margin of tarsungulum longer than those on outer margin; setae on inner margins of tibia and femur of similar length and density to those on outer margins. Pleural collar of maxillipede with a small, subtrapezoidal median sclerite that widens posteriorly, with curved sutures defining its lateral margins (Fig. 16)

Mandible (Fig. 26): Four or five curved aciculae, all with up to 18 short, blunt denticles along both margins on distal two-thirds (Fig. 28). Four paired teeth, dorsal three with accessory denticle field delimited by deep groove; accessory denticles mostly in the form of tuberculate scales. Fringe of branching bristles terminates against dorsalmost acicula; ventralmost bristles in fringe with flattened bases lacking spines, distal two-thirds with short spines along both margins and on outer face (Fig. 27); bristles multifurcating at their distal tips, with 5-7 spines that are longer and thicker than those more basally; more dorsal bristles gradually become more uniformly spinose to their broader bases, with more numerous distal spines, grading into wide scales that form a nearly continuous double-fringe of hair-like spines, each scale composed of a short outer fringe and a longer inner fringe, each with about 12 spines per scale; fringe terminates against a large, smooth scale that separates dentate lamina from furry pad. Furry pad composed of a few broad scales with distal fringe of spines and cluster of simple, elongate spines (Fig. 29).

First maxilla: Sternite triangular, fused to coxae posterolaterally (Fig. 18). Apex of coxal process bears four simple setae. Distal article of telopodite with row of six plumose setae along inner margin (Figs. 19, 20), each with a simple seta near its base on dorsal side; plumose setae branching along more than half their length (Fig. 21); anterior angle terminates as a cluster of three slender, elongate spines (Fig. 22); numerous slender spines aligned on inner dorsal margin of distal article; one seta near outer margin of distal article. Basal article of telopodite with a single seta anterolaterally.

FIGURES 18-25. *Anopsobius wrighti* n. sp. 18, 19, 21, 23, 25, AM KS 57959, male. 18, 19, 21, first maxillae, detail of telopodites, and plumose setae on inner margin of telopodite, scales 50 µm, 30 µm, 10 µm; 23, claw of second maxilla, scale 10 µm; 25, first genital sternite and gonopods, 50 µm. 20, 22, AM KS 84039, female. 20, telopodite of first maxilla, scale 20 µm; 22, spines at anterior angle of distal article of telopodite of first maxilla, scale 10 µm. 24, ANIC-03-46, female, tarsus and claw of second maxilla, scale 10 µm.



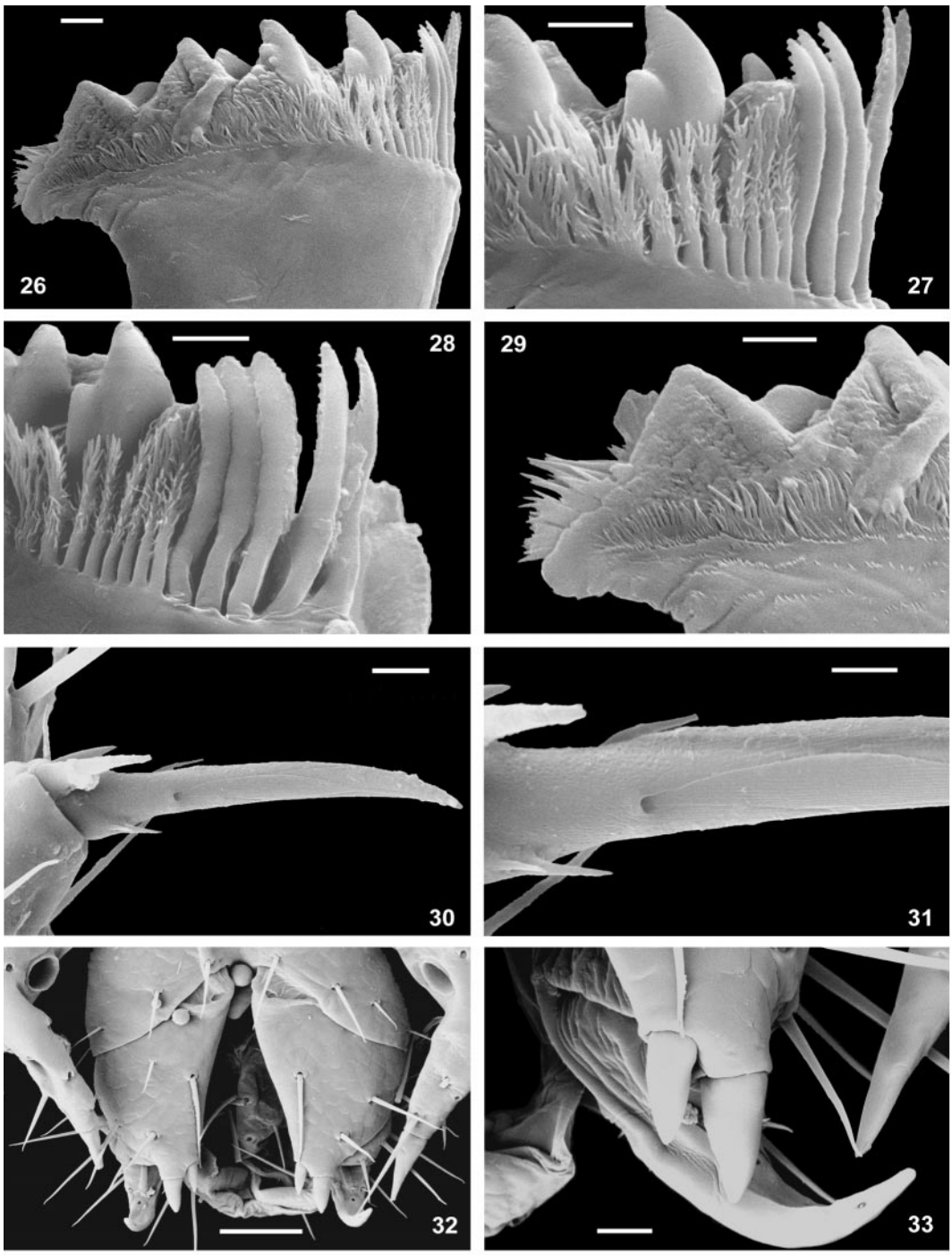
Second maxilla: Anterior margin of coxa weakly concave; band of four small setae across anterior part of coxa. Joint between trochanter and prefemur developed on inner part of telopodite. Inner surface of tarsus with row of large plumose setae; setae branched near to their bases, forming a dense fringe that extends to the claw (Fig. 24). Claw with five digits, divided into stout, curved median spine, three slender, shorter spines and stout, short outer spine (Fig. 23).

Tergites: All smooth, with rounded posterior angles; long tergites with transverse or weakly concave posterior margins; short tergites with transverse posterior borders (Fig. 1). Tergites 1 and 3 bordered posteriorly; tergites 5-14 bordered laterally only. Tergites of first genital segment and telson strongly sclerotised. Long tergites with a moderately long seta on anterolateral margin and at posterolateral corner, few additional short setae on lateral margin; short tergites with fringe of up to eight short setae along posterior margin (TT11, 13). Sternites with one or two setae on anterolateral margin, one at posterolateral corner; band of four setae at about one-third length of sternite, inner pair larger; four setae along posterior margin of posterior segments.

Spiracles on segments 3, 5, 8, 10, 12 and 14.

Legs 12-15 with length ratios 1: 1.05: 1.3: 1.7. Legs 1-12 with unjointed tarsi; leg 13 with articulation between two tarsomeres usually complete, variably incomplete on dorsal side (Fig. 5); legs 14 and 15 with clear articulations. Large ventrodistal spur on prefemur of legs 14 (Fig. 6) and 15 (Fig. 7); small spur at ventrodistal edge of trochanter of leg 15. Strong, sharp distal spinose projections on tibiae of legs 1-11; distal projection on leg 12 short (Fig. 4) to strong, pointed; projections lacking on legs 13-15. Leg 15 (Fig. 7) with setae evenly distributed on all segments; basitarsus 60-70% length of prefemur, distitarsus slightly more than 70%; tibia about three times longer than maximal width, basitarsus 3.5-4, distitarsus 5-6.5. Ventral parts of prefemur, femur and tibia of all legs with “glandular mass” as in *Anopsobius patagonicus calcaratus* (Attems 1928, text-fig. 19). Setae on prefemur of legs 14 and, especially, 15 thicker than those on other legs. Accessory claws present on pretarsi of legs 1-14; posterior accessory claw nearly 30% length of main claw (Fig. 30). Main claw gently curved in its distal part; single large pore at the proximal end of an elongate scute that extends for nearly half length of main claw on its lateral sides (Fig. 31); main claw pitted proximally, with indistinct sutures and scutes, with closely spaced linear ridges and grooves distal to the lateral pore. Short, slender sensory spine near base of main claw on posterior side of legs, with small subsidiary spine originating just behind its base; both of these spines with the same distal orientation (Fig. 31).

Coxal pores: rounded; 2,2/2,2 in large males, about equal in size (Fig. 3); females usually 2,2/2,2 (Fig. 2), rarely 3,3/3,3, with much smaller inner pore. Coxal process on leg l5 large, without consistent sexual dimorphism; spine at distal end with basal articulation (Fig. 32). Leg 14 with variably developed coxal process, often lacking (Fig. 3), at most short, angular as figured for *A. macfaydeni* (Eason 1993, fig. 3).



FIGURES 26-33. *Anopsobius wrighti* n. sp. 26-31, AM KS 57959, male, all 10 µm except 31, 5 µm. 26, gnathal edge of mandible; 27, 28, ventral part of mandibular gnathal edge; 29, dorsal mandibular teeth and furry pad; 30, 31, pretarsus of leg 13, posterior view and detail showing pore on main claw. 32, 33, AM KS 84039, female, gonopods and detail of spurs and claw, scales 50 µm, 10 µm.

Female (Fig. 2): Sternite of segment 15 gently convex posteromedially, fringed with short setae along posterior margin, bearing several scattered setae near midlength. First genital sternite bearing nine or ten setae including band of six in front of posterior margin. Basal article of gonopod bearing four or five setae, two spurs on a short process (Fig. 32); inner spur much shorter and narrower than outer spur, both subconical, weakly pointed (Fig. 33); second article bearing three setae; third article bearing a single large seta, one or two tiny setae on ventromedial face; claw simple, with one pore housing a sensillum coeloconicum on both distolateral sides.

Male (Fig. 3): Sternite of segment 15 fringed with eight short setae near posterior/posterolateral margin, a few setae scattered anteriorly. First genital sternite with band of 6-8 setae posteriorly. Gonopod with two setae on basal article, one on second, one or two on third (Fig. 25); third article grades into long terminal filament that bears numerous short spines proximally.

Discussion: Morphology of this species is similar to that of *Anopsobius neozelanicus*, and molecular studies indicate a close relationship (Edgecombe et al. 2002; Edgecombe & Giribet 2003). Both species have 2,2/2,2 coxal pores in large males and a maximum of 3,3/3,3 pores in females (though usually 2,2/2,2 in *A. wrighti*), and have large ventrodistal spurs on the prefemur of both legs 14 and 15. The largest specimens of *A. wrighti* are considerably smaller than most specimens of *A. neozelanicus*, which can attain a length of 9 mm. This size difference is unlikely to be a collecting artefact because both species have been sampled by various techniques in different seasons and years, yet at no locality does any specimen of *A. wrighti* reach the typical size of *A. neozelanicus*.

Other than size, the most obvious distinction between the two species is the relative stoutness of most podomeres in leg 15 of *A. wrighti*, this difference being more marked in large specimens of *A. neozelanicus* (compare Figs. 7 and 9). Archey (1937) remarked on the variability shown by *A. neozelanicus* with respect to length/width ratios of individual podomeres, and cautioned that taxonomic weight should not be placed on these proportions. However, *A. wrighti* consistently falls outside the reported range of length/width ratios for podomeres in *A. neozelanicus* (4.6-10:1 fide Archey 1937) for all podomeres of leg 15 except the distitarsus. The small trapezoidal median sclerite between the main bands of the maxillipede pleural collar in *A. wrighti* (Fig. 16) contrasts with a weak longitudinal median suture between the bands in *A. neozelanicus*. *Anopsobius wrighti* has fewer setae on sternite 15 in females (compare Silvestri 1909a, fig. IV.5 with Fig. 2 here). Large specimens of *A. neozelanicus* frequently have more teeth on the dental margin of the maxillipede coxosternite (often 7+7, up to 8+8 in specimens from the Chatham Islands: Archey 1926) than any specimens of *A. wrighti*. Archey (1937) described a lack of plumose setae on the tarsus of the second maxilla in *A. neozelanicus*, but this apparent distinction from *A. wrighti* does not withstand scrutiny. In fact, *A. neozelanicus* has a group of plumose setae on the second maxillary tarsus (pers. obs.), as is the case for all lithobiomorphs.

Anopsobius macfaydeni Eason, 1993, from the Falkland Islands, was originally diagnosed by the presence of a ventrodistal process on the coxa of leg 14, thought to be unique within the genus. A similar process is variably developed in *A. wrighti* (Fig. 2) and in some specimens of *A. neozelanicus*. Silvestri (1909a) described a short process ("processum breviorem") in *A. patagonicus* as well (Silvestri 1909, fig. III.2). The tendency to develop a short process seems to be a general character for *Anopsobius*.

Distinction between *Anopsobius wrighti* and other species is indicated in the following key, modified from Chamberlin (1962) and updated to include new species. Chamberlin's key grouped the type, *Anopsobius productus*, with species lacking a ventrodistal spur on legs 14 and 15, but that species has a spur on both legs (Silvestri 1905, fig. 51; 1909a, fig. II.8).

Key to species of *Anopsobius*

1a. Spiracle present on first pedigerous segment ..... *macfaydeni* Eason, 1993 [Falkland Islands]
1b. Spiracle lacking on first pedigerous segment 2
2a. Leg 14 and 15 prefemur bearing a ventrodistal spur 3
2b. Leg 14 and 15 prefemur lacking a ventrodistal spur 6
3a. Leg 15 trochanter lacking ventrodistal spur ..... *productus* Silvestri, 1899 [Chile: Temuco]
3a. Leg 15 trochanter with ventrodistal spur 4
4a. Coxal pores 2,2 on legs 14 and 15 of males 5
4b. Coxal pores 1,1 on legs 14 and 15 of males ..... *patagonicus* Silvestri, 1909 [Argentina: Santa Cruz; South Africa: Western Cape]
5a. Dental margin of maxillipede with up to 8+8 teeth; maxillipede pleurite collar with weak median suture; leg 15 basitarsus 6-7 times longer than maximal width ..... *neozelanicus* Silvestri, 1909 [New Zealand, Auckland Islands, Chatham Island]
5b. Dental margin of maxillipede usually with 5+5 teeth (maximum 6+6); maxillipede pleurite collar with subtrapezoidal median sclerite; leg 15 basitarsus 3.5-4 times longer than maximal width ..... *wrighti* n. sp. [Australia: New South Wales]
6a. Dental margin of maxillipede with 6+6 teeth and narrow, deep median notch; porodont between two outer teeth..... *diversus* Chamberlin, 1962 [Chile: Chiloé]
6b. Dental margin of maxillipede with 5+5 teeth and broadly V-shaped median notch; porodont distal to outer tooth ..... *actius* Chamberlin, 1962 [Chile: Chiloé]

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References

Archey, G. (1917) The Lithobiomorpha of New Zealand. *Transactions and Proceedings of the New Zealand Institute*, 49, 303-318.

Archey, G. (1926) The Chilopoda of the Chatham Islands. *Records of the Canterbury Museum*, 3, 39-42.

Archey, G. (1937) Revision of the Chilopoda of New Zealand. Part 2. *Records of the Auckland Institute and Museum*, 2, 71-100.

Attems, C. (1911) Myriopoda exkl. Scolopendridae. *Die Fauna Südwest-Australiens. Ergebnisse der Hamburger südwest-australischen Forschungsreise 1905*, 3, 147-204. Gustav Fischer, Jena.

Attems, C. (1928) The Myriapoda of South Africa. *Annals of the South African Museum*, 26, 1-431.

Attems, C. (1938) Die von Dr. C. Dawydoff in Französisch Indochina Gesammelten Myriopoden. *Mémoires du Muséum national d'Histore naturelle*, Paris, 6, 2, 187-353.

Chamberlin, R.V. (1920) The Myriopoda of the Australian region. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 64, 1-269.

Chamberlin, R.V. (1962) Chilopods secured by the Royal Society Expedition to southern Chile in 1958-59. *University of Utah Biological Series*, 12, 1-23.

Eason, E.H. (1993) A new species of *Anopsobius* from the Falkland Islands, with commentary on the geographical distribution of the genus (Chilopoda: Lithobiomorpha). *Myriapodologica*, 2, 83-89.

Edgecombe, G.D. (2001) Revision of *Paralamyctes* (Chilopoda: Lithobiomorpha: Henicopidae), with six new species from eastern Australia. *Records of the Australian Museum*, 53, 201-241.

Edgecombe, G.D. and Giribet, G. (2003) Relationships of Henicopidae (Chilopoda: Lithobiomorpha): new molecular data, classification and biogeography. In: Hamer, M. (Ed) *Proceedings of the 12th International Congress of Myriapodology. African Invertebrates*, 44.

Edgecombe, G.D., Giribet, G., & Wheeler, W.C. (2002) Phylogeny of Henicopidae (Chilopoda: Lithobiomorpha): a combined analysis of morphology and five molecular loci. *Systematic Entomology*, 27, 31-64.

Johns, P.M. (1964) Insects of Campbell Island. Chilopoda, Diplopoda (Preliminary note on the Myriapoda of the New Zealand Subantarctic Islands). *Pacific Insects Monograph*, 7, 170-172.

Lawrence, R.F. (1984) *The Centipedes and Millipedes of Southern Africa: A Guide.* A.A. Balkema, Cape Town, Rotterdam.

Ribaut, H. (1923) Chilopodes de la Nouvelle-Calédonie et des Iles Loyalty. In: Sarasin, F. & Roux, J. (Eds) *Nova Caledonia. Recherches scientifique en Nouvelle-Calédonie et aux Iles Loyalty. A. Zoology* 3(1). C.W. Kreidel's Verlag, Berlin, Weisbaden, 79 pp.

Shinohara, K. (1982) A new genus of centipede of the Subfamily Anopsobiinae (Henicopidae, Chilopoda). *Proceedings of the Japanese Society of Systematic Zoology*, 24, 41-46.

Silvestri, F. (1899) Contribución al estudio de los quilópodos chilenos. *Revista Chilena de História Natural*, 3, 141-152.

Silvestri, F. (1905) Myriapoda. In: *Fauna chilensis*. *Zoologische Jahrbücher, Abteilung für Systematik, Ökologie und Geographie der Tiere, Supplement*, 6, 715-772.

Silvestri, F. (1909a) Contribuzioni alla conoscenza dei Chilopodi. III. Descrizione di alcuni generi e specie di Henicopidae. *Bolletino del Laboratorio di Zoologia generale e agraria, Portici*, 4, 38-50.

Silvestri, F. (1909b) Descrizioni preliminari di varî Arthropodi, specialmente d'America. V. Nuovi genere di Henicopidae (Chilopoda). *Rendiconti della R. Accademia dei Lincei*, 18, 270-271.

Silvestri, F. (1933) Nuovi contributi alla conoscenza della fauna delle isole italiane dell'Ageo. I. Descrizione di un nuovo genere di Chilopodo Henicopino. *Bolletino del Laboratorio di Zoologia generale e agraria, Portici*, 27, 58-60.

Verhoeff, K.W. (1939) Von Dr. G. H. Schwabe in Chile gesammelte Isopoda terrestria, Diplopoda und Chilopoda. *Archiv für Naturgeschichte, Zeitschrift für Wissenschaftliche Zoologie Abteilung B*, 8, 301-324.

Zalesskaja, N.T. (1975) New genera and species of Chilopoda (Lithobiomorpha) from central Asia and Far East. *Zoologicheskii zhurnal*, 54, 1316-1325.

