

The scolopendromorph centipedes (Chilopoda) of Vietnam, with contributions to the faunas of Cambodia and Laos. Part 3

Многоножки-сколопендроморфы (Chilopoda) Вьетнама с данными по фаунам Камбоджи и Лаоса. Часть 3

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КЛЮЧЕВЫЕ СЛОВА: Scolopendromorpha, ключ, *Tonkinodentus lestes*, переописание, Вьетнам, Камбоджа, Лаос.

ABSTRACT. This paper includes an updated identification key to the scolopendromorph centipedes of Vietnam, descriptions of all representatives of Cryptopinae studied, an extended redescription of *Tonkinodentus lestes* Schileyko, 1992, a checklist of the species of Vietnamese Scolopendromorpha seen by the author, and a list of localities.

РЕЗЮМЕ. Статья содержит современный ключ для определения многоножек-сколопендроморф Вьетнама, описания всех изученных представителей Криптопине, расширенное переописание *Tonkinodentus lestes* Шилейко, 1992, аннотированный список всех лично исследованных видов вьетнамских Сколопендроморфа, а также список локалитетов.

Introduction

The present work continues my studies of the Vietnamese Scolopendromorpha [Schileyko 1992, 1995, 1998, 2001]. Previous literature data are scant, i.e. Silvestri [1911], who described the monotypic genus *Alluopus* Silvestri, 1912 from Tonkin (= North Vietnam), and Attems [1938, 1953], who recorded 27 species or subspecies representing nine genera in what is the present-day Vietnam together with the adjacent regions of Laos and Cambodia.

As the result of a study of more than 500 specimens of scolopendromorphs from 32 localities scattered all over the country (Fig. 1), I have identified 27 species-group taxa belonging to nine genera. However, considering the information contained in Silvestri [1911] and Attems [1938, 1953], as well as my own observations, the scolopendromorph fauna of Vietnam currently comprises 39 species-rank taxa belonging to 11 genera, six subfamilies and three families (see below).

It is noteworthy that some important re-arrangements at the familial and subfamilial levels have recently been made; new subfamilies and a new family have also been proposed by Shelley [1997, 2002], Shelley & Mercurio [2005] and Lewis [2006]. I have a different opinion concerning some of these taxonomic novelties, but their discussion lies beyond the scope of the present paper. So subfamilies have been left ungrouped into families. In addition, I provisionally place *Scolopocryptops* Newport, 1844 and *Dinocryptops* Crabill, 1953 together in Scolopocryptopinae, following the most recent classification proposed by Shelley & Mercurio [2005]. As regards the monotypic *Tonkinodentus* Schileyko, 1992, this genus was removed from Theatopsinae (= Plutonimurinae Bollman, 1893) and “left unassigned” by Shelley [1997]. Below one can find an extended redescription of *Tonkinodentus lestes* Schileyko, 1992 based on the holotype and the second (anatomically complete) paratype. However, a discussion concerning its taxonomic position will be published elsewhere, so this genus is left unassigned to a subfamily. All investigated material, including the types, is stored in the Zoological Museum of the Moscow State Lomonosov University (ZMMU + the respective entry number).

The main part of the species of Scolopendromorpha studied by the author, except for Cryptopinae, have been described in Schileyko [1995]. So only detailed descriptions of *Cryptops* and *Paracryptops* species, as well as a redescription of *Tonkinodentus lestes* Schileyko, 1992, are given here.

The previous versions of my Vietnamese faunistic list [Schileyko, 1992, 36 species recorded; 1998, 48 species and subspecies; 2001, 44 species and subspecies] have been corrected. The following names have been ejected from the latest [2001] version, according to the recent data: *Otostigmus* (*O.*) *simplex* (synonymised with *Rhysida longipes* by Lewis [2002b]),



Fig. 1 Map of Vietnam showing localities studied.

Рис. 1. Точки сбора материала на территории Вьетнама

O. (O.) moluccanus Chamberlin, 1914 (referred to as a nomen dubium by Lewis [2002b] and indeed seemingly a junior synonym of *O. (O.) astenus* (Kohlrausch, 1881)), *O. (O.) puncticeps* and *O. (O.) politoides* (both synonymised with *Scolopendra s. subspinipes* by Lewis [2004]). In addition, *Ethmostigmus platycephalus cribri-rifer* (Gervais, 1847) is currently *Ethmostigmus rubripes platycephalus* (see Schileyko & Stagl [2004]), whereas the specimens referred to earlier by Schileyko [1992, 1995, 2001] as *Scolopocryptops sexspinosus* (Say, 1821) are *Scolopocryptops spinicaudus* Wood, 1862 [Shelley, 2002].

I have also restudied the specimens I [1992, 1998, 2001] identified as *Cryptops (C.) audax* Attems, 1928, *C. (C.) japonicus* Takakuwa, 1934 and *C. (C.) niuensis* Chamberlin, 1920. All of them actually belong to *Cryptops (C.) doriae* Pocock, 1891. I synonymise here *Otostigmus (O.) ziesel* Schileyko, 1992 with *O. (O.) aculeatus* Haase, 1887.

Material and Methods

Over 500 specimens, mainly from Vietnam, but also a few localities in Cambodia and Laos, have been identified. More than 50 specimens from other South-East Asian and Pacific countries, first of all Indo-Malaya, have been studied as additional material in order to clarify the borders of intraspecific variability and distribution of Vietnamese species. All such non-Vietnamese samples are referred to below as “additional material”.

Material was mainly taken by hand or pitfall trapping.

All the material treated here comes from the following 32 localities listed below (see also Fig. 1).

LIST OF LOCALITIES

Bac Thai (Thai Nguyen ?) Province: (1) Phu Luong, Quang Chu(?).

Hoa Binh Province: (2) environs of Hoa Binh, (3) environs of Mai Tiao.

Vinh Phu Province: (4) environs of Tam Dao.

Ninh Binh Province: (5) Cuc phuong Nature Reserve.

Ha Tay Province: (6) 60 km NW Hanoi, Ba Vi Mountain.

Hai Phong District: (7) Bai The Long Arhipelago, Dongkho Island, (8) Cat Ba Island.

Guang Binh Province: (9) Minh Hoa District, environs of Yen Hop.

Ha Tinh Province: (10) environs of Vu Quang.

Lao Cai Province: (11) Sa Pa District, Phan Si Pan (= Fansipan) Mountains, (12) W of Sa Pa, Hoang Lien National Park.

Lai Chau Province: (13) environs of Muong Cha.

Kuang Nam Da Nang Province: (14) Co Loa Tham (= Tham, = Co Loa Trung) Island.

Gialai Contum Province: (15) 50 km N An Phu, environs of Plei Ku, (16) 50 km N An Khe, (17) 65 km N An Khe, environs of Buon Luoi Biological Station.

Dak Lak (= Darlak) Province: (18) environs of Buon Ma Thuot.

Ninh Thung Province: (19) environs of Pham Rang.

Khanh Hoa Province: (20) environs of Nha Trang, Fei Canyon, (21) environs of Nha Trang, valley of Aiong River, (22) Hon Ba Mountain.

Lamdong Province: (23) environs of Dalat;

Tay Ninh Province: (24) Tan Bien near Lo Go Xa Mat Forest.

Ba Ria-Vung Tau Province: (25) Binh Chau, (26) Con Dao Island, (27) Hang Bai Khang Island.

Dong Nai Province: (28) Nam Cat Tien National Park, (29) environs of Ma Da Forest.

Kien Giang Province: (30) Thom Island, (31) Madau Island (not localised), (32) Dao Tho Chu (= Pangang) Island.

Systematic part

SCOLOPENDROMORPHA FROM THE INVESTIGATED LOCALITIES

Order Scolopendromorpha Leach, 1815

Subfamily Scolopocryptopinae Pocock, 1896

Genus *Scolopocryptops* Newport, 1844

Type-species: *Scolopocryptops melanostoma* Newport, 1844 (by subsequent designation of Lucas [1849]).

RANGE. North, Central and South America; China; Japan; Korea; Vietnam; Philippines; Sunda Archipelago; New Guinea; West Africa.

Scolopocryptops rubiginosus C.L.Koch, 1878

Scolopocryptops rubiginosa C. L. Koch, 1878: 792.

Otocryptops rubiginosa — Attems, 1930b: 259.

Otocryptops rubiginosa — Attems, 1953: 138.

Scolopocryptops rubiginosus — Shelley, 1992: 23.

Scolopocryptops rubiginosus — Schileyko, 1995: 73.

Scolopocryptops rubiginosus — Schileyko, 1998: 268.

Scolopocryptops rubiginosus — Schileyko, 2001: 427. Terra typica. China(?).

MATERIAL. Ha Tinh Province, Vu Quang: 1 spec., N 6686, 1200 m, log on ground, 08.08.1997, M.V. Kalyakin; 1 spec., N 6738, M 13, 08.1997, M.V. Kalyakin. 2 specimens in all.

ADDITIONAL MATERIAL. Central China, Shaanxi Prov., Fo Ping Nature Reserve, Panda area, 1600 m, 4 spec., 06–11.04.1999, V. Siniaev & A. Plutenko, N 7106. 4 specimens in all.

RANGE. Japan; China; Korea; Vietnam; North America (Minnesota and Wisconsin to Texas, USA); Brazil(?).

Scolopocryptops spinicaudus Wood, 1862

Scolopocryptops spinicaudus Wood, 1862: 39.

Otocryptops sexspinosus (in part) — Attems, 1930b: 260.

Scolopocryptops nipponicus — Shinohara, 1990: 62.

Otocryptops sexspinosus — Schileyko, 1992: 7.

Scolopocryptops sexspinosus — Schileyko, 1995: 75.

Scolopocryptops sp. — Schileyko, 1998: 263.

Scolopocryptops sexspinosus — Schileyko, 2001: 427.

Scolopocryptops spinicaudus — Shelley, 2002: 72.

Locus typicus. ?

MATERIAL. Vinh Phu Prov., Tam Dao: 4 spec., 800–1200 m, subtropical montane forest, 12–22.04.1986, S.I. Golovatch & L.N. Medvedev, N 6343; 2 spec., 1000–1200 m, subtropical forest, 18.08.–04.09.1989, D. Popkov, N 6341. Gialai Contum Prov., An Khe, environs of Buon Luoi Biological Station, tropical forest, litter, logs, 1 spec., N 6342, 12.1989, Y.M. Zaitsev. Lao Cai Prov., Sa Pa District: 1 spec., 6–8 km W of Sa Pa, 1800 m, rotten log with soil inside, 07.12.1996, M.V. Kalyakin, N 6615; 1 spec., 6–8 km W of Sa Pa, 1800 m, rotten branches cut from a height of 15 m, 11.12.1996, M.V. Kalyakin, N 6614; 2 spec., Hoang Lien National Park, W of Sa Pa, ca 2000 m, subtropical forest, 16–30.07.2007, S.I. Golovatch, N 7165. 11 specimens in all.

ADDITIONAL MATERIAL. Japan, Honshu Isl., Nagana-ken, Sanada-cho, 22–24.06.1994, O. Gorbunov & Y. Orita, 1 spec., N 6503. 1 specimen only.

RANGE. USA: west coast from southern Alaska to California, Colorado; Japan; China; Korea; Vietnam.

REMARKS. Previously, I [1992, 1995, 2001] referred to these nine Vietnamese specimens, as well as N 6503 from Japan, as *Scolopocryptops sexspinosus*. However, all these animals clearly show two basal antennomeres very sparsely covered with minute setae. According to Shelley [1992] and Shinohara [1990], as well as to my own observations, only one basal antennomere is “glabrous” in the true (= North American) *sexspinosus*. Based on all taxonomic characters, the above specimens fit well Shinohara’s [1990] concept of *Scolopocryptops nipponicus*, a species synonymised with *S. spinicaudus* Wood, 1862 by Shelley [2002].

Subfamily Scolopendrinae Leach, 1815

Genus *Scolopendra* Linnaeus, 1758

Type-species: *Scolopendra morsitans* Linnaeus, 1758.

RANGE. All tropical, subtropical and warm temperate regions.

Scolopendra calcarata Porat, 1876

Scolopendra calcarata Porat, 1876: 10.

Scolopendra calcarata — Haase, 1887: 51.

Scolopendra calcarata — Attems, 1930b: 33.

Scolopendra (*S.*) *calcarata* — Schileyko, 1992: 7.

Scolopendra (*S.*) *calcarata* — Schileyko, 1995: 77.

Scolopendra (*S.*) *calcarata* — Schileyko, 1998: 268.

Scolopendra (*S.*) *calcarata* — Schileyko, 2001: 434.

Terra typica. China (locality ?).

MATERIAL. Hoa Binh Prov., Hoa Binh, environs of Mai Tiao, secondary tropical forest, 1 spec., 11.12.1981, L.B. Rybalov, N 6409; Vinh Phu Prov., Tam Dao: 1 spec., 800–1200 m, subtropical forest, 12–22.04.1986, S.I. Golovatch, L.N. Medvedev, N 6411; 2 spec., 1000–1200 m, tropical forest, under a stone, 18.08.–14.09.1989, D. Popkov, N 6408. Ha Tay Prov.: 1 spec., 60 km NW Hanoi, environs of Ba Vi Mountain, 12.06.1997, N 6741; 2 spec., Hai Phong Distr., Cat Ba Isl., forest, under log, 05.01.1989, V.V. Janushev, N 6410. Central Laos, Xieng Khouang Prov., ca 9 km NW of Vieng Thong, old secondary forest with planted banana, shale clay black soil, under rocks and logs, alt. 891, 1 spec., 12.11.2006, I.V. Muratov, N 7160. 8 specimens in all.

RANGE. China; Northern Vietnam, Laos.

REMARKS. The specimen from Laos (N 7160) shows 4 (vs. 5–6) basal antennomeres virtually glabrous both dorsally and ventrally.

Scolopendra gracillima sternostriata Schileyko, 1995

Scolopendra gracillima Attems, 1898: 508.

Scolopendra gracillima — Attems, 1938: 335.

Scolopendra gracillima — Attems, 1953: 138, 145.

Scolopendra (*S.*) *gracillima* — Schileyko, 1992: 7.

Scolopendra (*S.*) *gracillima sternostriata* — Schileyko, 1995: 77.

Scolopendra (*S.*) *gracillima sternostriata* — Schileyko, 1998: 268.

Scolopendra (*S.*) *gracillima sternostriata* — Schileyko, 2001: 435.

Locus typicus. S Vietnam, Kuang Nam Da Nang Province, Tham Island (=Co Loa Tham Island, = Co Loa Trung Island).

MATERIAL. Ha Tay Prov., Hai Phong Distr., Cat Ba Isl., montane *Podocarpus* forest, N 5–8, 0–10 cm, 1 spec., 18.01.1989, V.V. Janushev, N 6421. Gialai Contum Prov.: 50 km N of An Khe, tropical forest, V.V. Janushev: 3 spec., 30.10.1979, N 6412; 1 spec., sample 2, 10–20 cm, 31.10.1979, N 6418; 1 spec., tropical forest, litter, 01.1990, Y.M. Zaitsev, N 6420; Thai Nguyen Plateau, 65 km N of An Khe, environs of Buon Luoi Biological Station, tropical forest: 3 spec., litter and soil 0–10 cm deep, 04–09.01.1981, A.Y. Druk, NN 6414, 6417, 6419; 4 spec., soil, 04.01.1980, T.K. Sergeeva, NN 6413, 6415; 1 spec., tropical forest, soil 0–10 cm deep, 24.01.1980, A.D. Pokarzhevsky, N 6422. Kuang Nam Da Nang Prov., Tham Isl., N 4, 20–30, 1 spec. (holotype), 29.03.1987, L. Filatova, N 6416. 15 specimens in all.

RANGE. Vietnam.

REMARKS. Attems [1938] recorded and redescribed this species based on material from Dalat, Vietnam, noting its close similarity to the Malaysian *S. gracillima* Attems, 1898. Later, he [1953] reported *S. gracillima* from “Pic de Lang Biang” as well.

According to Attems [1938], Vietnamese *S. gracillima* has, (a) very short paramedian sutures only on sterna 1–(7)17, (b) only 5 basal antennomeres glabrous dorsally, (c) an acutely angled posterior margin of the terminal tergum. However he did not allot the samples from Vietnam the taxonomic status of a new subspecies. Based on certain differences shown between *S. gracillima sternostriata* as described by Schileyko [1995] and the redescription of *S. gracillima* from Vietnam as given by Attems [1938], the latter taxon seems to be an intermediate form between *S. gracillima sternostriata* and the nominate subspecies.

Scolopendra mirabilis (Porat, 1876)

Cormocephalus mirabilis Porat, 1876: 18.

Cormocephalus acanthophorus — Kohlrausch, 1881: 89.

Trachycormocephalus mirabilis — Attems, 1930b: 53.

Scolopendra mirabilis — Lewis, 1986: 26.

Scolopendra (*Trachycormocephalus*) *mirabilis* — Zaleskaja & Schileyko, 1991: 16.

Scolopendra (*Trachycormocephalus*) *mirabilis* — Zaleskaja & Schileyko, 1992: 368.

Scolopendra (*Trachycormocephalus*) *mirabilis* — Schileyko, 1992: 7.

Scolopendra (*Trachycormocephalus*) *mirabilis* — Schileyko, 1995: 78.

Scolopendra (*Trachycormocephalus*) *mirabilis* — Schileyko, 1998: 268.

Scolopendra (*Trachycormocephalus*) *mirabilis* — Schileyko, 2001: 435.

Scolopendra mirabilis — Lewis, 2001: 8.

Locus typicus. Unknown.

MATERIAL. Ha Tay Prov., Hai Phong Distr., Cat Ba Isl., forest, under logs, 1 spec., 05.01.1989, V.V. Janushev, N 6190. 1 specimen only.

RANGE. Palestine; Mesopotamia; Syria; Iran; Iraq; Middle Asia; Caucasus; Vietnam.

REMARKS. Bearing in mind the distribution of this species, it is surprising to find a single specimen on a small island off the coast of North Vietnam, where it might have been introduced.

In this specimen, the left terminal prefemur is abnormal in having 5 corner spines in place of a corner process.

Scolopendra morsitans Linnaeus, 1758

Scolopendra morsitans Linnaeus, 1758: 638.
Scolopendra morsitans — Haase, 1887: 52.
Scolopendra morsitans — Pocock, 1891c: 409.
Scolopendra morsitans — Attems, 1930b: 23.
Scolopendra morsitans — Attems, 1938: 334.
Scolopendra morsitans — Attems, 1953: 138, 144.
Scolopendra (*S.*) *morsitans* — Schileyko, 1992: 7.
Scolopendra (*S.*) *morsitans* — Schileyko, 1995: 75.
Scolopendra (*S.*) *morsitans* — Schileyko, 1998: 268.
Scolopendra (*S.*) *morsitans* — Schileyko, 2001: 433.
Scolopendra morsitans — Lewis, 2001: 6.
Scolopendra morsitans — Lewis, 2002a: 81.

Locus typicus. Unknown.

MATERIAL. Hai Phong District, Bai The Long Archipelago, Dongkho Isl., on ground, 1 spec., 21.03.1987, V.V. Janushev, N 6009. Ninh Thung Prov., 17 km W of Pham Rang, under stone, 1 spec., 04.12.1979, V.V. Janushev, N 6000. Tay Ninh Prov., Tan Bien near Lo Go Xa Mat Forest, in house, 1 spec., 10.2001, A. Borisenko, N 7001. Ba Ria-Vung Tau Prov., Binh Chau, dry *Dipterocarpus* forest, 1 spec., 29.06.1994(?), S. Spiridonov, N 7012. 4 specimens in all.

ADDITIONAL MATERIAL. India, Rajasthan, Sambar, under *Euphorbia* bush, 20.10.1989, 1 spec., A.V. Kompantsev, N 6559. Sri Lanka, Candy, ? 03.1900, 1 spec., Teplov, N 6822. Philippines, Cebu, Maya, Daanbantayan, young dry forest on rocky slope; limestone, clay, black soil on rocks; alt. 53 m, 1 spec., 15.12.2006, Nenito Otero II & I.V. Muratov, N 7162. 3 specimens in all.

RANGE. All tropical and warm temperate regions of the Palearctic (North Africa, Italy, Turkey); Africa; Madagascar; South and South East Asia (India, Sri Lanka, Indochina, Indonesia, China, Vietnam); Philippines; Australia; Seychelles(?); Mauritius, Rodrigues, Réunion Island and the Comoros. All records in the New World seem to be the result of introductions.

REMARKS. Attems [1938, 1953] referred to the following localities: “Vinh (N. Annam); Col des Nuages (Nhatrang); Càuda; Dong Trang (Nhatrang); Ban Methuot (Darlac); Nanhoa; Bangoi; Hagiang (Ht. Tonkin); Dalat, Camay. Mt. Cardameno. Atoll Tizard. Luang Prabang (Laos); Savannakhet (Laos)”.

Scolopendra subspinipes subspinipes Leach, 1815

Scolopendra subspinipes Leach, 1815: 383.
Scolopendra subspinipes — Kohlrausch, 1881: 96.
Scolopendra subspinipes meyeri, flavicornis, repens — Haase, 1887: 49.
Scolopendra subspinipes subspinipes — Attems, 1930b: 29.
Scolopendra subspinipes subspinipes — Attems, 1938: 334.
Scolopendra subspinipes mutilans — Attems, 1938: 334.
Scolopendra subspinipes — Attems, 1953: 138, 145.
Scolopendra subspinipes mutilans — Attems, 1953: 138.
Otostigmus puncticeps — Attems, 1953: 146.
Otostigmus politoides — Attems, 1953: 147.
Scolopendra subspinipes subspinipes — Lewis, 1991: 337.
Scolopendra subspinipes subspinipes — Zaleskaja & Schileyko, 1991: 13.

Scolopendra (*S.*) *subspinipes* — Schileyko, 1992: 7.
Scolopendra (*S.*) *subspinipes* — Schileyko, 1995: 75.
Scolopendra (*S.*) *subspinipes* — Schileyko, 1998: 268.
Scolopendra (*S.*) *subspinipes mutilans* — Schileyko, 1998: 268.
Scolopendra (*S.*) *subspinipes multidentis* — Schileyko, 1998: 268.
Scolopendra subspinipes — Shelley, 2000: 42.
Scolopendra (*S.*) *subspinipes subspinipes* — Schileyko, 2001: 434.
Scolopendra subspinipes subspinipes — Lewis, 2002a: 83.

Scolopendra subspinipes — Shelley, 2002: 38.

Scolopendra subspinipes subspinipes — Lewis, 2004: 30–33. Locus typicus. Unknown.

MATERIAL. Ha Tay Prov., Hai Phong Distr., Cat Ba Isl., Chung Chang, 1 spec., N 6016, 01.1989, T.K. Sergeeva. Vinh Phu Prov., environs of Tam Dao: 1 spec., N 6299, subtropical forest, 09–10.12.1985, D.A. Krivolutsky; 3 spec., NN 6298, 6304, 6305, tropical forest, 800–1200 m, 12.–22.04.1986, S.I. Golovatch, L.N. Medvedev. Gialai Contum Prov., 50 km N of An Khe, tropical forest, rotten wood: 1 spec., N 6012, 30.10.1979, V.V. Janushev; 1 spec., N 6014, same locality, 17.11.1979, V.V. Janushev; 65 km N An Khe, Buon Luoi Biological Station, 2 spec., N 6292, 12.1989, Y.M. Zaitsev. Daklak Prov., 30 km SSW of Buon Ma Thuot, 1 spec., N 6300, 28.04.1986, S.I. Golovatch. Kien Giang Prov., Thom Isl., litter, 1 spec., N 6296, 13.04.1987, V.V. Janushev. Quang Binh Prov., Minh Hoa Distr., environs of Yen Hop, ca. 10 km from border with Laos, 100–500 m, 7 spec., N 6756, 04.1999, M.V. Kalyakin. Dong Nai Prov., 150 km NE Hochiminh City, Nam Cat Tien Natn. Park, 1 spec., N 7084, 7–24.05.2006, S.I. Golovatch. Khanh Hoa Prov., Hon Ba Mountain (1400 m), 2 spec., 20(?) 04.2003, M.V. Kalyakin, N 7025. Annam (without precise locality), 1 spec., N 6842, det. V. Muralewicz. 21 specimens in all.

ADDITIONAL MATERIAL. SE Thailand: Ko Chang Island, SW coast, environs of Treehouse, 1 spec., 1–5.11.2002, P. Kacarek, N 7125. Singapore: 1 spec., 1889, Isaev, N 6845; 1 spec., 02.04.1889, N 6839. Malacca, Moar River, 1 spec., 1897, V.M. Desnitzky, N 6843. Philippine Islands, Mindanao Isl., 1 spec., 1889, det. V. Muralewicz, N 6844. China, Uchan, Lake Dunku, 1 spec., 14.07.1958, N 6294. Hongkong [=Siangan], 1 spec., N 6840. Japan: Kurjau(?), 1 spec., Isaev, N 6302; Unzen, 1 spec., 05.1889, N 6306; Ryukyu Isl., Okinawa-jima Id, Yona, 1–4.07.1994, 1 spec., O. Gorbunov, N 6502. 10 specimens in all.

RANGE. All tropical and subtropical regions of Eurasia (including the South of the Russian Far East), except for the Mediterranean region. A few peripheral localities in Africa. Philippine Islands. Madagascar. Seychelles. Comoros. Rodrigues Isl. Oceania. Bermuda. Introduced to various parts of the Caribbean. Lewis [2007] also noted “South America. Old records from Australia and New Zealand”.

REMARKS. Attems [1938] wrote, “Diese sonst in Aufsammlungen aus Asien so häufige Art ist nur durch zwei Exemplare von Bana und Réam (Cambodja) vertreten”, but later [1953] he added another locality, “Hué (Annam) (Donghoi), S. Annam”. In the 1953 paper he also noted such other subspecies as *S. subspinipes mutilans* L. Koch, 1878 from Bana. Schileyko [1995] pointed out the problematic character of dividing *S. subspinipes* into some of the subspecies. Thus, *S. subspinipes mutilans* and *S. subspinipes multidentis* Newport, 1844, both reported from Vietnam by Schileyko [1998], actually represent the nominate form, as noted earlier [Schileyko, 2001] and confirmed here.

Since Lewis [2004] regarded *Otostigmus puncticeps* Attems, 1953 and *O. politoides* Attems, 1953 as junior synonyms of *Scolopendra subspinipes*, such localities as “Cambodie, Ream, Sre Umbell” and “Vietnam, Tongking” must also be referred to as valid for *S. subspinipes*.

Scolopendra subspinipes dehaani Brandt, 1840

Scolopendra De Haani Brandt, 1840: 152.
Scolopendra subspinipes var. *de haanii* — Pocock, 1891c: 409.
Scolopendra subspinipes dehaani — Attems, 1930b: 31.
Scolopendra subspinipes dehaani — Attems, 1938: 334.
Scolopendra subspinipes dehaani — Attems, 1953: 138.
Scolopendra (*S.*) *subspinipes dehaani* — Schileyko, 1998: 268. Locus typicus. Java Island.

MATERIAL. Cambodia, Rattanakiri Prov., 4 km E of Banlung, at NW bank of Yeak-Laom Lake, tropical forest, under dead

logs, 300 m, 1 spec., 26–30.09.1998, A.G. Kuznetsov, N 7004. 1 specimen only.

ADDITIONAL MATERIAL. Japan, Okinawa Isl., Ia(?) river, 2 spec., 1993, S.V. Kudriavzev & S.V. Mamet, N 6293. Indonesia, Sumatra Isl., Sumatera Utara, Berastagi, Gunung Sibayak(?), 1 spec., 06.02.2001, I.H. Tuf & J. Ozanova, N 7089. 3 specimens in all.

Material deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg: “*Scolopendra subspinipes dehaani*, Brandt, Java, leg. Leydev”, 1 adult spec. (holotype), N 350; “*Scolopendra subspinipes* Leach, v[ariation]. *dehaani* (?) Brandt, Siam, Sala-pa-Khat, leg. A. Kaznakov [А. Казнаковъ], (опр. В. Солдатовъ ? [det. V. Soldatov ?])”, 2 subadult spec., N 351 (new N 130–96 [1996]).

RANGE. Indonesia (Sumatra Isl., Java Isl.); Japan; Cambodia; Vietnam; Malacca. Khana [2003] reported it also from India (Western and Eastern Himalaya); Myanmar; Bangladesh; China; Andaman and Nicobares Isls; Thailand.

REMARKS. Attems [1938] reported the following localities: “Kouang Tcheu Wan; Baie d’Along (Tonkin); Ban Methuot (Darlac); Kontum; Vinh (N. Annam); Laos: Takek; Vientiane; Savannakhet; Ream (Cambodja); Poulo Condore (Cochinchina)”.

Scolopendra subspinipes cingulatoides Attems, 1938

Scolopendra subspinipes cingulatoides Attems, 1938: 334.

Scolopendra subspinipes cingulatoides — Attems, 1953: 138.

Scolopendra (*S.*) *subspinipes cingulatoides* — Schileyko, 1998: 268.

Scolopendra (*S.*) *subspinipes cingulatoides* — Schileyko, 2001: 434.

Locus typicus. Vietnam, Haut Tonkin, Ha Giang.

MATERIAL. Ha Tay Prov., 60 km NW Hanoi, Ba Vi Mountain, 1 spec., 05.1995, G.V. Kuznetsov, N 6531. Ha Tinh Prov., environs of Vu Quang, 2 spec., 29.08.–26.09.1997, M.V. Kalyakin, NN 6754, 6755. Bac Thai (Thai Nguyen) Prov., Phu Luong, Quang Chu (?), on ground, 1 spec., N 7010, 27.06.1985, G.V. Kolonin. 4 specimens in all.

RANGE. Vietnam (Ha Giang, Ha Tay, Ha Tinh and Bac Thai provinces); Laos (Takek).

Genus *Asanada* Meinert, 1886

Type-species: *A. brevicornis* Meinert, 1886 (by monotypy).

RANGE. Palestine; Sudan; French Guinea (= Republic of Guinea); Nigeria; Congo; Socotra Isl.; South Africa; India (Bombay); Himalaya; Reef Island; Andaman Islands; China; N Myanmar; Central and South Vietnam; New Guinea; Philippines; Australia (NE and Queensland).

Asanada brevicornis Meinert, 1886

Asanada brevicornis Meinert, 1886: 189.

Asanada brevicornis — Haase, 1887: 66.

Asanada brevicornis — Pocock, 1891c: 412.

Asanada brevicornis — Attems, 1930b: 123.

Asanada brevicornis — Attems, 1938: 336.

Asanada brevicornis — Attems, 1953: 138.

Asanada brevicornis — Schileyko, 1992: 7.

Asanada sinaitica — Schileyko, 1992: 7.

Asanada brevicornis — Schileyko, 1995: 78.

Asanada brevicornis — Schileyko, 1998: 268.

Asanada brevicornis — Schileyko, 2001: 436.

Locus typicus. Himalayas: Kulu.

MATERIAL. Gialai Contum Prov., 50 km N An Phu, Plei Ku, *Eupatorium*, soil, 1 spec., 24.11.1979, V.V. Janushev, N 6551. Ba Ria-Vung Tau Prov., Con Dao Isl., litter, 1 spec., 04.04.1987, L. Filatova, N 6732. Khan Hoa Prov., environs of Nha Trang: 2 spec., Fei Canyon, forest, leaf litter, samples 4–5, 11–14.08.1996,

T.K. Sergeeva, NN 6734, 6735; 1 spec., valley of Aiong River, leaf litter, sample 9, 01.09.1996, T.K. Sergeeva, N 6736. Lamdong Prov., Dalat, “serpentine”, substation 2, forest, leaf litter, sample 7, 3 spec., 11.08.1996, T.K. Sergeeva, N 6737. Kien Giang Prov., Dao Tho Chu (=Pangang) Isl., litter, 1 spec., 09.04.1987, L. Filatova, N 6733. 9 specimens in all.

RANGE. India (Bombay, Delhi, Haryana, Gujarat, Rajasthan, Maharashtra); Himalayas: Kulu (locus typicus); China; Myanmar; Central and South Vietnam; Reef Island; Andaman Islands; New Guinea; Australia: Queensland, Saibai Island; North East Australia, Iron Range, Line Hill.

REMARKS. Attems [1938] reported this species solely from “Caûda (Nhatrang)”.

It is noteworthy that Attems [1930b] marked the total absence of these spurs as one of the diagnostic features of *A. brevicornis*. However, there is no information about the presence or absence of tarsal spurs on the locomotory legs in the original descriptions of both *Asanada* and *A. brevicornis* as given by Meinert [1886] (see also Schileyko [1995]). Since only juveniles have no tarsal spurs on the locomotory legs, such a character can be suggested as being correlated with age. So the two juveniles identified by Schileyko [1992] as *Asanada sinaitica* Chamberlin, 1921 actually belong to *A. brevicornis*.

Subfamily Otostigminae Kraepelin, 1903

Genus *Otostigmus* Porat, 1876

Type-species: *O. carinatus* Porat, 1876 (by subsequent designation of Pocock [1891a: 229]).

RANGE. All tropical and subtropical countries.

Subgenus *Otostigmus* (s.str.) Porat, 1876

RANGE. Africa; India; South East Asia (including the southern part of the Russian Far East); Australia and New Zealand.

REMARKS. According to Lewis [2004], who reexamined the type material of *O. armatus* Attems, 1953, two of the available syntypes represent *O. multidentis* Haase, 1887 (also recorded from Vietnam), while one more, incomplete syntype may actually be *O. scaber* Porat, 1876. Since I still believe the status of *O. armatus* as remaining unclear (see also Lewis [2004], who did not select a lectotype), this species is included in the above key for formal reasons alone.

Otostigmus (*O.*) *aculeatus* Haase, 1887

Fig. 2.

Otostigmus aculeatus Haase, 1887: 71.

Otostigmus (*O.*) *aculeatus* — Attems, 1930b: 149.

Otostigmus aculeatus — Attems, 1938: 337.

Otostigmus aculeatus — Attems, 1953: 138.

Otostigmus (*O.*) *aculeatus* — Schileyko, 1992: 7.

Otostigmus (*O.*) *ziesel* Schileyko, 1992: 10, **syn.n.**

Otostigmus (*O.*) *aculeatus* — Schileyko, 1995: 83.

Otostigmus (*O.*) *ziesel* — Schileyko, 1995: 85.

Otostigmus (*O.*) *aculeatus* — Schileyko, 1998: 268.

Otostigmus (*O.*) *ziesel* — Schileyko, 1998: 268.

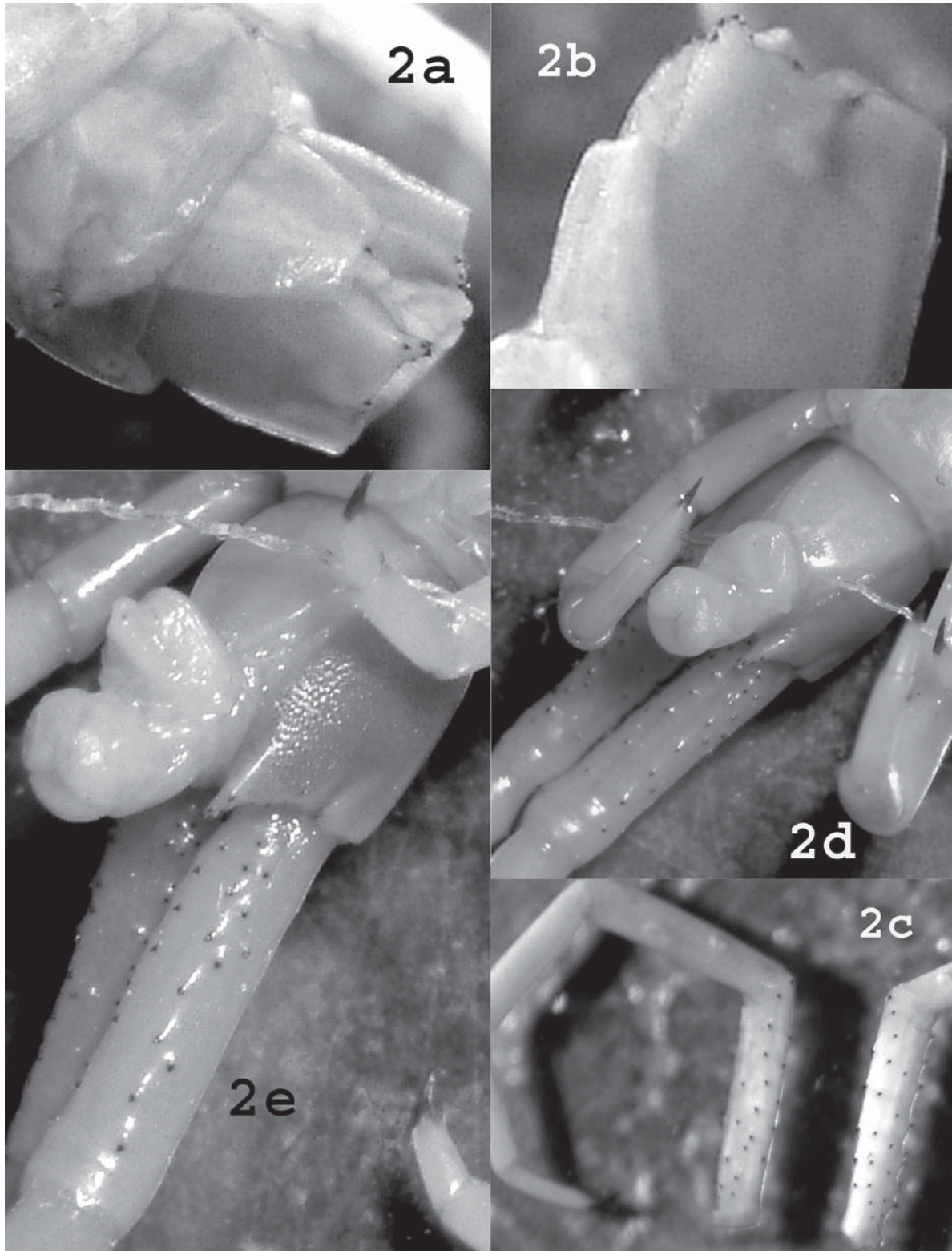
Otostigmus (*O.*) *aculeatus* — Schileyko, 2001: 430.

Otostigmus (*O.*) *ziesel* — Schileyko, 2001: 431.

Otostigmus aculeatus — Lewis, 2001: 28.

Terra typica. Java Island.

MATERIAL. Hoa Binh Prov.: 2 spec., 10 km E of Hoa Binh, secondary tropical forest, edge, litter, 04.10.1979, V.V. Janushev, N 6360; 1 spec., 3 km S of Hoa Binh, manihot plantation, 0–10 cm



Figs 2a–e. *Otostigmus (O.) ziesel* Schileyko, 1992 (= *Otostigmus (O.) aculeatus* Haase, 1887; syn.n.), holotype: 2a — posterior end of body, ventral; 2b — right coxopleural process, lateral; 2c — terminal legs, medial (= interior); ZMMU N 6631: 2d — posterior end of body + basal articles of terminal legs, ventral; 2e — posterior end of body + basal articles of left terminal leg, ventrolateral.

Рис. 2a–e. *Otostigmus (O.) ziesel* Schileyko, 1992 (= *Otostigmus (O.) aculeatus* Haase, 1887; syn.n.), голотип: 2a — задний конец тела вентрально; 2b — правый коксоплевральный вырост латерально; 2c — ноги последней пары медиально; ZMMU N 6631: 2d — задний конец тела + базальные членики последних ног вентрально; 2e — задний конец тела + базальные членики левой последней ноги вентролатерально.

deep, 02.10.1979, V.V. Janushev, N 6369; Hoa Binh Prov., Mai Tiao Distr., environs of Van Mai: 1 spec., secondary tropical rainforest, 07.12.1981, L.B. Rybalov, N 6371; 5 spec., secondary tropical rainforest, 11.12.1981, L.B. Rybalov, NN 6383, 6388; 3 spec., bamboo forest, 15.12.1981, L.B. Rybalov, N 6370; 2 spec., 13.12.1981, L.B. Rybalov, N 6359. Vinh Phu Prov., ca 100 km N of Hanoi, environs of Tam Dao, subtropical mountain forest, 1000–1200 m, under stones, 5 spec., 18.08.–04.09.1989, D.V. Popkov, N 6361. Ha Tay Prov., 60 km NW Hanoi, environs of Ba Vi Mountain, 1 spec., 12.06.1997, N 6746. Hai Phong Distr., Cat Ba Isl.: 1 spec., forest, under logs, 05.01.1989, V.V. Janushev, N 6384; 3 spec., *Lechea* plantation, 0–10 cm deep, 17.01.1989, V.V. Janushev, N 6367; 1 spec., under stone, 28.12.1981, V.V. Janushev, N 6362; montane *Podocarpus* forest, samples 5–8, 0–10 cm, 1 spec., 18.01.1989, V.V. Janushev; N 6368; Hai Phong Distr., Dongkho Isl.: 1 spec., “profile” T 12 (13–16), litter, 21.03.1987, L. Filatova, N 6374; 1 spec., “profile” T 12 (13–16), soil, 21.03.1987, L. Filatova, N 6373; 1 spec., “profile” G 31 (25–28), 23.03.1987, L. Filatova, N 6372. Kuang Nam Da Nang Prov., Co Loa Tham (= Co Loa Trung) Isl., “profile” T9, 1 spec., 29.03.1987, L. Filatova, N 6499. Vietnam (without precise locality), 1988(?), 5 spec., N 6381. Gialai Contum Prov., 50 km N of An Khe, tropical forest: 1 spec., rotten wood, 30.10.1979, V.V. Janushev, N 6365; 1 spec., sample 2, 10–20 cm deep, 31.10.1979, V.V. Janushev, N 6366; 1 spec., rotten wood, soil, litter, 08.11.1979, V.V. Janushev, N 6389; Gialai Contum Prov., 65 km N of An Khe, environs of Buon Luoi Biological Station, Thai Nguyen: 2 spec. (holotype of *O. ziesel* N 6378 and N 6379), tropical rainforest, litter, 23.01.1980, A.D. Pokarzhevsky; 1 spec. (paratype of *O. ziesel*), in house, 21.01.1980, A.D. Pokarzhevsky, N 6380; 1 spec., tropical forest, ground, 02.01.1980, A.D. Pokarzhevsky; 1 spec., tropical forest, stump, under bark, 28.12.1980, A.Y. Druk, N 6386; 1 spec., tropical forest, soil 10–20 cm, 07.01.1981, A. Druk, N 6385; 1 spec., tropical forest, soil 0–10 cm, 07.01.1981, A. Druk, N 6387. Kien Giang Prov., Madau Isl., under stone, 1 spec., 01.01.1989, V.V. Janushev, N 6364. Dong Nai Prov., Ma Da Forest: 3 spec., *Dipterocarpus* area, soil samples, 17–19.10.1994, N.V. Beliaeva, NN 6630–6632; 1 spec., rotten wood, 06.12.1989, T.K. Sergeeva(?), N 6382; 1 spec., sample 15, 14.06.1995, T.K. Sergeeva, N 6546; Dong Nai Prov., Nam Cat Tien Natn. Park: 1 spec., forest, 09–10.2004, S.I. Golovatch & A. Anichkin, N 7082; 11 spec., soil samples, 01.06.–23.11.2005, A. Anichkin, NN 7095, 7097, 7100–7102, 7108, 7110–7113, 7115. Kien Giang Prov., Dao Tho Chu (=Pangang) Isl., 1 spec., 09.04.1987, L. Filatova, N 6363. 66 specimens in all.

RANGE. Java; China; Hongkong; Vietnam; Laos.

REMARKS. Attems [1938] reported the following localities: “Kontum (C. Annam), Hongay, Baie d’Along (Tonkin). Takek (Laos); Vientiane (Laos); Savannakhet (Laos).”

Schileyko [1995] noted some minor differences between the material of *O. aculeatus* which he investigated, its original description and Attems’ [1930b] redescription. This is one of the most widespread species in this region, being quite variable. In my first paper on the fauna of Vietnam, I [1992] described *O. ziesel* Schileyko, 1992 (from Buon Luoi, Gialai Contum Prov.), noting its close resemblance to *O. aculeatus*. All the material of both *O. aculeatus* and *O. ziesel* which I have (about 70 specimens) has been re-investigated to clarify the range of intraspecific variability of the taxonomically important characters. In contrast to what was stated as a distinctive feature of *O. ziesel* versus *O. aculeatus*, both have two, not three, ventromedial rows of spines on the terminal prefemur, with one of the rows being median or dorsomedian in position (Fig. 2c; see also fig. 2d in Schileyko [1992] and fig. 13c in Schileyko [1995]). So this presumed difference does not hold. In 1995, I wrote (p. 85): “[*ziesel*] differs ... from *O. aculeatus* by the shape and armament [= spinulation] of the coxopleural process, as well as by the presence of femoral spurs”. As regards the femoral spurs, in fact they are often absent in “*ziesel*” as well, whereas certain variation in both structure and spinulation of the

coxopleural process does exist (Figs 2a, 2b, 2d, 2e; see also fig. 2c in Schileyko [1992] and figs 11b and 13b in Schileyko [1995]). However, now I believe this variation to be clearly intraspecific. Lewis [2001], using specimens from Vietnam and China, provided more evidence concerning the variability of the above taxonomic characters, questioning the validity of *O. ziesel*. In summary, *O. ziesel* Schileyko, 1992 is considered here to be conspecific with *O. aculeatus* Haase, 1887, syn.n.

Otostigmus (O.) amballae Chamberlin, 1913

Otostigmus amballae Chamberlin, 1913: 1974.
Otostigmus (O.) amballae — Attems, 1930b: 153.
Otostigmus (O.) amballae — Lewis, 1992: 438.
Otostigmus (O.) amballae — Schileyko, 1992: 7.
Otostigmus (O.) amballae — Schileyko, 1995: 81.
Otostigmus (O.) amballae — Schileyko, 1998: 268.
Otostigmus (O.) amballae — Schileyko, 2001: 429.
 Locus typicus. India (Amballa).

MATERIAL. Ha Son Binh Prov., Hoa Binh, Mai Tiao Distr., environs of Van Mai, secondary tropical rainforest, 1 spec., 11.12.1981, L.B. Rybalov, N 6391. Hai Phong District, Dongkho Island: 1 spec., “profile” T 12 (13–16), soil, 21.03.1987, L. Filatova, N 6392; 1 spec., soil, 22.03.1987, L. Filatova, N 6393. 3 specimens in all.

ADDITIONAL MATERIAL. India, Himachal Pradesh, Keylong City, 3100–3400 m, 12–17.06.1999, 1 spec., Y.M. Marusik, N 7019. Thailand, Khao Sok, N.P., 11.1995, 1 spec., M. Mostovskii, N 7055. 2 specimens in all.

RANGE. India; Nepal; Vietnam; Thailand.

Otostigmus (O.) astenus (Kohlrausch, 1881)

Branchiotrema astenus Kohlrausch, 1881: 72.
Otostigmus barbouri Chamberlin, 1914: 386.
Otostigmus moluccanus Chamberlin, 1914: 388.
Otostigmus glaber Chamberlin, 1920: 12.
Otostigmus (O.) astenus — Attems, 1930b: 143.
Otostigmus (O.) barbouri — Attems, 1930b: 144.
Otostigmus (O.) moluccanus — Attems, 1930b: 142.
Otostigmus (O.) glaber — Attems, 1930b: 143.
Otostigmus astenus — Attems, 1953: 138.
Otostigmus astenus — Attems, 1938: 337.
Otostigmus (O.) glaber — Lewis, 1992: 441.
Otostigmus (O.) moluccanus — Schileyko, 1992: 7.
Otostigmus (O.) moluccanus — Schileyko, 1995: 81.
Otostigmus (O.) moluccanus — Schileyko, 1998: 268.
Otostigmus (O.) astenus — Schileyko, 1998: 268.
Otostigmus (O.) moluccanus — Schileyko, 2001: 424, 429.
Otostigmus (O.) astenus — Schileyko, 2001: 424.
Otostigmus (O.) astenus — Lewis, 2001: 21.
 Terra typica. Unknown.

MATERIAL. Vinh Phu Prov., environs of Tam Dao, 800–1200 m, subtropical forest, 9 spec., 12–22.04.1986, S.I. Golovatch & L.N. Medvedev, N 6390. 9 specimens in all.

ADDITIONAL MATERIAL. India, Himachal Pradesh, Y.M. Marusik: 5 spec., Kothi Village and environs, 2300–2600 m, 29.05.–08.06.1999, N 7009; 2 spec., Keylong City, 3100–3400 m, 12–17.06.1999, N 7020; 1 spec., Sissu Village, 3150–3500 m, 8–10.06.1999, N 7021. 8 specimens in all.

RANGE. India; Nepal; Cambodia; Vietnam; Indonesia; Moluccas; Irian Jaya (= Dutch New Guinea); Fiji Islands; Hawaii Islands; Tonga Islands; Solomon Islands (Rennell Island); Bismarck Archipelago (= New Britain).

VARIABILITY. 2 specimens from Tonga (N 6351) show quite open saucer-shaped spiracles (without the usual well-developed atrium), which are here like in *Ethmostigmus* Newport, 1845. All other studied specimens have spiracles with a normal atrium.

REMARKS. Attems [1938] reported this species from “Ream (Cambodja)”. This widespread species is quite variable as regards the configuration of the tooth margin of the forcipular tooth plates, the length of the sternal paramedial sutures, the shape of sternum 21 and the number of locomotory legs which bear two tarsal spurs.

Schileyko [1995] identified nine specimens (N 6390) from Tam Dao as belonging to *O. moluccanus* Chamberlin, 1914. However, Lewis [2000] provided important evidence concerning the intraspecific variation of some characters in *Otostigma*. Based on this evidence, as well as my own observations, I re-investigated these specimens of “*moluccanus*” and now refer them to *O. astenus*. In addition, Lewis [2002b] restudied the holotype of *O. moluccanus* and regarded this name as a *nomen dubium*, noting (p. 1695) that it “well may be an immature *O. astenus*”. The above nine specimens also are juveniles and are very similar to the holotype of *O. moluccanus*. The only difference they show seems to lie in very short sternal paramedian sutures (so poorly visible that Schileyko [1995] reported their absence), whereas in the holotype these sutures are “two-thirds to three-quarters of sternites in mid-body region” [Lewis, 2002b]. However, such variability seems to be of little significance, the more so as the material is represented by juveniles only.

Otostigma (O.) loriae loriae Silvestri, 1894

Otostigma loriae Silvestri, 1894: 627.

Otostigma bakeri Chamberlin, 1921: 51.

Otostigma (O.) loriae — Attems, 1930b: 140.

Otostigma (Parotostigma) bakeri — Attems, 1930b: 155.

Otostigma (O.) loriae — Schileyko, 1992: 7.

Otostigma (O.) loriae loriae — Schileyko, 1995: 81.

Otostigma (O.) loriae loriae — Schileyko, 1998: 269.

Otostigma (O.) loriae loriae — Schileyko, 2001: 430.

Locus typicus. New Guinea (Moroca).

MATERIAL. Hoa Binh Prov., Hoa Binh, Mai Tiao Distr., 1 spec., environs of Van Mai, bamboo forest, 15.12.1981, L.B. Rybalov, N 6404; 2 spec., environs of Van Mai, secondary tropical rainforest, 07.12. 1981, L. B. Rybalov, N 6405. Ha Tinh Prov., environs of Vu Quang, 400 m, 1 spec., 08.1997, M.V. Kalyakin, N 6740. Gialai Contum Prov.: 1 spec., 5 km N of An Khe, dry slope, under stone, 21.10.1979, V.V. Janushev, N 6400; Gialai Contum Prov., 65 km N of An Khe, environs of Buon Luoi Biological Station: 1 spec., Thai Nguyen Plateau, tropical rainforest, 0–10 cm, 24.04.1980, A.D. Pokarzhevsky, N 6406; 1 spec., tropical forest, litter, 30.12.1980, T.K. Sergeeva, N 6401; 2 spec., tropical forest, soil, 0–10 cm, No. 3, 04.01.1981, T.K. Sergeeva, N 6397; 1 spec., tropical forest, soil, 0–10 cm deep, 07.01.1981, A.Y. Druk, N 6407. Khanh Hoa Prov., Nha Trang, Fei Canyon, leaf litter, 11.08.1996, T.K. Sergeeva, 1 spec., N 6834; Ba Ria-Vung Tau Prov., Hang Bai Khang Isl., 1 spec., tree hole, 02.04.1987, L. Filatova, N 6402; 1 spec., summit, 279 m, “profile” N4 T1, 06.04.1987, L. Filatova, N 6403. Lamdong Prov., environs of Dalat, “serpentine”, substation 2, forest, leaf litter, sample 7, 1 spec., 21.08.1996, T.K. Sergeeva, N 6749. Tay Ninh Prov., Lo Go Xa Mat Forest, close to border with Cambodia, plain humid *Dipterocarpaceae* forest, in half-rotten log, 1 spec., 19.10.2001, A. Borisenko, N 7002. Dong Nai Prov., Cat Tien Natn. Park: 4 spec., forest, 09–10.2004, S. Golovatch & A. Anichkin, N 7081; 1 spec., sample 57, 08–23.11.2005, A. Anichkin, N 7109. Vietnam (with no other date), 1 spec., N 6398. 21 specimens in all.

ADDITIONAL MATERIAL. W Malaysia, Pahang, Genting Highlands, Awana, 1150 m, 3.04.1993, I. Löbl & F. Calame, 1 spec., N 6458. Indonesia, Sumatra Isl., Tahura “Natn. Park”, 06.02.2001, I. Tuf & J. Ožanova, 1 adult, N 7099. 2 specimens in all.

RANGE. New Guinea (Moroca); Aru Islands (Doboe); Philippines; Vietnam; Cambodia.

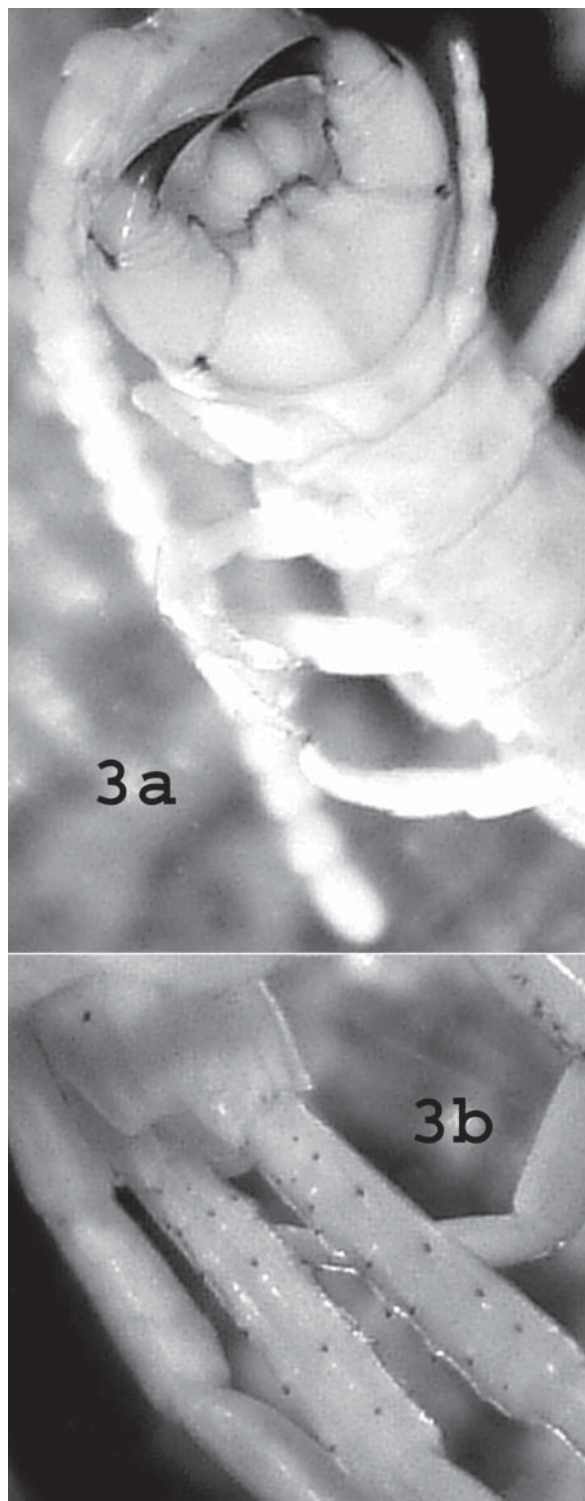


Fig. 3. *Otostigma (O.) politus* Karsch, 1881, ZMMU N 6356: 3a — anterior end of body ventral; 3b — posterior end of body ventral.

Fig. 3. *Otostigma (O.) politus* Karsch, 1881, ZMMU N 6356: 3a — передний конец тела, вентрально; 3b — задний конец тела, вентрально.

Otostigmus (O.) loriae nordicus Schileiko, 1995*Otostigmus (O.) loriae nordicus* Schileiko, 1995: 83.*Otostigma (O.) loriae nordicus* — Schileiko, 1998: 269.*Otostigmus (O.) loriae nordicus* — Schileiko, 2001: 430.

Locus typicus. N Vietnam, Hai Phong Distr., Cat Ba Island.

MATERIAL. Ha Tay Prov., 60 km NW Hanoi, environs of Ba Vi Mountain, 1 spec., 12.06.1997, N 6747. Hai Phong Distr., Cat Ba Isl., primary mountain forest, under rotten log, 1 spec. (holotype), 15.01.1989, V.V. Janushev, N 6399. Dong Nai Prov., Ma Da Forest, 1 spec., sample 10, 06.06.1995, T.K. Sergeeva, N 6545. 3 specimens in all.

RANGE. Vietnam.

Otostigmus (O.) politus politus Karsch, 1881

Fig. 3.

Otostigmus politum Karsch, 1881: 62.*Otostigma politum* — Haase, 1887: 75.*Otostigmus completus* Chamberlin, 1920: 15.*Otostigmus (O.) politus politus* — Attems, 1930b: 149.*Otostigmus politus mandschurius* Verhoeff, 1942: 186.*Otostigmus frigidus* Verhoeff, 1942: 186.*Otostigmus frigidus takakuwai* Verhoeff, 1942: 188.*Otostigmus (O.) politus* — Lewis, 1991: 342.*Otostigmus (O.) politus* — Zaleskaja & Schileiko, 1991: 22.*Otostigmus (O.) politus* — Schileiko, 1992: 7.*Otostigmus (O.) politus* — Schileiko, 1995: 80.nec *Otostigmus (O.) politus* — Lewis, 2000: 436.*Otostigmus (O.) politus* — Schileiko, 2001: 428.*Otostigmus politus* — Lewis, 2001: 31.*Otostigmus politus politus* — Lewis, 2003: 195.

Terra typica. China.

MATERIAL. Hoa Binh Prov., Hoa Binh, Mai Tiao Distr., environs of Van Mai, secondary tropical rainforest, 1 spec., 10.12.1981, L.B. Rybalov, N 6356. 1 specimen only.

ADDITIONAL MATERIAL. China: 1 spec., environs of Beijing, 09.1958, I. Sosnovsky, N 6355; 1 spec., Uchan, Lake Dunku, 14.12.1958, N 6354. Korea, Pung Dung, 1 spec., 1900, leg. O. Herz, det. V. Soldatov, N 6353. 3 specimens in all.

RANGE. China (terra typica); Cambodia; Myanmar; Korea; N Vietnam.

REMARKS. Lewis [2003: 196] wrote: "... as he [Schileiko, 1995] used the wider interpretation of the species as given by Attems [1930b] it is not possible to be certain of their identity". I have re-identified all 4 specimens deposited in the ZMMU. According to all taxonomically important characters mentioned in detail by Lewis [2003], such as the structure of both antennae and forcipular tooth plates (Fig. 3a), sternal paramedian sutures, shape and spinulation of the coxopleural process (Fig. 3b), spinulation of the terminal prefemur (Fig. 3b), spinulation of locomotory legs etc., they all are typical *O. politus*. In addition, it seems noteworthy that all normally developed (not regenerated) antennae in personally studied specimens have 17 antennomeres, versus 17–19 antennomeres as given by Schileiko [1995].

Otostigmus (O.) reservatus Schileiko, 1995

Fig. 4.

Otostigmus (O.) reservatus Schileiko, 1995: 83.*Otostigma (O.) reservatus* — Schileiko, 1998: 268.*Otostigmus (O.) reservatus* — Schileiko, 2001: 431.

Locus typicus. Ninh Binh Province, Cuc phuong Nature Reserve.

MATERIAL. Ninh Binh Prov., Cuc phuong Nature Reserve, ca 100 km SSW of Hanoi, hills, 500 m, tropical lowland forest, 2 spec. (holotype N 6394 and paratype N 7164), 05–18.09.1989, K. Mikryukov. Hai Phong Distr.: Cat Ba Isl., lowland forest, soil, 0–

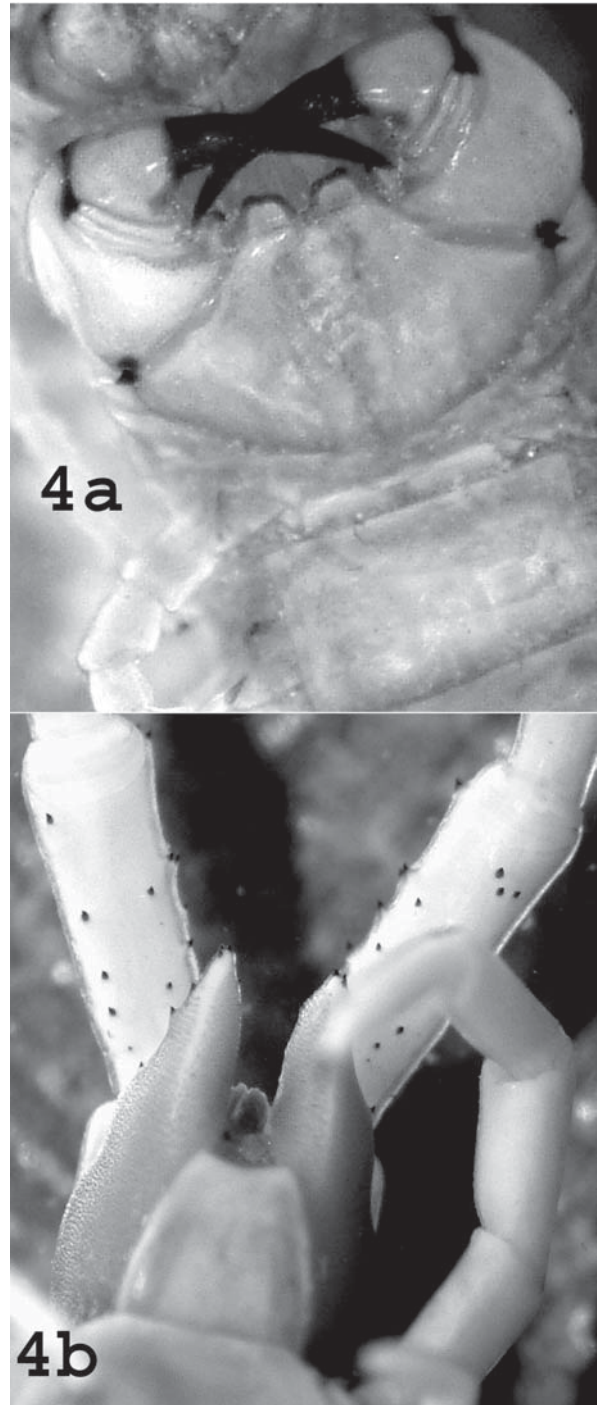


Fig. 4. *Otostigmus (O.) reservatus* Schileiko, 1995, holotype: 4a — posterior end of body ventral; paratype: 4b — forcipular segment ventral.

Рис. 4. *Otostigmus (O.) reservatus* Schileiko, 1995, голотип: 4a — задний конец тела, вентрально; паратип: 4b — ногочелюстной сегмент, вентрально.

10 cm deep, 4 spec., 19.20.1989, V.V. Janushev, N 6375; Dongkho Isl., 2 spec., 20–23.03.1987, L. Filatova, NN 6376, 6377. 8 specimens in all.

RANGE. Vietnam: Ninh Binh Province (terra typica); Ha Tay Province; Ba Ria-Vung Tau Province.

REMARKS. The absence of a distal spur of telomere 2 of the second maxilla appears to be unique in this species as compared to the remaining congeners, reducing the gap between *Otostigmus* and *Digitipes* Attems, 1930b. It is noteworthy, however, that in related species these spurs are often nearly transparent and can be almost invisible, especially so in juveniles.

This species seems to be particularly similar to *O. aculeatus*, distinctly differing in the elevated number of glabrous basal antennomeres, the structure of forcipular appendages (very small teeth of the tooth plates, which are more rarely fused with one another forming a solid tooth margin, plus a small and obtuse trochanteroprefemoral median tooth, which is usually without tubercles; Fig. 4b, see also fig. 12a in Schilevko [1995]), the shape and spinulation of the coxopleural process (Fig. 4a, see also fig. 12b in Schilevko [1995]).

Otostigmus (O.) scaber Porat, 1876

Otostigmus scaber Porat, 1876: 20.

Otostigmus (O.) scaber — Attems, 1930b: 153.

Otostigmus scaber — Attems, 1938: 337.

Otostigmus scaber — Attems, 1953: 138, 145.

Otostigmus (O.) scaber — Zaleskaja & Schilevko, 1991: 22.

Otostigmus (O.) scaber — Schilevko, 1992: 7.

Otostigmus (O.) scaber — Schilevko, 1995: 80.

Otostigmus (O.) scaber — Schilevko, 1998: 268.

Otostigmus (O.) scaber — Schilevko, 2001: 429.

Otostigmus (O.) scaber — Lewis, 2001: 27.

Terra typica. China (locality unknown).

MATERIAL. Hai Phong Distr., Cat Ba Isl: 4 spec., epiphyte, 09.01.1989, V.V. Janushev, N 6670; 1 spec., lake, epiphyte from *Amorphophallus*, 07.01.1989, V.V. Janushev, N 6667. Quang Binh Prov., Minh Hoa Distr., environs of Yen Hop, ca 10 km off the border with Laos, 100–500 m, 1 spec., 04.1999, M.V. Kalyakin, N 6757. Gialai Contum Prov., 50 km N of An Khe: 1 spec., tropical forest, trees, 11.11.1979, V.V. Janushev, N 6671; 1 spec., tropical forest, in rotten wood, 30.10.1979, V.V. Janushev, N 6668; Gialai Contum Prov., 65 N of An Khe, environs of Buon Luoi Biological Station: 1 spec., arboreal trap N 1, 05.07.1984, N 6672; 1 spec., arboreal trap N 6, 07.07.1984, N 6669; 1 spec., arboreal trap N 7, 10.07.1984, N 6664; 1 spec., arboreal trap N 8, 11.07.1984, N 6665; 1 spec., tropical forest, (arboreal trap?) N 10, 12.01.1986, N 6666. Dong Nai Prov., Ma Da Forest: 1 spec., sample 6, 11.05.1995, T.K. Sergeeva, N 6541; 4 spec., sample 13, 13.06.1995, T.K. Sergeeva, N 6537; 1 spec., sample 14, 03.06.1995, T.K. Sergeeva, N 6539. 19 specimens in all.

ADDITIONAL MATERIAL. Malaysia, 10.08.1995, F.Barbieri (collection A.Minelli): 1 spec., Pahang, Taman Nagare; 1 spec., Terengganu, Palau Perhentian Besar. Hawaii Big Island, 01.1995, I. V. Muratov, 2 spec., N 6497. Russia, Maritime Prov., Russian Far East, Imperior Bay, 1888, P.Burzev, 1 spec., N 6348. 5 specimens in all.

RANGE. China (terra typica); Taiwan; Nepal[?]; Myanmar; Vietnam; Cambodia; Malaysia; Thailand; Japan; Taiwan; Russian Primorye (= Maritime Prov., Russian Far East); Sumatra; Andaman and Nicobar Islands; Great Cocos Islands; Hawaii Islands.

REMARKS. Attems [1938, 1953] reported the following localities: “Bana; Dalat; Pic de Lang Biang. Lang Biang. Ile de Spratly. Xieng Kuang.”

Since some specimens have been found on epiphytes or captured in arboreal traps, this species is very likely to be arboreal.

Otostigmus (O.) spinosus Porat, 1876

Fig. 5.

Otostigmus (O.) spinosus Porat, 1876: 22.

Otostigma spinosum — Pocock, 1891c: 414.

Otostigmus (O.) spinosus — Attems, 1930b: 152.

Otostigmus (O.) spinosus — Schilevko, 2001: 433.

Otostigmus (O.) spinosus — Lewis, 2001: 37.

Terra typica. Java Island (?).

MATERIAL. Khanh Hoa Prov., environs of Nha Trang: 2 spec., Fei Canyon, forest, leaf litter, sample 5, 14.08.1996, T.K. Sergeeva, N 6752; 1 spec., valley of Aiong River, leaf litter, sample 9, 01.09.1996, T.K. Sergeeva, N 6753. Dong Nai Prov.: Ma Da Forest, N.V. Beliaeva: 1 spec., sample 5, 18.07.1995, N 7034; 1 spec., foliage, 1995(?), N 7035; Nam Cat Tien Natn. Park, A. Anichkin: 1 spec., sample 39, 01.06.2005, N 7094; 1 spec., sample 11, 01.06.2005, N 7103; 1 spec., sample 5, 01.06.2005, N 7104; 1 spec., sample 51, 08–23.11.2005, N 7096; 1 spec., sample 17, 08–23.11.2005, A. Anichkin, N 7114. Lamdong Prov., environs of Dalat, “serpentine”: 8 spec., substation 2, forest, leaf litter, sample 7, 21.08.1996, T.K. Sergeeva, N 6750; 24 spec., substation 2, forest edge, leaf litter, sample 8, 21.08.1996, T.K. Sergeeva, N 6751; 1 spec., forest edge, starting from agriculture area, litter, sample 8, 21.08.1996, T.K. Sergeeva, N 6835. 43 specimens in all.

ADDITIONAL MATERIAL. W Malaysia, Pahang, Cameron Hills, 1520 m, Bukit Mentiga, 23.03.1993, I. Löbl & F. Calame, 1 spec., N 6456; Malaysia, Uns. Station 70 km from Kuala-Lumpur, 05.12.1999, I.H. Tuf, 1 spec, N 7092. 2 specimens in all.

RANGE. Indonesia; Malaysia; Myanmar; Vietnam; New Guinea.

REMARKS. Some specimens of *O. spinosus* show a clearly square sternum 21 and a long coxopleural process, superficially being quite similar to *O. astenus*.

Otostigmus (O.) voprosus Schilevko, 1992

Otostigmus (O.) voprosus Schilevko, 1992: 10.

Otostigmus (O.) voprosus — Schilevko, 1995: 86.

Otostigmus (O.) voprosus — Schilevko, 1998: 269.

Otostigmus (O.) voprosus — Schilevko, 2001: 432.

Locus typicus. Hoa Binh Prov., environs of Van Mai.

MATERIAL. Hoa Binh Prov., Mai Tiao Distr., environs of Van Mai: 1 spec. (holotype), secondary tropical rainforest, 11.12.1981, L.B. Rybalov, N 6395; 1 spec. (paratype), bamboo forest, 12.12.1981, L.B. Rybalov, N 6396. Ha Tinh Prov., Vu Quang, 1200 m, log on ground, 1 spec., 08.08.1997, M.V. Kalyakin, N 6687. Western part of Lai Chau Prov., environs of Muong Cha, secondary tropical forest, 600 m, 3 spec., 20–21.01.1996, M.V. Kalyakin, NN 6580–6582. 6 specimens in all.

RANGE. N Vietnam.

REMARKS. This species is very similar to *O. ceylonicus* Haase, 1887, but differs in the elevated number of antennomeres (18 vs 17), the subquadrate (versus trapeziform) terminal sternum (see fig. 14c in Schilevko [1995]) and the presence of corner spines on the terminal prefemur. *O. voprosus* differs from another similar species, *O. oweni* Pocock, 1892, by two (versus 3) apical spines of coxopleural process and the lesser number of anterior locomotory legs with tarsal spurs (1–3 instead of 1–18 in *O. oweni*). In addition, the terminal sternum of *O. oweni* is trapeziform.

Subfamily Sterropristinae Verhoeff, 1937

Genus *Ethmostigmus* Newport, 1845

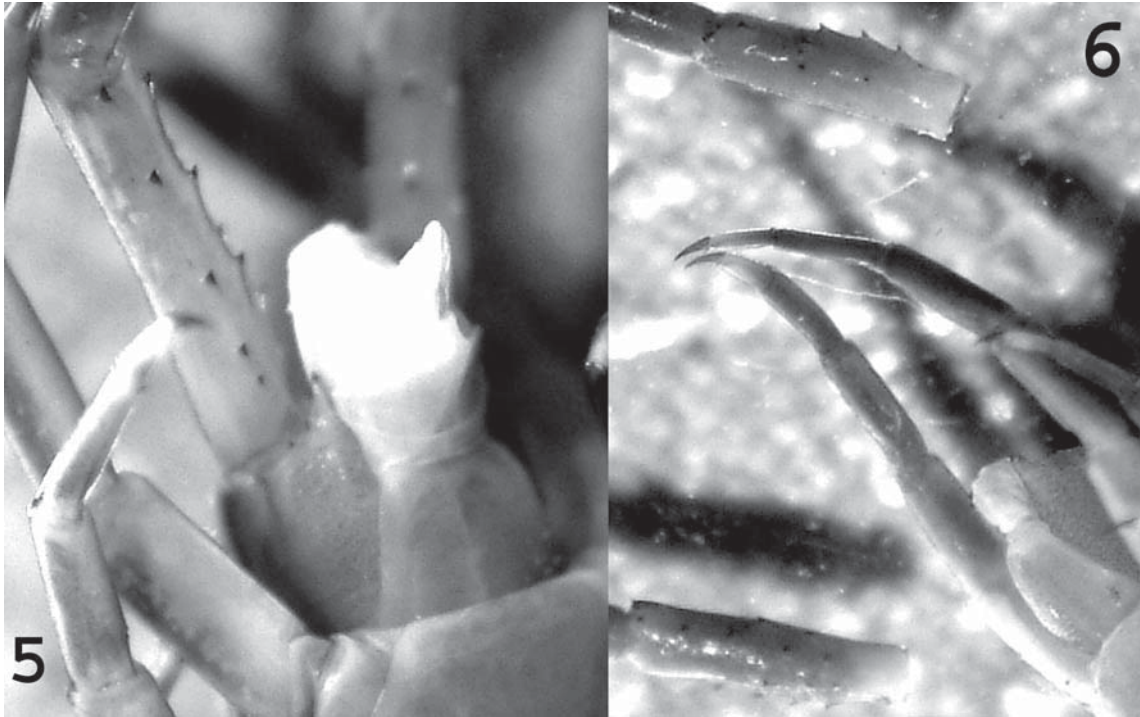
Type species: *Scolopendra trigonopoda* Leach, 1817 (by subsequent designation of Attems [1930b: 174]).

RANGE. Indo-Australia and Ethiopia.

Ethmostigmus rubripes platycephalus (Newport, 1845)

Heterostoma platycephala Newport, 1845: 415.

Heterostoma platycephala — Gervais, 1847: 246.



Figs 5–6. *Otostigmus (O.) spinosus* Porat, 1876, ZMMU N 7103 (5) and *Rhysida calcarata* Pocock, 1891, ZMMU N 7161 (6): 5 — posterior end of body (from the left side) + prefemur of left terminal leg ventro-lateral; 6 — posterior end of body ventro-lateral + right terminal leg medial (=interior) and left ventro-medial.

Рис. 5–6. *Otostigmus (O.) spinosus* Porat, 1876, ZMMU N 7103 (5) и *Rhysida calcarata* Pocock, 1891, ZMMU N 7161 (6): 5 — задний конец тела (левая сторона) + префемур левой последней ноги, вентро-латерально; 6 — задний конец тела, вентро-латерально + правая последняя нога, медиально и левая последняя нога, вентро-медиально.

Scolopendra cribrifera Gervais, 1847: 248.

Ethmostigmus platycephalus — Attems, 1930b: 180.

Ethmostigmus platycephalus cribrifer — Attems, 1930b: 182.

Ethmostigmus platycephalus cribrifer — Attems, 1953: 138, 145.

Ethmostigmus platycephalus cribrifer — Schileyko, 1995: 73.

Ethmostigmus platycephalus platycephalus — Schileyko, 1998: 269.

Ethmostigmus platycephalus cribrifer — Schileyko, 1998: 269.

Ethmostigmus platycephalus cribrifer — Schileyko, 2001: 428.

Ethmostigmus rubripes platycephalus — Schileyko & Stagl, 2004: 121.

Locus typicus. Unknown.

MATERIAL. Dong Nai Prov., Ma Da Forest, *Dipterocarpus* leaf litter, 1 m², 1 spec., 3.03.1994, M. Kalyakin & A. Kuznetsov, N 6553. “Laos[?], sp. N 73”, det. V. Muralewicz, 1 spec., N 7023. 2 specimens in all.

RANGE. Southern Pacific islands: Umboi, Mioko, Duke of York, New Britain; Tahiti; Salomon Islands; New Guinea; Indonesia, Molucca Islands, Philippines: Spratly Island; Australia(?); Sri Lanka; Laos; N and S Vietnam; Cambodia; China.

REMARKS. Attems [1953] reported for *E. platycephalus cribrifer* (= *E. rubripes platycephalus*) the following Indochinese localities: “Donghoi. Luang Prabang. Sre Umbell. Soetrang. Spratly”.

Ethmostigmus rubripes spinosus (Newport, 1845)

Heterostoma spinosa Newport, 1845: 414.

Heterostoma spinosa — Gervais, 1847: 246.

Ethmostigmus spinosus — Kraepelin, 1903: 103.

Ethmostigmus platycephalus spinosus — Attems, 1930b: 181.

Ethmostigmus rubripes spinosus — Schileyko & Stagl, 2004: 122.

Locus typicus. Sri Lanka (?).

MATERIAL. Dong Nai Prov., Ma Da Forest, 1 spec., 05.1995, T.K. Sergeeva, N 6534. 1 specimen only.

ADDITIONAL MATERIAL. Malacca, 1 spec., det. V. Muralewicz(?). Ceylon, Acuressa(?), 1 spec., 10.08.1910, det. V. Muralewicz. 2 specimens in all.

RANGE. Sri Lanka (Trinkomali; Kandy, etc.); Myanmar[?]; S Vietnam (Dong Nai Province); Malaysia (Malacca).

Genus *Rhysida* H.C. Wood, 1862

Type-species: *Branchiostoma lithobioides* Newport, 1845 (by subsequent designation of Attems [1930b: 184]).

RANGE. Indo-Australia, Ethiopia, Neotropics.

Rhysida longipes (Newport, 1845)

Branchiostoma longipes Newport, 1845: 411.

Rhysida longipes — Pocock, 1891c: 418.

Otostigmus simplex Chamberlin, 1913: 75.

Otostigmus (O.) simplex Attems, 1930b: 153.

Rhysida longipes longipes — Attems, 1930b: 194.

Rhysida longipes — Attems, 1938: 337.

Rhysida longipes — Attems, 1953: 138.

Otostigmus (O.) simplex Jangi, 1955: 71.

Rhysida longipes — Schileyko, 1995: 74.

Rhysida longipes — Schileyko, 1998: 269.

Otostigmus (O.) simplex — Schileyko, 1998: 269.

Rhysida longipes — Schileyko, 2001: 422.

Otostigmus (O.) simplex Schileyko, 2001: 432.

Rhysida longipes longipes Lewis, 2002a: 86.

Terra typica. India (?).

MATERIAL. Dong Nai Prov, Ma Da Forest, *Dipterocarpus* area, soil samples, 1 spec., 19.10.1994, N.V. Beliaeva, N 6633. Cambodia, Rattanakiri Prov., 4 km E of Banlung, NW bank of Lake Yeak-Laom, tropical forest, under dead logs, 300 m, 1 spec., 26–30.09.1998, A.G. Kuznetsov, N 7003. 2 specimens in all.

ADDITIONAL MATERIAL. Philippines, Cebu Isl., E of Santander, young forest on large rocks, limestone, sand, clay, alt. 25 m, 1 spec., 06.12.2006, I.V. Muratov, N 7163. 1 specimen only.

RANGE. Entire tropical belt from the East Indies through E and W Africa to the Neotropical Region (including Florida). Personally investigated material is from Cambodia, Vietnam, Pakistan (Makran Coast) and Venezuela.

REMARKS. Attems [1938] noted for this species following Indochinese localities: “Kuang Tcheu Wan” and “Poulo Condore (Cochinchina), Col des Nuages”.

Lewis [2002b] re-investigated two syntypes of *O. simplex*: “The specimens have spiracles on segments 7 and 8 and therefore belong to the genus *Rhysida* ... They are typical *Rhysida longipes longipes* (Newport, 1845)”. N 6633 in ZMMU had formerly been referred to by Schileyko [2001] as *Otostigmus (O.) simplex*.

Rhysida calcarata Pocock, 1891

Fig. 6.

Rhysida calcarata Pocock, 1891a: 61.

Rhysida calcarata — Attems, 1930b: 191.

Rhysida calcarata — Attems, 1938: 338.

Rhysida calcarata — Schileyko, 1998: 269.

Rhysida calcarata — Schileyko, 2001: 441.

Terra typica. Cambodia (without locality).

MATERIAL. Central Laos, Xieng Khouang Prov., SW of Ban Ko Kiang ca 15 km, SW of Vieng Thong ca 19 km, left side of Nam Khan River, limestone, black soil in limestone pockets, sand, under rocks and logs in old forest, alt. 580m, 1 spec., 27.10.2006, I.V. Muratov, N 7161. 1 specimen only.

RANGE. Cambodia (terra typica); Laos.

REMARKS. This species was described from Cambodia on the basis of three specimens. In the original description, Pocock [1891a] mentioned that the largest (57 mm) specimen differed from two smaller (36 mm) ones by the number of antennomeres (17 vs 21) and the “short, very wide” (vs “long, slender, cylindrical, blunted”) corner spine of the terminal prefemur. Pocock suggested such a difference as being evidence of sexual dimorphism, but to my mind the two smaller specimens may well prove to belong to a different species.

I identified the single specimen above as belonging to *R. calcarata* based on all taxonomically important characters mentioned in the original description: number of antennomeres, structure of forcipular segment, composition of tergal and sternal sutures, shape of coxopleural process (Fig. 6), structure and spinulation of terminal prefemur. Its corner spine (Fig. 6) is quite unusual in shape, forming a kind of low wide ridge (i.e. as in the largest described syntype) and being armed by 5–6 small spines (5–10, according to the original description). As regards the spinulation of the coxopleural process, Pocock [1891a] wrote (p. 61): “one lateral and four apical or subapical spines”. Thus, it remains unclear if one of these “subapical” spines is dorsal or not. Each of the coxopleural processes in the specimen from Laos clearly shows one dorsal spine. It must be noted that Attems [1930b] wrote nothing about the presence of coxopleural dorsal spines in his description of *Rhysida calcarata* (p.191),

but in his key (couplet 12) he isolated both *R. calcarata* and *R. ventrisulcus* Attems, 1930 [Attems, 1930a] from *R. suvana* Chamberlin, 1920 due to the absence of this structure in the both former species [Attems, 1930b: 185]: “Coxalfortsatz dorsal ohne Dorn”.

Attems’ [1938] data concerning this species are very scant. He wrote nothing about the structure of the coxopleuron and noted Luang Prabang (Laos) as the only locality. Surprisingly, Attems [1953] did not list *R. calcarata* in his latest general list of Vietnamese scolopendromorphs.

Subfamily: without subfamily placement at the moment.

Genus *Tonkinodentus* Schileyko, 1992

Type-species: *Tonkinodentus lestes* Schileyko, 1992 (by original designation), monotypic.

RANGE. Central and South Vietnam.

Tonkinodentus lestes Schileyko, 1992

Figs 7, 8.

Tonkinodentus lestes Schileyko, 1992: 13.

Tonkinodentus lestes — Schileyko, 1995: 74.

Tonkinodentus lestes — Schileyko, 1998: 267, 268.

Tonkinodentus lestes — Schileyko, 2001: 437.

Locus typicus. Central Vietnam, Daklak (Darlak) Prov., environs of Buon Ma Thuot.

MATERIAL. Daklak (Darlak) Prov., ca 15 km of Buon Ma Thuot, Eakmat, 450 m, 1 spec. (holotype), 1–5.05.1986, L.N. Medvedev, N 6358. Dong Nai Prov., Ma Da Forest, *Dipterocarpus* area, soil samples, 1 spec., 19.10.1994, N.V. Beliaeva, N 6555. 2 specimens in all.

DIAGNOSIS. 21 leg-bearing segments; eyes absent; tooth plates of forcipular coxosternum with 5–8 teeth arranged in two parallel rows; median tooth of forcipular trochanteroprefemur divided sagittally into two halves. Coxopleural process with spines.

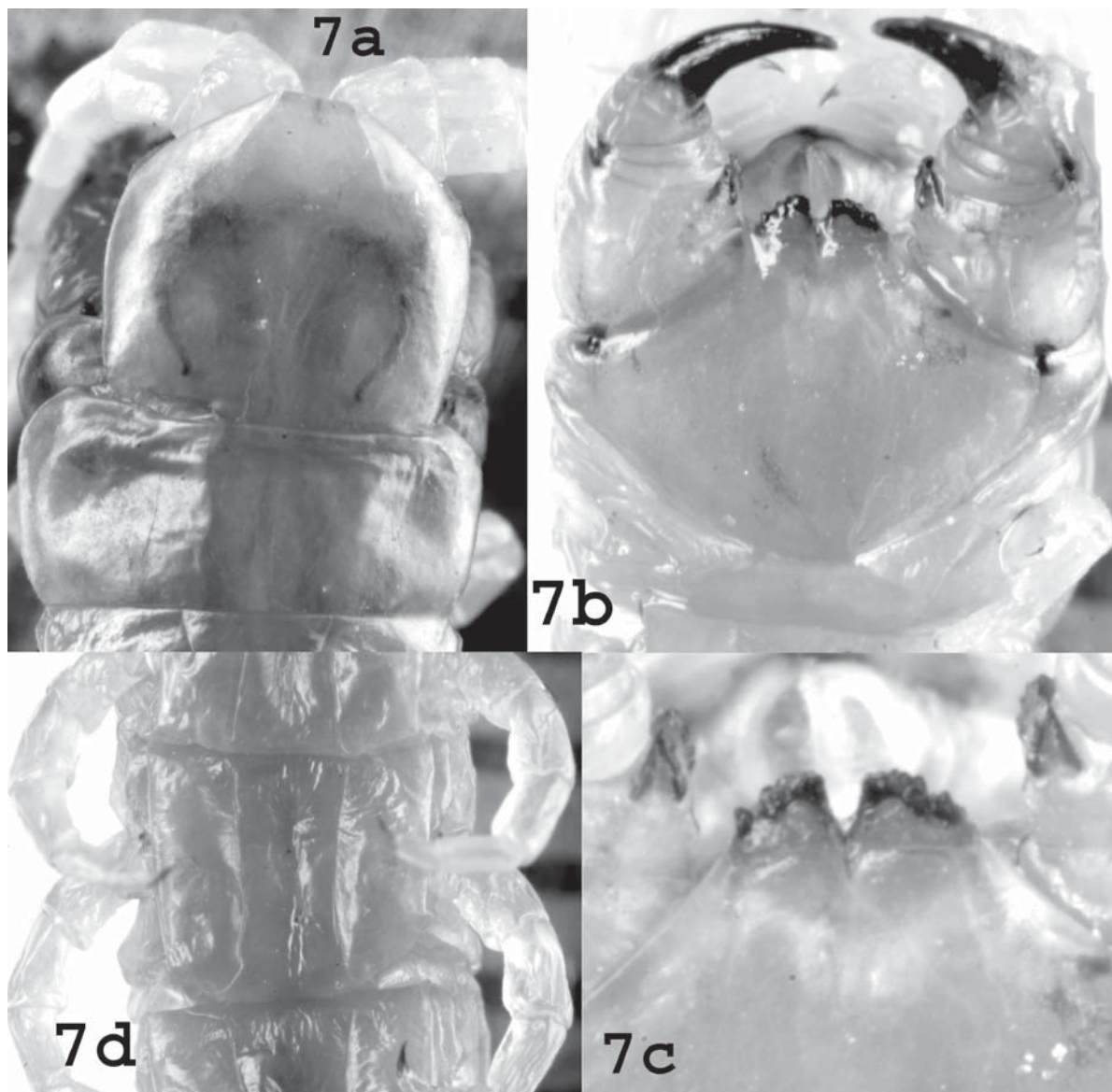
DESCRIPTION of holotype [data concerning the paratype, when necessary, in square brackets]. Body ca 45 mm. Entire body in ethanol uniformly yellow-brownish, with very small, scattered setae.

Antennae with 19 antennomeres (in both holo- and paratype, left antenna with 19, right one with 18, antennomeres; apical antennomere of right antenna of holotype clearly lost), six basal antennomeres glabrous, 7th with sparse setae, remaining ones densely clothed with minute setae.

Head: posterior margin of a non-striate headplate covered with tergum 1 (Figs 7a, 8a).

Forcípules of maxillipedes (Figs 7b, 7c, 8b): several branching sutures forming a kind of very delicate symmetric pattern on maxillipede coxosternum; a long medial suture branched as well [all these sutures hardly visible in paratype]. Tooth plates low, wide [in paratype, these structures visibly higher]. Basal sutures of tooth plates forming a straight line. Tooth margin consisting of 5–8 small teeth fused to various degrees and arranged in two parallel rows, lateral tooth clearly isolated. Height of tooth margin increasing medially. Median tooth of forcipular trochanteroprefemur divided sagittally into two halves, each half with two lateral tubercles [in paratype, inner/dorsal halves with 3, outer/ventral, visibly smaller halves with 2, tubercles].

Terga 2–20 with complete paramedian sutures, ultimate tergum with a complete median suture (Fig. 7i); only this tergum clearly marginate.



Figs 7a–d. *Tonkinodentus lestes* Schileyko, 1992, holotype: 7a — head capsule dorsal; 7b — anterior end of body ventral; 7c — forcipular segment ventral; 7d — sternum of midbody.

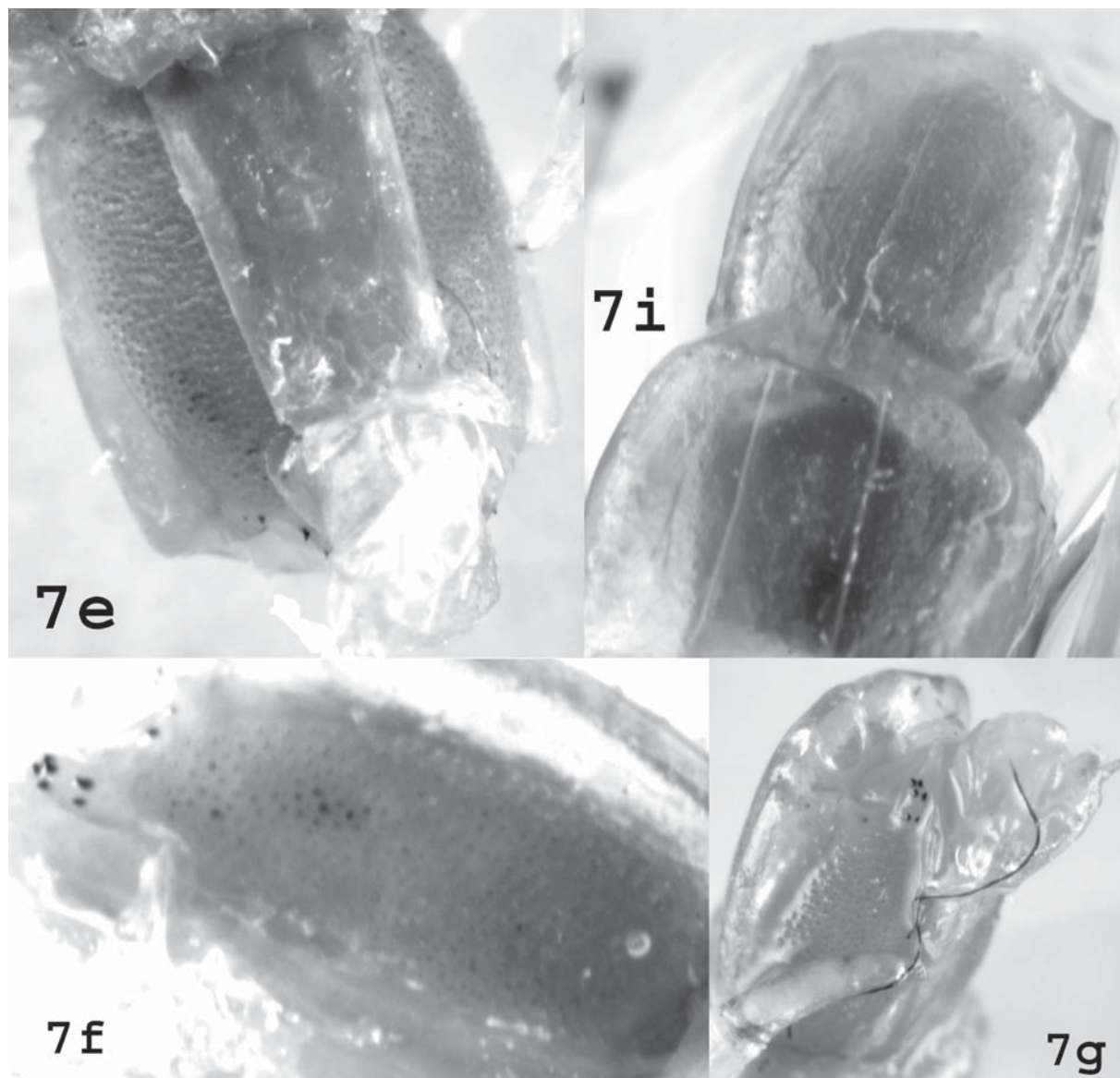
Рис. 7a–d. *Tonkinodentus lestes* Schileyko, 1992, голотип: 7a — головной щиток, дорсально; 7b — передний конец тела, вентрально; 7c — ногочелюстной сегмент, вентрально; 7d — стернит середины тела.

Sterna 2–20 with complete paramedian sutures (Figs 7d, 8c), sterna 7–18(19) with a well-developed, deep, longitudinal, median depression [very shallow in paratype]. Ultimate sternum (Figs 7e, 8d, 8e) long and narrow, at least twice as long as wide at base [1.5:1 in paratype], its lateral margins virtually parallel to each other, posterior margin practically straight [clearly rounded in paratype].

Coxopleuron (Figs 7e–g, 8d, 8e): a short, cylindrical coxopleural process as long as or slightly longer than terminal tergum, with 2 apical, 2 subapical and 2 lateral spines [in paratype, this process clearly curved medially, with 3 apical, 1 subapical and 1 lateral spine]. Almost the entire coxopleural surface covered with pores of varying size [a poreless strip bordering the posterior coxopleural margin visibly broader than in holotype]. 1–2 spines at posterior coxopleural margin [1 spine].

Locomotory legs: each of legs 2–18 with two pretarsal spurs and a single tarsal spur [in paratype, each of legs 19–20 with two pretarsal spurs, 19th also with one tarsal spur].

Terminal legs [of paratype] (Figs 8d–f): dorsal surface of basal articles somewhat convex. Prefemur with numerous small or minute spines, its ventral surface spineless. About half of the spines placed ventrolaterally (23 on left prefemur, 20 on right one), remaining spines lying ventromedially, medially and dorsomedially (23 on left prefemur, 22 on right one). Clear “rows of spines”, like those observed in *Otostigmus* s.str., absent, but spines grouped in very unclear lines or scattered chaotically. Corner process well-developed, with two apical spines. Femur, tibia and tarsus 1 each with a characteristic distoventrolateral process, spineless and rounded apically (Fig. 8f). Tarsus 1 twice as long as tarsus 2, latter twice as long as pretarsus. Pretarsus slender, sharply con-



Figs 7e–i. *Tonkinodentus lestes* Schileyko, 1992, holotype: 7e — posterior end of body ventral; 7f — right coxopleuron; 7g — left coxopleuron; 7i — posterior end of body dorsal.

Рис. 7e–i. *Tonkinodentus lestes* Schileyko, 1992, голотип: 7e — задний конец тела, вентрально; 7f — правая коксоплевра; 7g — левая коксоплевра; 7i — задний конец тела, дорсально.

trasting in thickness with tarsus 2 (juvenile character ?); pretarsal spurs absent.

HOLOTYPE. Adult, 44 mm, N 6358, leg-pairs 19–21 lost.

PARATYPE. Subadult, 34 mm, terminal legs ca 7 mm, N 6555.

RANGE. Central Vietnam, Daklak (Darlak) Prov.; Southern Vietnam, Dong Nai Prov.

VARIABILITY. All the above differences between the holo- and paratype are explicable by the paratype being a subadult. Since the paratype shows a strongly paler cuticle, the sutures are barely visible. In addition, some of the spurs and some other of the not very strongly chitinised structures are less evident in the paratype compared to the holotype. This paratype could have been a newly moulted specimen.

REMARKS. So far as I know, only *Cormocephalus dentipes* Pocock, 1891 shows the same structure of the forcipular median tooth [Lewis, 1992, 2002].

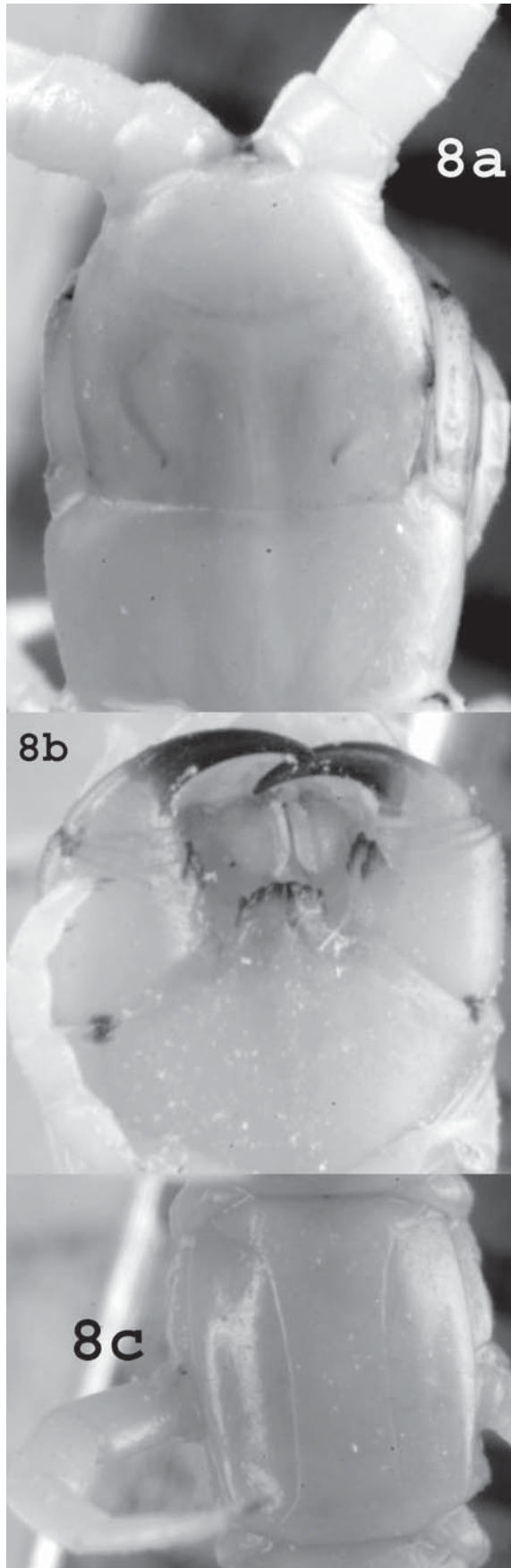
There seem to be no other examples among scolopendromorphs of such an unusual arrangement in two parallel rows of the tooth margin of the forcipular tooth plates.

Subfamily Cryptopinae Kohlrausch, 1881

Genus *Cryptops* Leach, 1815

Type-species: *Scolopendra hortensis* Donovan, 1810 (by monotypy).

RANGE. Showing the widest distribution among all scolopendromorph genera, being widespread in all parts of the globe, except Antarctica.



REMARKS. Among several other congeners, Attems [1938, 1953] reported also *Cryptops (C.) tahitiana* Chamberlin, 1920 from Vietnam and the adjacent regions of Laos and Cambodia. Since I have not found this species personally, it is incorporated in the key only.

Subgenus *Cryptops* (s.str.) Leach, 1815

RANGE. As in the genus.

Cryptops (C.) doriae Pocock, 1891
Fig. 9.

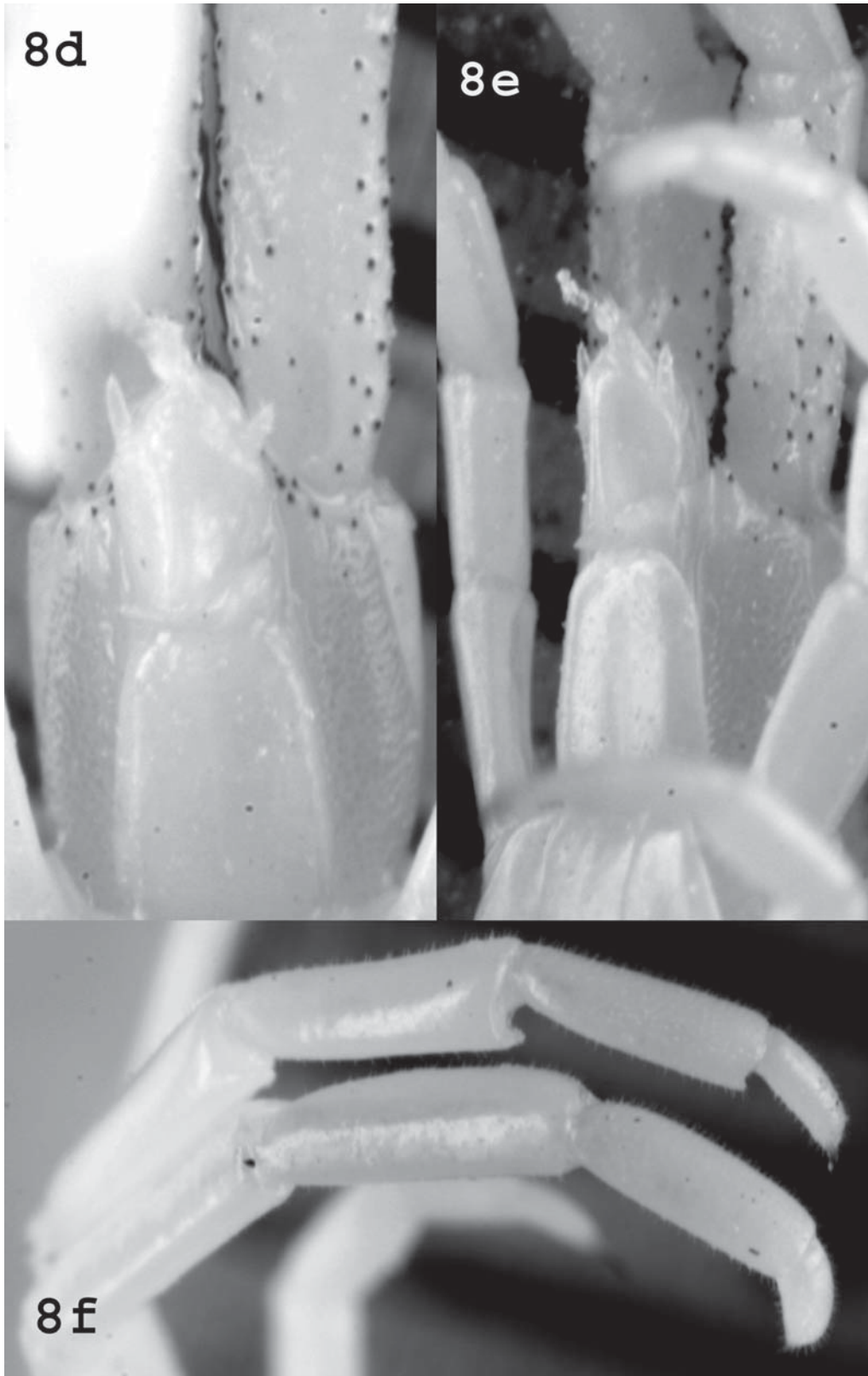
Cryptops doriae Pocock, 1891c: 421.
Cryptops (C.) doriae — Attems, 1930b: 214.
Cryptops (C.) doriae — Attems, 1938: 338.
Cryptops doriae — Attems, 1953: 138.
Cryptops (C.) audax — Schileiko, 1992: 7.
Cryptops (C.) doriae — Schileiko, 1992: 8.
Cryptops (C.) doriae — Schileiko, 1998: 262, 268.
Cryptops (C.) japonicus — Schileiko, 1998: 268.
Cryptops (C.) niuensis — Schileiko, 1998: 268.
Cryptops (C.) doriae — Lewis, 1999: 20.
Cryptops (C.) doriae — Schileiko, 2001: 437.
Cryptops (C.) niuensis — Schileiko, 2001: 438.
Cryptops (C.) japonicus — Schileiko, 2001: 439.

Locus typicus. Lectotype from Burma (=Myanmar): Palon. Two other (missing?) syntypes from Shwegoo and Chiala, also in Myanmar.

MATERIAL. Lao Cai Prov., Sa Pa District: 2 spec., 6–8 km W of Sa Pa, 1800 m, rotten wood, 07.12.1996, M. Kalyakin, N 6612; 2 spec. 6–8 km W of Sa Pa, 1800 m, rotten branches cut from a height of 15 m, 11.12.1996, M. Kalyakin, N 6613; 1 spec., 6–8 km W of Sa Pa, 1800 m, soil between stones, 04.01.1997, M. Kalyakin, N 6611; 1 spec., 1700 m, mountain foggy subtropical forest, 01.1996, A. Kuznetsov, N 6583; 3 spec., Hoang Lien National Park, W of Sa Pa, ca 2000 m, subtropical forest, 16–30.07.2007, S. I. Golovatch, N 7166. Hai Phong Distr., Cat Ba Island: 1 spec., lowland forest, N9–12, 0–10 cm, 19–20.01.1989, V.V. Janushev, N 6527; 1 spec. (in slide), forest, under logs, 5.01.1989, V.V. Janushev, N 6506. Hai Phong Distr., Dongkho Island, “profile” T8 (9–12), 1 spec., 21.03.1987, L. Filatova, N 6523. Gialai Contum Prov., Thai Nguyen Plateau environs of An Khe, 7 km N of Buon Luoi Biological Station, tropical forest, under *Apacea*, 0–10 cm, 2 spec., 3.01.1980, A.D. Pokarzhevsky, N 6528; Gialai Contum Prov., 65 km N of An Khe, environs of Buon Luoi Biological Station, Thai Nguyen Plateau, tropical forest, soil: 20–30 cm, 1 spec., 2.01.1980, A.Y. Druk, N 6530; 8 spec., 0–10 cm, sample 1, 30.12.1980, T.K. Sergeeva, N 6519; 5 spec., 0–10 cm, sample 2, 2.01.1980, T.K. Sergeeva, N 6510; 1 spec., 10–20 cm, sample 2, 2.01.1980, T.K. Sergeeva, N 6518; 1 spec., 20–30 cm, sample 3, 4.01.1981, T.K. Sergeeva, N 6522; 1 spec., 0–10 cm, 1.01.1980, A.D. Pokarzhevsky, N 6525; 1 spec., 0–10 cm, 18.01.1980, A.D. Pokarzhevsky, N 6513; 1 spec., 0–10 cm, 20.01.1980, A.D. Pokarzhevsky, N 6515; 1 spec., 0–10 cm, samples 1–24, 9.01.1981, A.Y. Druk, N 6520; 1 spec., soil, litter, 14.01.1981, A.D. Pokarzhevsky, N 6512; 1 spec., soil, 0–10 cm, sample 2, 2.01.1980, A.D. Pokarzhevsky, N 6516. Gialai Contum Prov., 50 km N of An Khe: 1 spec., tropical forest, sample 9, litter, 11.11.1979, V.V. Janushev, N 6517; 3 spec., tropical forest, litter and soil, 27.10.1979, V.V. Janushev, N 6509; 1 spec., tropical forest, rotten wood, 30.10.1979, V.V. Janushev, N 6508; 3 spec., tropical forest, sample 4, 0–10 cm, 4.11.1979, V.V. Janushev, N 6511; 1 spec., tropical forest, rotten wood, litter, soil, 8.11.1979, V.V.

Figs 8a–c. *Tonkinodentus lestes* Schileiko, 1992, paratype: 8a — anterior end of body, dorsal; 8b — anterior end of body, ventral; 8c — sternum of midbody.

Рис. 8a–с. *Tonkinodentus lestes* Schileiko, 1992, паратип: 8a — передний конец тела, дорсально; 8b — передний конец тела, вентрально; 8c — стернит середины тела.



Figs 8d–f. *Tonkinodentus lestes* Schileyko, 1992, paratype: 8d — posterior end of body + terminal prefemur ventral; 8e — posterior end of body + terminal prefemur ventro-lateral (right side); 8f — terminal tibia and tarsus lateral (from the left side).

Рис. 8d–f. *Tonkinodentus lestes* Schileyko, 1992, паратип: 8d — задний конец тела + префемур последней ноги, вентрально; 8e — задний конец тела + префемур последней ноги, вентро-латерально (правая сторона); 8f — тibia и тарзус последней ноги, латерально (левая сторона).

Janushev, N 6524; 1 spec., tropical forest, litter, sample 2, 31.10.1979, V.V. Janushev, N 6526; 1 spec., rice field, 5.11.1979, V. V. Janushev, N 6521. Kuang Nam Da Nang Prov., Tham (Cu Loa Trung) Island, 1, 10–20 cm, 1 spec., 28.03.1987, T.K. Sergeeva, N 6529. Khanh Hoa Prov., Tho Tu (Pangang) Island, 1 spec., 9.04.1987, N 6514; Khanh Hoa Prov., environs of Nha Trang, T.K. Sergeeva: 10 spec., forest on the slopes, litter, 30.06.1996, N 6829; 1 spec., valley of Aiong River, litter, 30.06(?) or 01.09.1996, N 6830; 12 spec., Fei Canyon, litter, 11–14.08.1996, NN 6831, 6832. Ba Ria-Vung Tau Prov., Dong Kho Island, “profile” T8 (9–12), 1 spec., 21.03.1987, L. Filatova, N 6523. Dong Nai Prov., Ma Da Forest: 2 spec., sample 13, 13.06.1995, T. K. Sergeeva, N 6536; 2 spec., sample 8, 12.05.1995, T.K. Sergeeva, N 6544; 5 spec., sample 15, 14.06.1995, T.K. Sergeeva, N 6547; 4 spec., litter?, sample 5, 18.07.1995, N.V. Beliaeva, N 6554; 1 spec., sample 1, 20.04.1995, T.K. Sergeeva, N 6538; 2 spec., sample 5, 10.05.1995, T.K. Sergeeva, N 6540; 1 spec., sample 8, 12.05.1995, T. K. Sergeeva, N 6543; *Dipterocarpus* forest, soil samples, litter, 34 spec., 27.08.1994–19.04.1995, N.V. Beliaeva, NN 6599–6610, 6616–6629. Dong Nai Prov., Nam Cat Tien Natn. Park: 2 spec., forest, 09–10.2004, S.I. Golovatch & A. Anichkin, N 7083; 4 spec., N 7086, 7–24.05.2006, S.I. Golovatch; 9 spec., sample 27, 08–23.11.2005, A. Anichkin, N 7121; 1 spec., sample 26, 8–23.11.2005, A. Anichkin, N 7132. Lamdong Prov., Dalat, “serpentine”, 21.08.1996, T.K. Sergeeva: 14 spec., substation 2, litter, N 6828; 6 spec., forest margin, starting from agriculture area, litter, N 6833. Kien Giang Prov., Dao Tho Chu (=Pangang) Island, 1 spec., 9.04.1987, N 6514. 150 specimens in all.

ADDITIONAL MATERIAL. E Nepal, Sagarmatha Himal, Soluk Humbu Distr., Sagarmatha Natn. Park, left side of Dudh-Kosi valley, Phak Ding Village, under bushes, 2600 m, 05.05.1998, A.G. Kuznetsov, 5 spec., N 7015; W Nepal, Dhaulagiri Himal, Myagdi Distr., Poon-Hill Ridge, 500 m W of Ghorapani Village, on slope, under stones, 3000 m, 05.10.1997, A.G. Kuznetsov, 1 spec., N 7016. Malaysia, Tanah Rata, I.H. Tuf, 1 spec., 10.1999, N 7124; 3 spec., jungle trail N 10, 31.10.1999, N 7128. Indonesia, Sumatra, Tahura Natn. Park, 07.02.2001, I. Tuf & J. Ožanova, 1 spec., N 7129. Pacific Ocean, Luisiade Archipelago near New Guinea, Niuafouou Isl., 1 spec., 1977, Y. Chernov, N 6507. 8 specimens in all.

DESCRIPTION. Body length up to 30 mm. Material in ethanol uniformly yellow to dark yellow, about 40 % of specimens showing inner accumulations of dark pigment well seen through transparent cuticle. These accumulations form a symmetrical pattern, margining both lateral and posterior edges of tergum as well as gut. This dark pattern is most visible dorsally, sometimes also laterally and, much more rarely, ventrally. Entire body, head, coxopleura and all legs with setae of various size and degrees of sclerotization.

Antennae normally with 17 antennomeres (occasionally, 15–16). Six basal antennomeres with long sparse setae (Fig. 9a), dorsal surface of 2.5–3, ventral surface of 2–3, basal antennomeres virtually without short setae (so-called “glabrous basal antennomeres”); remaining antennomeres densely clothed with minute semi-transparent setae.

Head (Fig. 9a): headplate without sutures, quite sparsely covered with small semi-transparent setae, in some specimens also with sparse bristles. Posterior margin of headplate covered by tergum 1. Clypeus with some small setae at posterior margin, clypeal surface with a few setae. Labrum with a single median tooth. Posterior margin of lateral parts of labrum very delicately setose.

Maxillae II: pretarsus of maxilla 2 hooked apically, without accessory spurs. Length of distoventral “brush” varying from slightly longer to clearly shorter than pretarsus; transparent setae forming a brush hooked apically.

Forcípules of maxillipedes: maxillipede coxosternum with 2–4 + 2–4 long setae at a slightly bisinuate, sometimes virtually straight, anterior margin.

Terga: tergites with finely dispersed setae, from (4)5 to

18(19) with a weak median keel. Incomplete (shortened anteriorly) paramedian sutures on tergum 4(5) and terga 18–19, complete ones on terga 5(6)–17. Lateral sutures unclear on tergum 3, well developed from 4, tergum 20 with somewhat shortened lateral sutures. Terminal tergum with a well-developed longitudinal depression in posterior half; its posterior margins forming a virtually straight or slightly acute angle. Preterga clearly isolated on terga 5–20.

Sterna: sternum 1 only with a short and wide longitudinal depression in anterior half. A shallow, unclear, longitudinal depression (not suture!) on sterna 2–3 and (18)19, sterna 4–17 (Fig. 9b) with a well-developed depression. A transverse suture present on sterna 2–20, on sternum 20 this suture weak, interrupted in the middle. This suture dividing the longitudinal depression about the middle. Sternum 21 with neither any depressions nor sutures, clearly trapeziform, with a straight posterior margin (its corners rounded), as high as wide at base.

Spiracles: first pair large (up to a quarter of the length of the corresponding tergum), remaining spiracles considerably smaller.

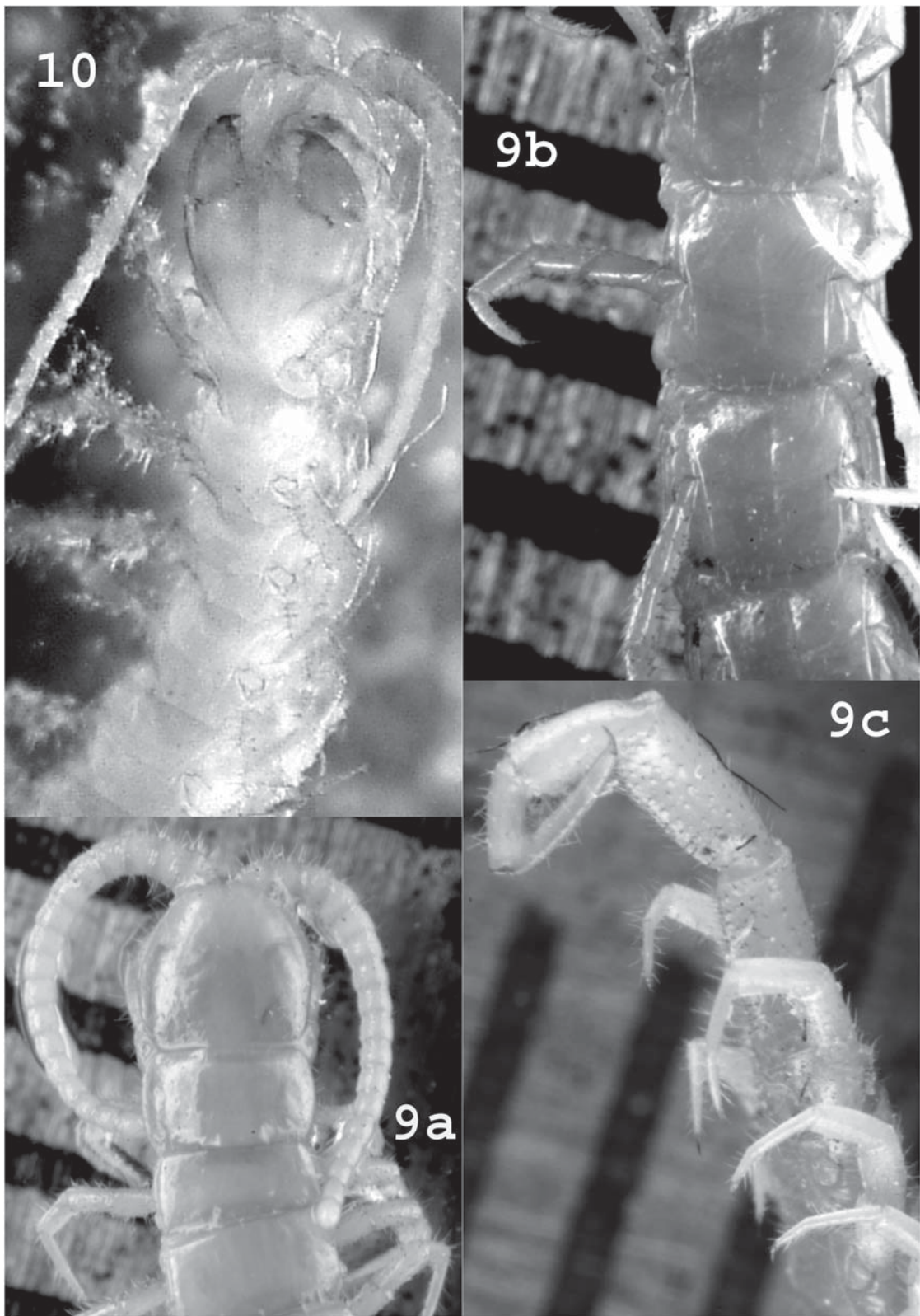
Locomotory legs (Fig. 9b, c): legs 1–19 with a more or less clear division between tarsomeres, tarsus 20 with a flexible articulation between tarsus 1 and 2 (Fig. 9c). Neither tarsal nor tibial spurs. All locomotory legs with two pretarsal spurs.

Coxopleuron: anterior two-thirds of coxopleural surface occupied by an oval pore field containing 15–45 pores of various sizes. Pore field about as long as sternum 21, only sometimes slightly shorter or longer. Posterior margin of coxopleuron straight, with strongly rounded corners.

Terminal legs (Fig. 9c): 2–4 basal segments usually but not always with two, more or less well-developed, distal tubercles (former “apical teeth”), one dorsomedial, the other dorsolateral in position. Prefemur with a few setae dorsally instead of both ventral and interior surfaces. Saw-like teeth: 1 femoral, (6)7 tibial and 3–4 tarsal. Pretarsal spurs absent.

VARIABILITY. (1) The configuration of the pigmental dark pattern remains virtually stable, unlike both coloration intensity and the number of the segments showing this pattern. Lewis [1999: 22] wrote about this based on the only available syntype of *C. doriae* (which is to automatically become the lectotype): “... a darker double median band and dark margins to tergites from segment 3. Tergite 21 darkly pigmented in posterior half”. In fact, there is considerable variation in the number of pigmented body segments. For example, in N 6832, one (younger) specimen has no indication of a dark pigment, but the second (adult) shows them only quite pale, yet visible through the teguments of terga 3–9. As for other material of *C. doriae*, specimen N 6507 from Niuafouou Isl. shows this pattern, which is very clear and dark on all terga, whereas specimen N 7124 from Tanah Rata, Malaysia has it quite pale and only traceable on terga 2–5. There seems to be no correlation between pigmentation and age.

(2) Dorsomedial and dorsolateral spinous processes (former “apical teeth”) of terminal leg segments can be reduced to various degrees down to their complete absence (Fig. 9c) from all articles (for example, N 7121 from Cat Tien, N 6831 from Nha Trang), sometimes reduced on the prefemur and femur, and visibly developed on the tibia and tarsus 1 (NN 6612, 6828); however, these structures are mainly present from the prefemur to tarsus 1 (N 7132 from Cat Tien). There seems to be no correlation between the degree of development of these structures and locality.



Figs 9–10. *Cryptops doriae* Pocock, 1891, ZMMU N 6612 (9a–c) and *Paracryptops indicus* Silvestri, 1924, ZMMU N 6596 (10): 9a — anterior end of body dorsal; 9b — sterna of midbody; 9c — posterior end of body (right side) lateral + left terminal leg medial (=interior); 10 — anterior end of body ventro-lateral.

Рис. 9–10. *Cryptops doriae* Pocock, 1891, ZMMU N 6612 (9a–c) и *Paracryptops indicus* Silvestri, 1924, ZMMU N 6596 (10): 9a — передний конец тела, дорсально; 9b — стерниты середины тела; 9c — задний конец тела (правая сторона), латерально + левая последняя нога, медиально; 10 — передний конец тела, вентро-латерально.

RANGE. Myanmar; Nepal; India; Vietnam; Cambodia; Laos; Java Isl.; Papua New Guinea; Seychelles.

REMARKS. (1) Attems [1938] reported this *Cryptops* species, which is the most widespread in Vietnam, from the following localities: "Dalat, Lang Biang; Dran, Lang Biang; Djiring; Bana Itu, Aba (Tizard Bank); Hon Ba (Nhatrang); Moncaj (Tonkin)".

(2) Much (40 %) of the material studied by the author was first identified as *Cryptops niuensis* Chamberlin, 1920 [Schileyko, 1998, 2001]. This species was first described from Niue Island, with the only meaningful difference from *C. doriae* lying in the presence of accumulations of a dark pigment on some tergites. Attems [1930b: 218], concerning the tergal pigmentation of *C. niuensis*, wrote: "... die meisten Tergite am Hinterrand schwarzlich und mit 2 dunklen Langsbinden". As noted above, Lewis [1999] described darkly pigmented terga in the only available syntype of *C. doriae*. The same pattern has been observed in several personally studied samples from 6 of 32 localities throughout Vietnam alone.

Lewis [2002a] has long noted pronounced variation in the dark tergal pattern in several *Cryptops* species. He wrote [2003b: 66]: "Whether the dark pigmentation is an adequate character to separate species in the absence of other distinguishing characters seems very doubtful". From my point of view, this character is of no value at least in *C. doriae*, nor in *Cryptops* s.str. in general, strongly varying intraspecifically. So all the specimens I earlier identified as *C. niuensis* are referred to here as *C. doriae*. Since the only distinction between *doriae* and *niuensis* does no longer hold, the validity of *C. niuensis* is most doubtful.

(3) Schileyko [1998, 2001] determined specimen N 6506 from Cat Ba Island as *Cryptops (C.) japonicus* Takakuwa, 1934, based on the number of coxopleural pores (more than 40). However, Lewis [1999] showed considerable variation in this character (from 18 to 72) in Nepalese samples of *C. doriae*. Accordingly, specimen N 6506 is here identified as *C. doriae*.

(4) Schileyko [1992] identified a few juvenile specimens of *C. doriae* as *Cryptops (C.) audax* Attems, 1928, because the tergal paramedian sutures are hardly recognizable in juveniles.

(5) Attems [1938, 1953] reported *Cryptops tahitiana* Chamberlin, 1920 from Vietnam. Both Attems' [1930b, 1953] descriptions of this species are virtually identical to that of *C. doriae*. The only difference seems to be absence in *C. tahitiana* of saw-like teeth on the terminal femur. In addition, Attems [1930b], probably repeating the original description, recorded 15 antennomeres in *C. tahitiana* but later [1953], redescribing *C. tahitiana* from Vietnam, he noted 17 antennomeres. This suggests that in the 1953 paper Attems wrote about *doriae*, which usually has 17 antennomeres, i.e. a standard number observed in *Cryptops*. This variation can simply be random or a result of regeneration. Indeed, some specimens of *C. doriae* (for example, N 7129) abnormally show 15 antennomeres, being typical representatives of this species in all other respects. However, *C. tahitiana* is present both in the key and faunistic list, because I have not seen any of the Vietnamese samples Attems identified as *C. tahitiana*.

(6) Such a character as the presence or absence of dorso-medial and dorsolateral distal tubercles (former "apical teeth") on terminal legs is of little taxonomic value at least in *Cryptops* s.str., varying intraspecifically. It seems logical to assume this structure as being functional, and the character adaptive.

Subgenus *Trigonocryptops* Verhoeff, 1906

Type-species: *Cryptops gigas* Kraepelin, 1903 (by subsequent designation of Attems [1930: 235]).

RANGE. Spain; North Africa; tropical West, Central and East Africa; New Zealand; Australia; New Guinea; Fiji; Solomon Islands; New Caledonia; India; Indonesia; Vietnam; Peru; Brazil; Cuba.

REMARKS. *Cryptops (Cryptops) spinipes* Pocock, 1891 was reassigned to the subgenus *Trigonocryptops* by Edgecombe [2005].

Cryptops (Trigonocryptops) spinipes Pocock, 1891

Cryptops spinipes Pocock, 1891b: 156.

Cryptops (Cryptops) spinipes — Attems, 1930b: 231.

Cryptops (C.) spinipes — Schileyko, 1992: 7.

Cryptops (C.) spinipes — Schileyko, 1998: 268.

Cryptops (C.) spinipes — Schileyko, 2001: 439.

Cryptops (Trigonocryptops) spinipes — Edgecombe, 2005: 322.

Terra typica. Sydney, Australia.

MATERIAL. Hai Phong Distr., Cat Ba Island, *Podocarpus* plantation, mountain forest, soil, N5–8, 18.01.1989, V.V. Janushev: 1 spec., 10–20 cm, N 6501; 2 spec. (1 in slide), 20–30 cm, N 6500. Dong Nai Pov., Nam Cat Tien Natn. Park, sample 19, 1 spec., 01.06.2005, A. Anichkin, N 7131. 4 specimens in all.

DESCRIPTION. Body length up to 25 mm. Entire body in ethanol uniformly light yellow in younger specimens to dark yellow or even orange, without any accumulations of a dark pigment. Body clothed with transparent setae of various sizes.

Antennae with 17 antennomeres, 3(4) basal ones with sparse long setae.

Head: headplate without sutures. Posterior margin of headplate covering the anterior margin of tergum 1. Each lateral lobe of labrum with a single cut, thus forming a 3-toothed labrum. Posterior margin of lateral parts of labrum without recognisable setae.

Maxillae II of structure usual for *Cryptops*, with a slender and short pretarsus but without pretarsal spurs. Distoventral "brush" short and small, almost invisible.

Forcípules of maxillipedes: maxillipede coxosternum beset with setae, 4 + 4 long setae at its anterior margin.

Terga: tergites not punctate, without median keel, tergum 1 with a well-developed, transverse, anterior suture. Tergum 3 with shortened (less than tergal half) paramedian sutures, these being complete on terga 4–20. Lateral sutures visible on terga (3)4–19(20). Terminal tergum with a broad longitudinal depression in posterior half, narrowed toward a pointed posterior margin. Preterga usually covered with posterior margin of previous tergum, but sometimes it can be visible on some midbody terga (on terga 11–16 in N 6501).

Sterna 2–18(19) each with a transverse, strongly obtuse angular suture. A quite shallow longitudinal sulcus (not suture) recognisable on midbody sterna (sterna 4–18 in N 6501). Sternum 21 trapeziform, broad at base, with posterior margin from rounded to straight. Presterna absent.

Locomotory legs bearing both abundant fine setae and a few short strong setae, latter more numerous on basal articles of each leg. Legs 1–20 with a flexible tarsal articulation; each leg with two pretarsal spurs.

Coxopleuron: in adult, only an oval field pierced with ca 40 pores of equal size, this field virtually reaching a clearly straight coxopleural posterior margin; latter with 3 large setae.

Terminal legs: up to 5 mm long when extended. So-called distal tubercles (former "apical teeth") well-developed on tibia only, being rudimentary on tarsus 1. Saw-like teeth: 1 femoral, 9–10(11) tibial and 5–6(7) tarsal (7th tooth rudimentary, recognisable at magnitudes higher than x56). Among tibial teeth, 4–6 distal ones showing a common solid base forming a sort of "cock's comb" followed by a row of remaining tibial teeth. Pretarsal spurs absent.

VARIABILITY. (1) One of two specimens of N 6500 (slide), which is adult, shows no preterga, whereas in N 6501 (juvenile) preterga are visible on terga 11–16 (both NN 6500 and 6501 are from Cat Ba Island).

(2) terminal sternum in N 6500 (slide) has a clearly rounded posterior margin, whereas in N 6501 this margin is straight, only its corners are rounded.

(3) in adult N 6500, the saw-like femoral tooth is very small, albeit well-developed, but in juvenile N 6501 this tooth is larger in relation to femur.

(4) juveniles show less saw-like teeth on the terminal legs compared to adults: 1 femoral + 9 tibial (5 + 4 in the "cock's comb") + 5 tarsal teeth versus 1 + 11 (5 + 6 in the "cock's comb") + 7 teeth, respectively.

(5) in this species, such a character as the presence/size of distal tubercles on the terminal legs seems to be species-specific, because all personally studied material shows these processes very well-developed on the tibia only.

RANGE. New Zealand; Australia; New Guinea; Fiji; Solomon Islands; Vietnam.

REMARKS. Such a structure of the labrum (with three teeth) has never been recorded in this species. Among other Solopendromorpha, only *C. parisi* Brolemann, 1920 and *C. caucasicus* Verhoeff, 1934 show the same labrum.

Genus *Paracryptops* Pocock, 1891

Type-species: *Paracryptops weberi* Pocock, 1891 (by monotypy).

RANGE. Old World: Indonesia (Flores Island, eastern Sumba, Java), Papua New Guinea, Malaysia (Labuan Island near Sabah), Singapore, India, Vietnam; New World: Guyana, Dominica.

Paracryptops indicus Silvestri, 1924

Fig. 10.

Paracryptops indicus Silvestri, 1924: 74.

Paracryptops indicus — Attems, 1930b: 245.

Paracryptops indicus — Jangi, 1955: 71.

Paracryptops indicus — Schileyko, 1992: 7.

Paracryptops indicus — Schileyko, 1995: 74.

Paracryptops indicus — Schileyko, 1998: 268.

Paracryptops indicus — Schileyko, 2001: 439.

Paracryptops indicus — Khanna, 2003: 12.

Paracryptops indicus — Chagas Jr. & Shelley, 2004: 2.

Locus typicus. India, western Meghalaya State, Siju Cave.

MATERIAL. Gialai Contum Prov.: 1 spec., environs of Contum, 27.11.1979, V.V. Janushev, N 7145; 2 spec., 50 km N of An Khe, tropical forest, B.9, 11.11.1979, V.V. Janushev, N 7144; 65 km N of An Khe, environs of Buon Luoi Biological Station, Thai Nguyen Plateau, wet tropical forest, soil samples: 6 spec., 15–20.01.1980, A.D. Pokarzhevsky, NN 7136, 7138–7141, 7143; 8 spec., 4–12.01.1980, A.Y. Druk, NN 7134, 7137, 7142; 8 spec., 2.01.1980, T.K. Sergeeva, N 7135. Dong Nai Prov., Ma Da Forest: 4 spec., sample 13, 13.06.1995, T.K. Sergeeva, N 6535; 3 spec., sample 8, 12.05.1995, T.K. Sergeeva, N 6542; 41 spec., *Dipterocarpaceae* forest, soil samples, 28.08.1994–10.05.1995, N.V. Beliaeva, NN 6560–6579, 6584–6598; Dong Nai Prov., 150 km NE

Hochiminh City, Nam Cat Tien Natn. Park: 3 spec., N 7085, 7–24.05.2006, S.I. Golovatch; 2 spec., N 7087, forest, 22.09–04.10.2004, S.I. Golovatch; 11 spec., soil samples, 01.06–23.11.2005, A. Anichkin, NN 7105, 7107, 7116–7120; 7122; 7123; 7130; 7133. Lamdong Prov., Dalat, "serpentine", substation 2, forest, leaf litter, sample 7, 1 spec., 21.08.1996, T.K. Sergeeva, N 6739. Kien Giang Prov., Dao Tho Chu (=Pangang) Island, "profile" BT.1, 2 spec., 09.04.1987, L. Filatova, N 7146. 92 specimens in all.

DESCRIPTION. Body length up to 30 mm. Material in ethanol uniformly yellow to dark yellow, without accumulations of a dark pigment. Entire body, including cephalic plate, forcipules and coxopleura, sparsely clothed with delicate, nearly transparent setae; locomotory and terminal legs much more setose.

Antennae with 17 antennomeres, (5)6 basal ones flattened dorsoventrally. Ventral surface of 3, dorsal surface of 3–5, basal antennomeres with some long setae only, following antennomeres bearing dense, tiny, transparent setae, the number of long setae on them decreasing distad, apical antennomeres lacking long setae.

Head: cephalic plate virtually square (slightly broadened anteriorly), without any sutures, very sparsely setose. Posterior margin of headplate clearly covered with tergum 1. Clypeus without well-pronounced longitudinal keel. Labrum with a single median tooth. Posterior margin of lateral parts of labrum with very fine transparent setae.

Maxillae II with a slender, apically hooked pretarsus, accessory spurs absent. Distoventral "brush" very dense, consisting of tiny, transparent, virtually invisible setae. Brush as long as pretarsus. Coxosternum narrow in the middle, but without median suture.

Forcipules of maxillipedes (Fig. 10): coxosternum with two, uniform, small tooth plates, both slightly rounded distally or have rounded corners; tooth margin absent. Basal sutures of tooth plates absent (!). A few long setae placed at bases of each tooth plate. Sharply pointed tarsungula extremely short, not reaching each other when closed. No traces of a median tooth of trochanteroprefemur (as usual in Cryptopinae); all joints interiorly armed with long strong setae, usually the largest (and longest) one placed at base of tarsungulum; sometimes these setae much longer than tarsungula.

Terga: a median keel present on terga (4)5–20. Tergum 1 sometimes with two extremely short, paramedian, longitudinal sutures anteriorly, tergum 2 without any sutures. Unclear traces of both paramedian and lateral sutures from tergum 3(4), terga 4–19 with anteriorly shortened paramedian sutures + lateral sutures. Length of longitudinal sutures continuously increasing caudad, these being complete in posterior body half to one-third. All these sutures poorly developed on tergum 20, terminal tergum without sutures, with a deep longitudinal hollow in posterior two-thirds. Its posterior margin virtually rectangular. Preterga clearly visible on terga (4)5–20.

Sterna: sternum 1 without sutures, sterna 2–19 each with a caudally somewhat curved, transverse suture crossing the sternum from base to base of locomotory legs. Sternum 20 bearing a rather shallow transverse depression (or sulcus), not suture; this depression slightly curved anteriorly (not posteriorly, as in previous sterna). A shallow, incomplete, unclear, longitudinal depression (not suture!) on sterna 2(3) and 20, well-developed on sterna 4–19. Terminal sternum only with a more or less longitudinal depression, this sternum slightly trapeziform, with a somewhat convex posterior margin.

Coxopleuron: anterior two-thirds or slightly more of coxopleural surface occupied by an oval pore field consisting of about 40 pores of different sizes. Pore field virtually as long as sternum 21. Both coxopleural surface and its posterior margin with several large spurs.

Locomotory legs (Fig. 10): no visible division of tarsi 1–19, tarsus 20 flexible, consisting of 2 articles. All locomotory legs with two delicate pretarsal spurs.

Terminal legs: medial and ventral surfaces of prefemur and medial surface of femur densely clothed with short, large, spiniform setae. Femur with well-developed distal tubercles (former “apical teeth”), these structures being unclear on tarsus 1, but extraordinarily well-developed (long, slender and pointed) on tibia. Femur with a large saw-like tooth, tibia with 6–7, tarsus 1 with (3)4 teeth. Pretarsal spurs absent.

VARIABILITY. Some variability in the length of the spurs on the interior surface of the maxillipede joints is observed.

RANGE. India (western and eastern Meghalaya states, eastern Himalaya, Rajasthan); Central and Southern Vietnam.

SPECIES REPORTED FROM VIETNAM BY OTHER AUTHORS BUT NOT FOUND PERSONALLY

Attems [1938, 1953] recorded the following species:

Otostigmus multidens Haase, 1887 from “Dalat; Bana”, *O. armatus* Attems, 1953 (= *O. multidens* ?) from “Xieng Kuang (Laos)”, *O. multidens carens* Attems, 1938 from “Paulo Dama (Golf von Siam)”.

R. leviventer Attems, 1953 from “Xieng Kuang (Laos)”, *R. marginata* Attems, 1953 from “Camau (Cochinchina)”.

Ethmostigmus rubripes (Brandt, 1840) from “Plateau von Boloven (Laos)”.

Cryptops tahitiana Chamberlin, 1920 from “Pic de Lang Biang. Bellevue. Plateau de Lang Biang. Luang Prabang. Xieng Kuang (Laos). Mt. Bana. Ben Ma Thuot. Hué (Annam). Fan-Si-Pan. Phu Ho (Tonkin)”.

Dinocryptops brolemanni esulcatus (Attems, 1953) from “Lang Biang. Pic de Lang Biang”.

Scolopocryptops melanostomus Newport, 1845 from “Dalat (plateau Lang Biang)”.

Silvestri [1911: 44] described *Alluopus demangei* from two specimens from the following locality: “Habitat. Exempla duo vidi ad Phu-Ly (Tonkin) [= Phu Ly, Ha Nam Province] a V. Demange, cui speciem dico, collecta”. This locality is in the Tinh Ha Nam Region of Vietnam.

LIST OF VIETNAMESE SCOLOPENDROMORPHA

Species recorded in the region by other authors but absent from personally studied material are marked by an asterisk (*) both in the key and updated faunistic list.

Order Scolopendromorpha Leach, 1815

Subfamily Scolopocryptopinae Pocock, 1896

1. *Scolopocryptops melanostomus* Newport, 1845*
2. *S. rubiginosus* (L.Koch, 1878)

3. *S. spinicaudus* Wood, 1862

4. *Dinocryptops brolemanni esulcatus* (Attems, 1953) *

Subfamily Otostigminae Kraepelin, 1903

5. *Otostigmus (Otostigmus) aculeatus* Haase, 1887
6. *O. (O.) amballae* Chamberlin, 1913
7. *O. (O.) armatus* Attems, 1953*
8. *O. (O.) astenus* (Kohlrausch, 1881)
9. *O. (O.) loriae loriae* Silvestri, 1894
10. *O. (O.) loriae nordicus* Schileyko, 1995
11. *O. (O.) multidens multidens* Haase, 1887*
12. *O. (O.) multidens carens* Attems, 1938*
13. *O. (O.) politus politus* Karsch, 1881
14. *O. (O.) reservatus* Schileyko, 1995
15. *O. (O.) scaber* Porat, 1876
16. *O. (O.) spinosus* Porat, 1876
17. *O. (O.) voprosus* Schileyko, 1992

Subfamily Sterropristinae Verhoeff, 1937

18. *Ethmostigmus rubripes rubripes* (Brandt, 1840) *
19. *E. rubripes platycephalus* (Newport, 1845)
20. *E. rubripes spinosus* (Newport, 1845)
21. *Rhysida longipes* (Newport, 1845)
22. *R. nuda* (Newport, 1845) *
23. *R. marginata* Attems, 1953*
24. *R. leviventer* Attems, 1953*
25. *R. calcarata* Pocock, 1891
26. *Alluopus demangei* Silvestri, 1912*

Subfamily Scolopendrinae Newport, Leach, 1815

27. *Scolopendra calcarata* Porat, 1876
28. *S. gracillima sternostriata* Schileyko, 1995
29. *S. mirabilis* (Porat, 1876)
30. *S. morsitans* L., 1758
31. *S. subspinipes subspinipes* Leach, 1815
32. *S. subspinipes dehaani* Brandt, 1840
33. *S. subspinipes cingulatoides* Attems, 1938
34. *Asanada brevicornis* Meinert, 1886

Status ?

35. *Tonkinodentus lestes* Schileyko, 1992

Subfamily Cryptopinae Kohlrausch, 1881

36. *Cryptops (Cryptops) doriae* Pocock, 1891
37. *C. (C.) tahitiana* Chamberlin, 1920*
38. *C. (Trigonocryptops) spinipes* Pocock, 1891
39. *Paracryptops indicus* Silvestri, 1924

KEY TO VIETNAMESE SCOLOPENDROMORPHA

1. 23 leg-bearing segments 2
— 21 leg-bearing segments 5
2. 7th body segment with spiracles
..... genus *Dinocryptops* *D. brolemanni esulcatus*
— 7th body segment without spiracles
..... genus *Scolopocryptops* 3
3. Headplate and terga 1–21(22) not margined, terga (22)23
with narrow lateral margination *S. melanostomus*
— Headplate and terga 1–21(22) with wide lateral margin-
ation 4
4. Terga 1-(6)20 with paramedian sutures ... *S. rubiginosus*
— Terga without paramedian sutures *S. spinicaudus*
5. 7th body segment without spiracles 14
— 7th body segment with spiracles 6
6. Forcipular trochanteroprefemur with a median tooth ... 9
— Forcipular trochanteroprefemur without median tooth
..... genus *Ethmostigmus* 7

7. Terminal prefemur with a corner spine while all other spines strongly enlarged *E. rubripes spinosus*
— All spines of terminal prefemur of normal size 8
8. Coxopleural process strongly arcuate dorsally, not longer than terminal tergum, with 0–3 dorsal spines
..... *E. rubripes rubripes*
— Coxopleural process not arcuate dorsally, clearly longer than terminal tergum, with 3–5 (rarely two) dorsal spines
..... *E. rubripes platycephalus*
9. Terminal tarsus 1 more than twice longer than tarsus 2, with a large distodorsal process
..... genus *Alluropus* *A. demangei*
— Length ratio of terminal tarsi usual (terminal tarsus 1 less than twice longer than tarsus 2), tarsus 1 without large distodorsal process genus *Rhysida* 10
10. Only terminal tergum margined *R. nuda*
— Some posterior terga margined laterally 11
11. Sternal paramedian sutures very short or (totally) absent 12
— Sternal paramedian sutures from as long as half of sternum to complete 13
12. Very short paramedian sutures situated anteriorly
..... *R. longipes*
— Sternal paramedian sutures totally absent
..... *R. leviventer*
13. Coxopleural process without dorsal spines; corner process of terminal prefemur with 5–10 apical spines
..... *R. calcarata*
— Coxopleural process with 4 dorsal spines; corner process of terminal prefemur with 3 apical spines
..... *R. marginata*
14. Eyes present 15
— Eyes absent 35
15. Spiracles triangular, with three “flaps” 28
— Spiracles oval, without any “flap”
..... genus *Otostigmus* s.str. 16
16. Penultimate prefemur with one corner spine; terminal leg with one tarsal spur *O. spinosus*
— Penultimate prefemur without corner spine; terminal leg lacking a tarsal spur 17
17. 3–4 basal antennomeres almost glabrous (at least dorsally) 18
— 2–2.5 basal antennomeres almost glabrous 21
18. Terminal prefemur with two ventrolateral, parallel spine rows, each row of 5–9 spines; coxopleural process with 5–7 apical spines 19
— Terminal prefemur with a single ventrolateral row of 3–5 spines; coxopleural process with 2–3 apical spines 20
19. 4 basal antennomeres almost glabrous dorsally; forcipular tooth plates each with 4 very small teeth, more rarely latter fused with one another forming a solid tooth margin; median tooth of forcipular trochanteroprefemur very small *O. reservatus*
— 3–3.3 basal antennomeres almost glabrous dorsally; forcipular tooth plates each with 4 large conic teeth; median tooth of forcipular trochanteroprefemur large, with lateral tubercles *O. aculeatus*
20. Sterna 5–20 with paramedian sutures
..... *O. politus politus*
— Sterna without paramedian sutures *O. voprosus*
21. Terga 7–20 each with 5–9 longitudinal keels 22
— All terga without keels 23
22. Antenna with 21 antennomeres *O. scaber*
— Antenna with 17 antennomeres *O. amballae*
23. Coxopleural process short, cylindrical, with 5 apical and 2 very small dorsal spines *O. armatus*
— Coxopleural process long, with 2–3 apical and one dorsal spine at most 24
24. Terminal sternum subquadrate *O. astenus*
— Terminal sternum clearly trapeziform 25
25. Incomplete margination starting from terga 6–8; terminal prefemur with one corner spine 26
— Incomplete margination starting from terga 14–16, terminal prefemur with 2 corner spines 27
26. Each forcipular tooth plate with 2 lateral, clearly isolated teeth; coxopleural process with 3 apical and 0–3 lateral spines *O. loriae loriae*
— Each forcipular tooth plate with 3 lateral, clearly isolated teeth; coxopleural process with 2 (very rarely 3) apical spines but without lateral ones *O. loriae nordicus*
27. Locomotory legs 1–13(19) each with 2 tarsal spurs
..... *O. multident multident*
— Locomotory legs 1–7 each with 2 tarsal spurs
..... *O. multident carens*
28. Coxopleuron without pores
..... genus *Asanada* *A. brevicornis*
— Coxopleuron with pores
..... genus *Scolopendra* s.str. 29
29. Cephalic “basal plates” absent 30
— Posterior corners of cephalic plate with clear “basal plates” *S. mirabilis*
30. Terminal legs each with one tarsal spur *S. calcarata*
— Terminal legs without tarsal spur 31
31. Terminal prefemur with 5 or more ventral spines 34
— Terminal prefemur with 0–3 (rarely 4) ventral spines
..... *S. subspinipes* 32
32. Terminal prefemur with ventral spines 33
— Terminal prefemur without ventral spines
..... *S. subspinipes dehaani*
33. Terminal legs slender and long (ratio of prefemoral length to its width no less than 4:1), all articles rounded dorsally *S. subspinipes subspinipes*
— Terminal legs very large and short (ratio of prefemoral length to its width as 2(2.5):1), 2–3 basal articles flattened dorsally *S. subspinipes cingulatoïdes*
34. 20 antennomeres; 5 teeth of forcipular tooth plate of normal size, lateral one clearly isolated; both terminal prefemur and femur flattened dorsally, margined bilaterally in male and unilaterally in female *S. morsitans*
— 17 antennomeres; forcipular tooth plate with 4–5 very small, clearly isolated teeth; terminal prefemur, femur and, sometimes, tibia rounded dorsally (rarely flattened), without any lateral margination
..... *S. gracillima sternostriata*
35. Forcipular tooth plates with a well-developed tooth margin genus *Tonkinodentus* *T. lestes*
— Forcipular tooth plates usually absent; when present without tooth margin 36
36. Forcipular tarsungulae very short, not reaching each other when closed genus *Paracryptops* ... *P. indicus*
— Forcipular tarsungulae much longer
..... genus *Cryptops* 37
37. Labrum with 3 teeth, tergum 1 with a transverse suture ...
..... *C. spinipes*
— Labrum with a single tooth, tergum 1 without transverse suture 38
38. Terminal femur without ventral “saw” *C. tahitiana*
— Terminal femur with 1–2 small, ventral, “saw” teeth
..... *C. doriae*

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