

On some poorly-known millipedes from Siberia (Diplopoda)

О некоторых малоизвестных двупарноногих многоножках Сибири (Diplopoda)

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КЛЮЧЕВЫЕ СЛОВА: Diplopoda, новый синоним, новая комбинация, фаунистика, изменчивость, Сибирь.

ABSTRACT: Based on a restudy of type material, the following new synonyms and combinations are proposed: *Craspedosoma cylindricum* Stuxberg, 1876 = *Ghilarovia novosibirica* Shear, 1988, syn.n. = *Ghilarovia cylindrica* (Stuxberg, 1876), comb.n., and *Julus profugus* Stuxberg, 1876 = *Cylindroiulus dentiger* Gulička, 1963, syn.n. = *Sibiriulus profugus* (Stuxberg, 1876), comb.n., the valid names being the last. The degrees of morphological variation in *Ghilarovia cylindrica* and *Ancestreuma longibrachiatum* (Shear, 1990) are outlined. New faunistic records of a few further Siberian species are given.

РЕЗЮМЕ: На основе переизученного типового материала установлены следующие новые синонимы и комбинации: *Craspedosoma cylindricum* Stuxberg, 1876 = *Ghilarovia novosibirica* Shear, 1988, syn.n. = *Ghilarovia cylindrica* (Stuxberg, 1876), comb.n., and *Julus profugus* Stuxberg, 1876 = *Cylindroiulus dentiger* (Gulička, 1963), syn.n. = *Sibiriulus profugus* (Stuxberg, 1876), comb.n., валидные названия последние. Для видов *Ghilarovia cylindrica* и *Ancestreuma longibrachiatum* (Shear, 1990) дана оценка их морфологической изменчивости. Приведены новые фаунистические находки для некоторых других сибирских видов.

Introduction

In spite of all recent progress [Mikhaljova, 1993; Mikhaljova & Golovatch, 2001], the millipede fauna of Siberia, Russia is still poorly studied. Indeed, in addition to the region being exceedingly vast and largely difficult to collect in, several species have hitherto remained among *nomina dubia*. The present paper largely focuses on establishing the identity of some of these dubious forms.

Materials treated here are deposited in the collections of the Zoological Museum of the Moscow State University (ZMUM), Russia, the Institute of Biology and Soil Science of the Russian Academy of Sciences, Vladivostok (IBSV), Russia, the State University of Tomsk (SUT), Russia, the Swedish

Museum of Natural History, Stockholm (NHMS), Sweden, the Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw (MIZW), Poland, the Zoological Museum of the University of Helsinki (MZUH), Finland, and the Zoological Museum of the University of Turku (MZUT), Finland.

Taxonomy and faunistic records

Ghilarovia cylindrica (Stuxberg, 1876), **comb.n.**
Figs 1–4, 8–19.

Craspedosoma cylindricum Stuxberg, 1876a: 35, figs (holotype not designated, number of specimens in the type series unclear; Russia: Siberia, from between Achinsk, Krasnoyarsk Prov. and Mariinsk, Kemerovo Area; in NHMS).

Craspedosoma cylindricum — Stuxberg, 1876b: 317; Lokšina & Golovatch, 1979: 383; Mikhaljova, 1993: 34.

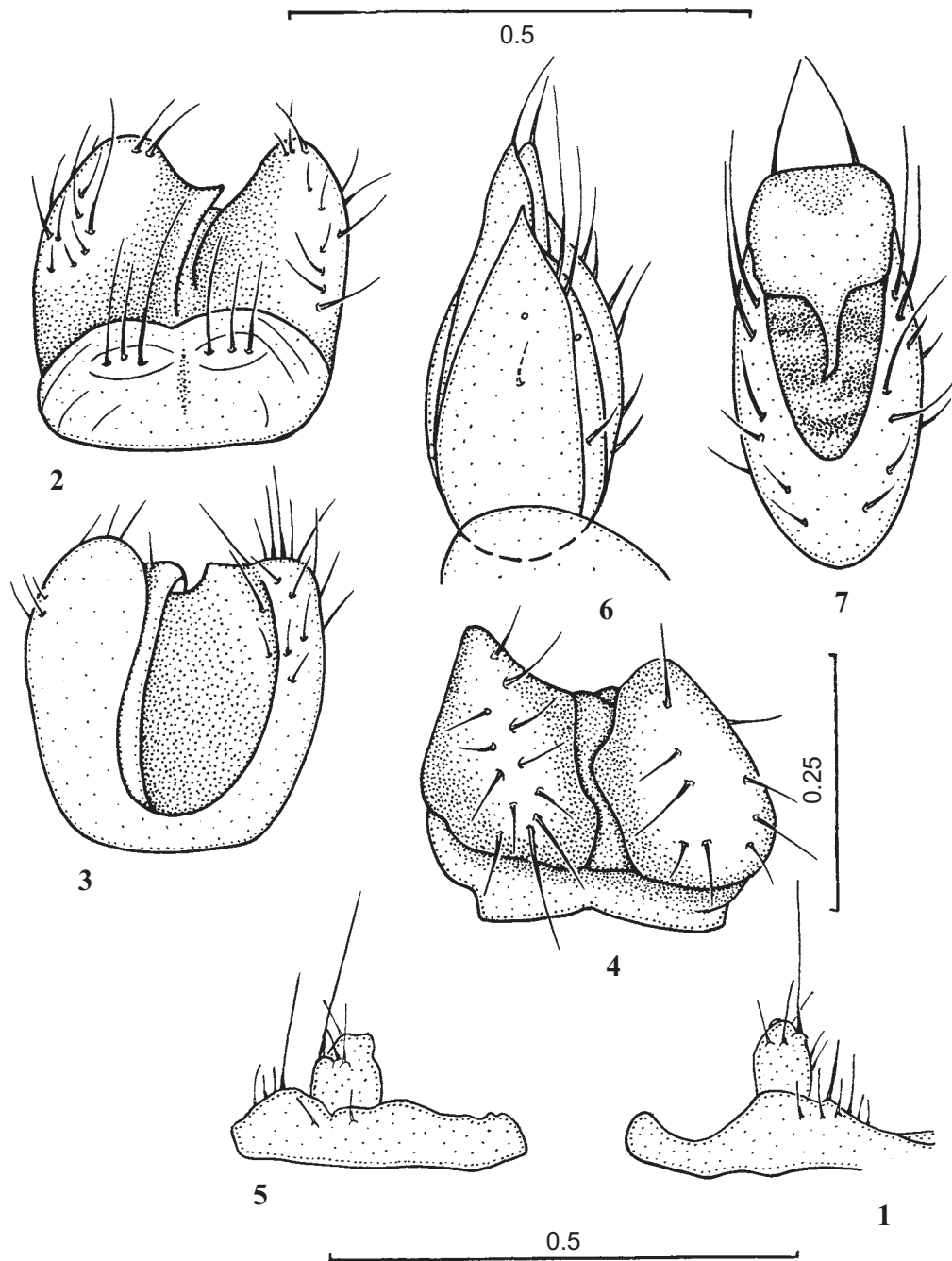
Ghilarovia novosibirica Shear, 1988: 56, figs; **syn.n.** (holotype male, Russia: Siberia, from near Mirnyi, Toguchin Distr., Novosibirsk Area; in ZMUM).

Ghilarovia novosibirica — Mikhaljova, 1993: 16; Mikhaljova & Golovatch, 2001: 108.

Material examined: *Craspedosoma cylindricum*: 4 ♀♀, 5 fragments (NHMS), “*Craspedosoma cylindricum* Sg. Krasnojarsk–Tomsk, 9–12.10.75, N 7, Sg.” (= Russia, Siberia, Krasnoyarsk–Tomsk, 9–12.10.1875; det. Stuxberg).

Ghilarovia novosibirica: 1 ♂, 3 ♀♀ (IBSV), Russia, Siberia, Novosibirsk Area, Toguchin Distr., near Mirnyi, *Abies-Populus* forest, 22.VIII–3.IX.1984. — 1 ♂, 2 ♀♀ (IBSV), same locality, IX.1984. — 8 ♂♂, 14 ♀♀, 3 juv. (IBSV), 2 ♂♂, 1 ♀ (ZMUM), Russia, Siberia, Novosibirsk Area, Toguchin Distr., near Mirnyi, area of tree felling, 7–16.VIII.1985; all leg. V.D. Bakurov. — 1 ♂, 11 ♀♀, 9 juv. (ZMUM), Russia, Siberia, Kemerovo Area, Kuznetsky Alatau Nature Reserve, delta of Malaya Bezymianka Atream, ca. 19 air-km SSW of Belogorsk, *Abies-Pinus* taiga, 500 m, 27–31.VIII.1993; leg. S.I. Golovatch & V. Gratshev. — 1 ♂, 1 ♀ (SUT), Russia, Siberia, Khakassian Republic, Shira Distr., Kommunar, *Betula* forest, 31.VII.1999. — 1 ♂, 1 ♀ (IBSV), 2 ♂♂ (SUT), Russia, Siberia, Tomsk Area, Tomsk Distr., Yarskoe, *Salix* forest along spring, 3.IX.1999. — 1 ♂ (SUT), Russia, Siberia, Tomsk Area, Tomsk Distr., Yarskoe, Petrov Kamen, lower part of talus, 3.IX.1999. — 1 ♂, 1 ♀ (SUT), Russia, Siberia, Tomsk Area, Tomsk Distr., Yarskoe, second spring, *Larix* forest, 3.IX.1999; all leg. P.S. Nefediev.

Published material re-examined: 2 ♂♂, 3 ♀♀, 4 juv. (IBSV), Russia, Siberia, Kemerovo Area, Kuznetsky Alatau Nature Reserve, near mouth of Bezymianka River, 14.VII.1994; leg. A.B. Ryzkin. — 1 ♂, 1 ♀, 43 juv. (ZMUM), Russia, Siberia, Kemerovo



Figs 1-7. 1-4 — *Gbilarovia cylindrica* (Stuxberg, 1876), ♀ lectotype; 5 — *Gbilarovia kygae* Gulička, 1972, ♀ topotype; 6, 7 — *Sibirius profugus* (Stuxberg, 1876), ♀ lectotype; 1,5 — leg pair 2; 2 — vulva (frontal view); 3,7 — vulva (caudal view); 4 — vulva (ventral view); 6 — vulva (lateral view). — Scale in mm.

Рис. 1-7. 1-4 — *Gbilarovia cylindrica* (Стухберг, 1876), лектотип ♀; 5 — *Gbilarovia kygae* Гулиčka, 1972, ♀ топотип; 6, 7 — *Sibirius profugus* (Стухберг, 1876), лектотип ♀; 1,5 — 2-я пара ног; 2 — вульва (вид спереди); 3, 7 — вульва (вид сзади); вульва (вид снизу); 6 — вульва (вид сбоку). — Масштаб в мм.

Area, Novokuznetsk Distr., ca. 10 air-km of Kuzedeyevo, *Tilia* insular forest (= Lipovyi ostrov), 450-550 m, 20-24.VII.1994; leg. S.I. Golovatch and A.B. Ryvkin [Mikhaljova & Golovatch, 2001].

DISTRIBUTION: Russia, Siberia: Novosibirsk Area, Tomsk Area, Kemerovo Area, southern part of Krasnoyarsk Prov., Khakassian Republic.

DESCRIPTION: Female. Length 11-12 mm, width 1.0-1.1 mm. Colour in alcohol beige, beige-gray or light tan.

Antennae brown (in all *Craspedosoma cylindricum* types broken off and lost). Eyes black.

Body with 28 segments. Head setose (in *C. cylindricum* types abraded). Vertigial suture well-visible. Genae micropilose (in *C. cylindricum* types virtually bare). Labrum usual. Eye patches triangular, 25-27 ocelli in each. Antennae long and slender, antennomere 3 longest. Collum semi-circular,

with 3+3 macrochaetae. Somite 2 somewhat narrower than both head with genae and somite 3. Frons not flattened. Body subcylindrical. Paraterga absent. Metatergites laterally with three small bulges each bearing a macrochaeta. Transverse suture between pro- and metazona well-developed, 3+3 macrochaetae on metazonites thin, pointed, arranged in a nearly transverse row (in all *C. cylindricum* types broken off and lost). All metazonal macrochaetae either subequal in length or median ones shortest. Axial dorsal suture well-developed. Each anal valve with three setae at caudal margin. Subanal scale with 1+1 setae (setae on both anal valves and subanal scale of *C. cylindricum* types broken off).

Legs slender but not very long, claws with two small claws dorsally at base (two small claws are observed solely in ventral view, but one small claw is observed in lateral view). Tarsal papillae absent. Leg pair 1 somewhat reduced, normal, with tarsal brush, claws with two small claws dorsally at base. Leg pair 2 (Fig. 1) strongly reduced, 1-segmented, setose apically. Leg pair 2 of juvenile females with 26 somites normal. Vulva as in Figs 2–4.

Male. The main characters are as given in the description of *G. novosibirica* by Shear [1988]. Only the structure of leg distal parts and the variation in anterior gonopod sternal process deserve further mention.

Male legs slender but not very long, claws with two small claws dorsally at base. Ventral tarsal papillae present, only subapical part of tarsus without papillae. Tarsus of pregonopod legs with continuously arranged papillae. Legs 1 and 2 somewhat reduced, without tarsal papillae but with tarsal brushes, claws with two small claws dorsally at base.

Median sternal process of anterior gonopods quite variable in shape (Figs 8–19).

REMARKS: Ever since its original description from between Achinsk Krasnoyarsk Prov. and Mariinsk, Kemerovo Area [Stuxberg, 1876a], *Craspedosoma cylindricum* has remained among *nomina dubia* [Mikhailjova & Golovatch, 2001]. Even the number of specimens in the type series have remained unclear [Stuxberg, 1876a, b]. That *C. cylindricum* might prove to be a species of *Ghilarovia* has long been suspected [Mikhailjova, 1993] but it was only recently that I was privileged to receive for restudy the syntypes of this species. The discrepancy between the label accompanying the syntypes of *C. cylindricum* and the type locality as given in the descriptions by Stuxberg [1876a, b] can be understood as a less exact provenance of material provided by the collector. The female whose vulvae were dissected for examination has been designated as lectotype, the remaining material as paralectotypes.

A direct, side-by-side comparison of the type material of *C. cylindricum* with topotypes of *G. novosibirica* has revealed their great morphological resemblance. Only one difference has been found, viz. the metazonal lateral bulges in *cylindricum* are somewhat larger than in *novosibirica*. However, based on an analysis of larger samples of both sexes, this difference proves individual infraspecific variation. As *Ghilarovia novosibirica* has originally been described from the very east of the Novosibirsk Area, Siberia [Shear, 1988], i.e. relatively close to the *terra typica* of *cylindricum*, this provides an additional, geographical argument in support of the new synonymy. Hence the following new formal synonym and combination are advanced: *Craspedosoma cylindricum* Stuxberg, 1876 = *Ghilarovia novosibirica* Shear, 1988, syn.n. = *Ghilarovia cylindrica* (Stuxberg, 1876), comb.n., the valid name being the last.

The distribution area of this species is quite coherent, covering the Salair and the Kuznetsky Alatau mountains and their northern outcrops, all north of Altai Mountains.

Interestingly, *Ghilarovia* Gulička, 1972 seems to be the only genus of the family Anthroleucosomatidae with strongly reduced ♀ legs 2, a condition rather characteristic of the Euro-Caucasian family Mastigophorophyllidae.

Ghilarovia kygae Gulička, 1972

Fig. 5.

Ghilarovia kygae Gulička, 1972: 39, figs (holotype male, Russia: Siberia, Altai Prov., Lake Teletskoe, flood-lands of Kyga River; stated to have been deposited in the Institute for Problems of Ecology and Evolution, Russian Academy of Sciences, Moscow, Russia; now the torso is in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg).

Ghilarovia kygae — Lokšina & Golovatch, 1979: 383; Shear, 1988: 55, figs; Mikhailjova, 1993: 16; Mikhailjova & Golovatch, 2001: 107.

Published material re-examined: 9 ♂♂, 6 ♀♀, 4 juv., 3 fragments (ZMUM), Russia, Siberia, Altai Mts., Altaisky Nature Reserve, environs of Lake Teletskoe, *Picea* and *Betula* forest, sample 13, litter, IX.1969; leg. A.L. Tikhomirova (NB: Shear [1988] provided neither exact information about the number of specimens in the sample nor a complete label). — 10 ♂♂, 3 ♀♀, 7 juv. (ZMUM), 2 ♂♂, 2 ♀♀ (IBSV), Russia, Siberia, Altai Mts., Lake Teletskoe, Altaisky Nature Reserve, near Lake Chiri, upper timberline of *Picea obovata* + *Pinus sibirica* taiga, mainly near water, 1,700–1,750 m a.s.l., 29.VII–1.VIII.1997; leg. S.I. Golovatch & A.V. Tanasevitch [cf. Mikhailjova & Golovatch, 2001].

DISTRIBUTION: Russia, Siberia: Altai Province.

REMARKS: This is the type, and only other, species of the Siberian genus *Ghilarovia* known to date. Both the size and structure of the median sternal process of the anterior gonopods are the main characters distinguishing this species from *G. cylindrica* [cf. Shear, 1988]. The sternal process in *G. kygae*, as opposed to that of *G. cylindrica*, is only slightly variable (cf. Figs 8–19), this variation concerning its size only.

In addition, *G. kygae* differs from *G. cylindrica* by the larger knob projecting on the ♂ sternite 10 [cf. Shear, 1988], the broader apical blade of the angiocoxal lateral part, and the structure of the vulva and the ♀ leg pair 2 (Fig. 17).

Restudy of the above *Ghilarovia* material proves that Mikhailjova & Golovatch [2001] misidentified *G. cylindrica* specimens from the Kemerovo Area as belonging to *G. kygae*. A subsample of 2 ♂♂ and 2 ♀♀ from one of the ZMUM samples of *G. kygae* has been retained for the IBSV collection.

Ancestreuma longibrachiatum (Shear, 1990)

Figs 20–34.

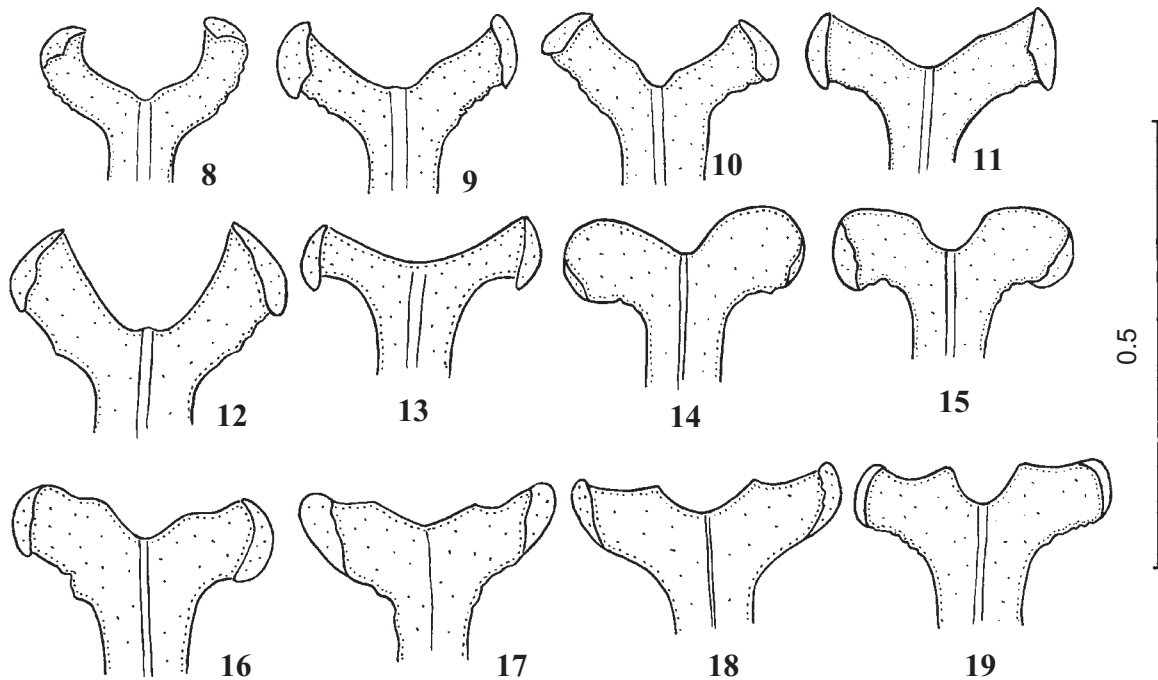
Diplomaragna longibrachiata Shear, 1990: 14, figs.

Diplomaragna longibrachiata — Mikhailjova, 1993: 25.

Ancestreuma longibrachiatum — Mikhailjova, 2000: 155; Mikhailjova & Golovatch, 2001: 109.

Material examined: 1 ♂, 1 ♀ (IBSV), Russia, Siberia, Irkutsk Area, Ust-Ilim Distr., 14 km N of Pod'elanka, on mushroom, 18.VII.2000; leg. P.B. Klimov.

Published material re-examined: ♂ holotype (ZMUM), Russia, Siberia, Krasnoyarsk Prov., 151 road km between Kyzyl and Abakan, upper flow of Us River, *Betula*+*Salix* forest, 14.VIII.1984; leg. A. Ryvkin. (NB: Shear [1990] referred to "15.VIII.1984, mixed forest along a stream"). — 1 ♂ paratype (ZMUM), Mongolia, Lake Khubsugul, Ongolich-Gol River, *Larix* forest, pitfall traps, 3.VIII.1977; leg. V.G. Shilenkov [Shear, 1990]. — 1 ♂ (IBSV), Russia, Siberia, Tuva Republic, West Sayan, Kurtushibinsky Mt. Range, ca. 10 km NW of Shivilig, 1,100–1,200 m a.s.l., mixed forest, litter, 6.VII.1990; leg. D.V. Logunov [cf. Mikhailjova & Golovatch, 2001].



Figs 8–19. Variation in anterior gonopod sternal process of *Ghilarovia cylindrica* (Stuxberg, 1876), ♂♂: from territory of tree felling near Mirnyi, Toguchin Distr., Novosibirsk Area (8, 10, 11), from *Abies-Populus* forest near Mirnyi, Toguchin Distr., Novosibirsk Area (9, 13), from *Tilia* forest near Kuzedeevo, Novokuznetsk Distr., Kemerovo Area (12), from near mouth of Bezmyanka River, Kuznetsky Alatau Reserve, Kemerovo Area (18), from *Salix* forest near Yarskoe, Tomsk Distr., Tomsk Area (14, 15), from *Larix* forest near Yarskoe, Tomsk Distr., Tomsk Area (17), from Petrov Kamen' near Yarskoe, Tomsk Distr., Tomsk Area (16), from *Betula* forest near Kommunar, Khakassia. (19). — Scale in mm.

Рис. 8–19. Изменчивость стернального отростка передних гоноподий *Ghilarovia cylindrica*, comb. n., ♂♂: с лесной вырубке в окрестностях п. Мирный Тогучинского р-на Новосибирской обл. (8, 10, 11), из пихтово-осинового леса в окрестностях п. Мирный Тогучинского р-на Новосибирской обл. (9, 13), из липового леса в окрестностях п. Кузедеево Новокузнецкого р-на Кемеровской обл. (12), из окрестностей устья р. Безмянка в заповеднике “Кузнецкий Алатау” в Кемеровской обл. (18), из ивового леса в окрестностях с. Ярское Томского р-на Томской обл. (14, 15), из лиственничного леса в окрестностях с. Ярское Томского р-на Томской обл. (17), из точки “Петров Камень” в окрестностях с. Ярское Томского р-на Томской обл. (16), из березового леса в окрестностях п. Коммунар в Хакасии (19). — Масштаб в мм.

REMARKS: This species has hitherto been known from the southern part of Krasnoyarsk Province (type locality) and Tuva, Siberia to northern Mongolia.

The above material appears to show some variation in gonopod structure. Thus, the lateral sheath process of the posterior gonopod colpocoxite ranges from blunt with a subapical projection to pointed without distinct subapical projection (Figs 20–23). The width of the colpocoxite mesal process is varied as well (Figs 24–26). The subapical branch of the anterior gonopod telopodites ranges from almost pointed to blunt apically (Figs 27–30). The apex of the colpocoxite is narrow to oval (Figs 31–34). The posterior gonopod telopodite femur is with or without a claw vestige apically.

Ancestreuma ryvkini (Shear, 1990)

Diplomaragna ryvkini Shear, 1990: 14, figs.

Diplomaragna ryvkini — Mikhailjova, 1993: 25.

Ancestreuma ryvkini — Mikhailjova, 2000: 156; Mikhailjova & Golovatch, 2001: 109.

Material examined: 1 ♂ (MIZW), Russia, Siberia, Irkutsk Area, Port Baikal, forest, 3.X.1959; leg. B. Pisarski.

REMARKS: This species is likewise known both from Siberia (Buryatia, Tuva, Irkutsk Area, central part of Krasnoyarsk Prov.) and northern Mongolia.

Diplomaragnidae gen. sp.

Material examined: 1 juv. (MZUH), “[Russia, Siberia], Krasnoyarsk, 1.IX.1915, two illegible words, N 5964; [leg.] Y. Vuorentaus”. — 1 juv. (MZUT), Russia, Siberia, Tuva, Tannu-Ola, S slope, 50°47' N, 94°19' E, alt. 1,670 m, *Larix-Rhododendron* forest, 8–17.VI.1995; leg. S. Koponen. — 4 juv. (MZUT), Russia, Siberia, Tuva, Tannu-Ola, S slope, 50°48' N, 94°18' E, alt. 2,100 m, *Pinus-Larix* forest, 8–17.VI.1995; leg. S. Koponen. — 1 juv. (MZUT), Russia, Siberia, Buryatia, Barguzin Range, Upper Kurumkan, 54°21' N, 110°12' E, 700 m, forest, 2–12.VII.1996; leg. S. Koponen.

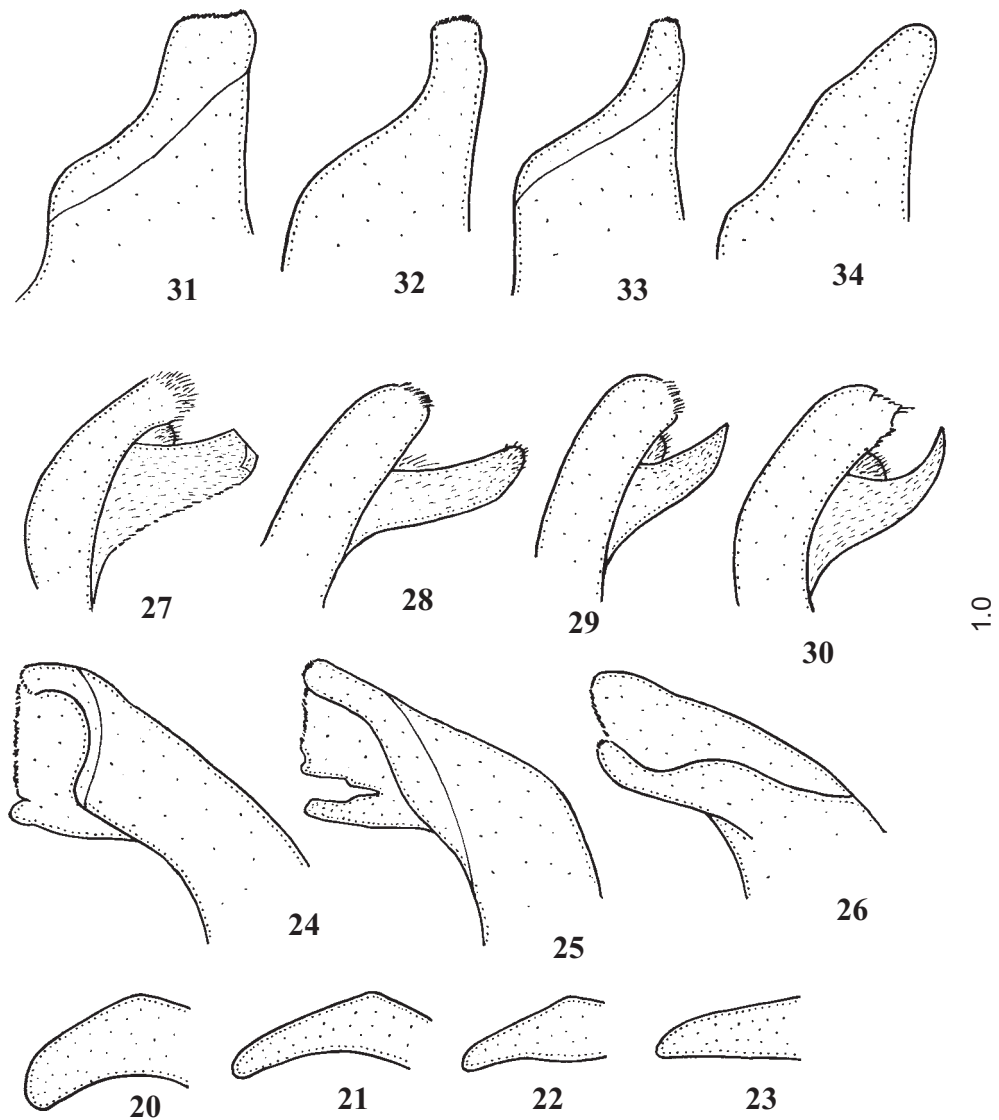
REMARKS: To the author's regret, no closer identification of these samples could be possible, the more so as *Diplomaragna* Attems, 1907 sensu Shear [1990] has since been split into several genera [Mikhailjova, 2000].

Sibiriulus profugus (Stuxberg, 1876), **comb.n.**

Figs 6–7.

Iulus (recte: *Julus*) *profugus* Stuxberg, 1876a: 33 (holotype not designated, number of specimens in the type series unclear; Russia: Siberia, from between Tomsk and Kansk, Krasnoyarsk Prov.; in NHMS).

Iulus profugus — Stuxberg, 1876b: 316.



Figs 20–34. Variation in structure of the gonopods of *Ancestreuma longibrachiatum* (Shear, 1990), ♂♂: from Tuva (20, 25, 27, 31), from Krasnoyarsk Prov. (holotype) (21, 28, 32), from Irkutsk Area (22, 24, 30, 33), Mongolia (23, 26, 29, 34); 20–23 — lateral process of colpocoxite sheath groove (mesal view); 24–26 — mesal process of colpocoxite sheath groove (lateral view); 27–30 — distal part of anterior gonopod telopodite (lateral view); 31–34 — apex of gonopod colpocoxite (ventral view). — Scale in mm.

Рис. 20–34. Изменчивость структуры гоноподий *Ancestreuma longibrachiatum* (Shear, 1990), ♂♂: из Тувы (20, 25, 27, 31), из Красноярского края (голотип) (21, 28, 32), из Иркутской обл. (22, 24, 30, 33), Монголии (23, 26, 29, 34); 20–23 — боковой отросток кроющей бороздки колопоксита гоноподий (вид изнутри); 24–26 — срединный отросток кроющей бороздки колопоксита гоноподий (вид сбоку); 27–30 — дистальная часть телоподита передних гоноподий (вид сбоку); 31–34 — вершина колопоксита гоноподий (вид снизу). — Масштаб в мм.

Julus profugus — Mikhaljova, 1993: 34; Mikhaljova & Golovatch, 2001: 116.

Cylindroiulus (Sibiriulus) dentiger Gulička, 1963: 519, figs (holotype male; Russia: Siberia, Prokopievsk, Kemerovo Area; in Gulička's collection), **syn.n.**

Sibiriulus dentiger — Lokšina & Golovatch, 1979: 387; Mikhaljova, 1993: 14, figs; Mikhaljova & Golovatch, 2001: 106.

Material examined: *Julus profugus*: 1 ♀ (NHMS), "Iulus profugus Stuxberg, Siber. mellan, Tomsk & Kainsk, 15–17.10.75, Sg." and "Obostäm bara nugojur (LulenLp.)" (= Russia, Siberia, Tomsk and Kansk, Krasnoyarsk Prov., 15–17.10.1875; det. Stuxberg).

Sibiriulus dentiger: 2 ♂♂, 6 ♀♀, 18 juv. (IBSV), Russia, Siberia, Novosibirsk Area, Toguchin Distr., environs of Mirnyi, area of

tree felling, 7–16.VIII.1985; leg. V.D. Bakurov. — 2 ♂♂, 2 juv., 1 fragment (IBSV), Russia, Siberia, Novosibirsk Area, Toguchin Distr., environs of Kotorovo, taiga, glade with snow, 0–4 cm soil depth, 26.XI.1986; leg. V.D. Bakurov. — 1 ♀ (IBSV), Russia, Siberia, Novosibirsk Area, Toguchin Distr., environs of Kotorovo, taiga, glade with snow, 4–10 cm soil depth, 26.XI.1986; leg. V.D. Bakurov. — 1 ♂, 4 juv. (IBSV), Russia, Siberia, Novosibirsk Area, Toguchin Distr., environs of Kotorovo, *Populus* forest, 21.I.1987; leg. V.D. Bakurov. — 1 ♂, 2 ♀♀ (IBSV), Russia, Siberia, Novosibirsk Area, Toguchin Distr., environs of Kotorovo, *Abies* forest, 23.I.1987; leg. V.D. Bakurov. — 7 ♀♀ (SUT), Russia, Siberia, Tomsk Area, Tomsk Distr., near Lyazgino, mixed forest, 20.VII.1999; leg. P.S. Nefediev.

Published material re-examined: 1 ♀ (ZMUM), Russia, Siberia, Kemerovo Area, Novokuznetsk Distr., ca. 10 km E of Kuzedeyevo, *Tilia* insular forest (= Lipovyi ostrov), 23.VII.1994; leg. A.V. Ryvkin [Mikhaljova & Golovatch, 2001].

DISTRIBUTION: Russia, Siberia: Novosibirsk Area, Kemerovo Area, Tomsk Area, southern part of Krasnoyarsk Prov., Khakassian Republic.

DESCRIPTION: Female. Length 15–17 mm, diameter 0.9–1.1 mm. Body segments without telson 40(-2)–43(-2). Coloration from dark brown with reddish tinge to light brown; venter lighter to same as background. Antennae dark brown to brown, legs light brown, eyes black. Each ring with a dark spot level to ozopore; each prozonite with a middle, transverse, marble band and a subventral spot, pattern of spots and bands being especially distinct in lighter specimens and more obscure in darker ones.

29 ocelli in a subquadrate-rounded eyepatch on each side of head. Vertigial setae 1+1, supralabral setae 2+2, 1+2 or 3+3, labral setae 6+6, 7+7, 8+8, 6+7, 7+8 or 8+9. Genae unmodified. Gnathochilarium usual. Antennae medium-sized, rather slender and clavate. Antennomere 5 with an incomplete distodorsal corolla of six minute sensory bacilli. Collum without striae.

Body slender, subcylindrical, slightly tapering toward telson. Suture between pro- and metazona shallow. Ozopores small, lying behind suture but not touching latter. Metazonal striation not reaching the rear margin in dorsal and lateral parts. Ventral part of metazona striate all along their length, 4–5 striae in a square with sides equal to metazonal length of midbody ring. A transverse row of sparse, thin, rather short setae close to caudal edge of metazonites. Prozona smooth. Telson setigerous, with a short, subcylindrical epiproct carrying a little claw directed caudad. Distal part of each anal valve covered with long setae. Subanal scale subtriangular, setose only along caudal edge.

Legs slender, not long. Claw with a thin, long, setiform outgrowth at base ventrally. Leg pairs 1 & 2 normal. Vulva as in Figs 6 & 7.

Male: Redescribed earlier [Mikhaljova, 1993] but that redescription erring in stating unmodified claws on walking legs. In fact, ♂ claw with a thin, long, setiform outgrowth at base ventrally like in ♀.

REMARKS: Originally described from between Tomsk and Kansk, Krasnoyarsk Prov., Siberia too incompletely [Stuxberg, 1876a], *Julus profugus* has since remained among *nomina dubia* [Mikhaljova & Golovatch, 2001]. That *J. profugus* might prove to be a synonym of either *Sibiriulus dentiger* or *Julus ghilarovi* Gulička, 1963 has long been suspected [Mikhaljova, 1993] but it was only recently that I received type material of *profugus* for restudy. As there is no indication in Stuxberg [1876a, b] concerning the number of specimens in the type series, this ♀ has been designated as lectotype.

Sibiriulus dentiger was originally described from near Prokopievsk, Kemerovo Area, Siberia [Gulička, 1963] and, later, redescribed based on material from the Novosibirsk Area and the Krasnoyarsk Prov. [Mikhaljova, 1993].

Although female material of *Julus* and *Sibiriulus* is basically barely if at all distinguishable, the lectotype of *profugus* matches perfectly *S. dentiger* near-topotypes. Also supported by geographical evidence, the following new formal synonym and combination are advanced: *Julus profugus* Stuxberg, 1876 = *Cylindroiulus dentiger* Gulička, 1963, syn.n. = *Sibiriulus profugus* (Stuxberg, 1876), comb.n., the valid name being the last.

Julus ghilarovi Gulička, 1963

Julus ghilarovi Gulička, 1963: 520, figs.

Julus ghilarovi — Lokšina & Golovatch, 1979: 386; Mikhaljova, 1993: 11, figs; Mikhaljova & Golovatch, 2001: 104.

Material examined: 2 ♀♀ (MZUH), "West Sibirien, Abakanska fruket, VIII.1885, N 5967, R. Hammarström" (= Russia, Siberia, Khakassian Republic, VIII.1885, N5967; leg. R. Hammarström). — 2 juv. (MZUH), "West Sibirien, Abakanska jäsnfruket, 1885, N 5966, R. Hammarström" (= Russia, Siberia, Khakassian Republic, 1885, N5966; leg. R. Hammarström). — 7 juv., 1 fragment (MZUH), "West Sibirien, Abakanska Savoden, VIII.1885, N 5968, R. Hammarström" (= Russia, Siberia, Khakassian Republic, VIII.1885, N5968; leg. R. Hammarström). — 1 juv. (MZUH), "West Sibirien, Osnatjannaja, 1885, N 5969, R. Hammarström" (= Russia, Siberia, Khakassian Republic, 1885, N5969; leg. R. Hammarström).

REMARKS: This species represented by presumably two subspecies is distributed in the western and southern parts of Siberia, being rather variable.

Orinisobates sp.

Material examined: 1 ♀, 1 fragment (MZUH), "Sibiria, guv. Jenissej, Minussinsk, 1881, N 5970, Roschies (= Russia, Siberia, Krasnoyarsk Prov., Minusinsk, 1881, N5970; leg. Roschies).

REMARKS: As this sample has no ♂ material, it appears impossible to identify it closer to species. Yet, based on geographical evidence, it seems more plausible to belong to *O. sibiricus* (Gulička, 1963), a species already known for the southern part of Krasnoyarsk Province [Enghoff, 1985].

Schizoturanius clavatipes (Stuxberg, 1876)

Polydesmus clavatipes Stuxberg, 1876a: 34, figs.

Polydesmus clavatipes — Stuxberg, 1876b: 316.

Schizoturanius clavatipes — Lohmander, 1933: 27; Hoffman, 1975: 82, figs; Lokšina & Golovatch, 1979: 384; Mikhaljova, 1993: 32, fig.; Mikhaljova & Golovatch, 2001: 116.

Material examined: 1 ♂ (MZUH), "[Russia, Siberia], Krasnoyarsk, 1.IX.1915, N5965; [leg.] Y. Vuorentaus".

REMARKS: This species is widespread in western and southwestern Siberia [cf. Mikhaljova & Golovatch, 2001].

Angarozonium amurense (Gerstfeldt, 1859)

Polyzonium germanicum — Stuxberg, 1876a: 36 (pro parte); 1876b: 317 (pro parte).

Polyzonium amurense — Mikhaljova, 1979: 1591.

Polyzonium cyathiferum Mikhaljova, 1981: 781, figs.

Polyzonium cyathiferum — Mikhaljova, 1983: 309; 1993: 8, map; Rybalov, 1991: 87.

Angarozonium amurense — Shelley, 1998: 29; Mikhaljova, 1998a: 12, map, figs; 1998b: 4; Mikhaljova & Golovatch, 2001: 104.

Material examined: 1 ♂, 1 ♀ (NHMS), "Polyzonium germanicum Brdt., 23. Jenissej: lat. 66°17', Goroschinskoj, 10.IX.1875; ND & SG." (= Russia, Siberia, Krasnoyarsk Prov., Turukhansk Distr., 66°17', Goroshikha, 10.IX.1875; leg. Nordenskiöld, det. Stuxberg). — 1 ♀, 1 fragment (NHMS), "Polyzonium germanicum Brdt., 28. Jenissej: lat. 64°25', Baklanowskij, 15.IX.1875; SG." (= Russia, Siberia, Krasnoyarsk Prov., Turukhansk Distr., 64°25' Baklanikha, 15.IX.1875; det. Stuxberg). — 1 ♀ (NHMS), "Polyzonium germanicum Brdt., 29. Jenissej: lat. 63°50', Nischnij Inbatsk, 16.IX.1875; ND & SG." (= Russia, Siberia, Krasnoyarsk Prov., Turukhansk Distr., 63°50', Nizhneimbatskoe, 16.IX.1875; leg. Nordenskiöld, det. Stuxberg). — 1 ♂, 2 ♀♀ (MZUT), "USSR, Yakutian ASSR (= Russia, Siberia), Oktyomey, taiga, 8.VII.1997; leg. S. Koponen". — 1 ♀ (MZUT), "USSR, Yakutian ASSR (= Russia, Siberia), Ljampeshka, 64°40'N, 123°30'E, *Sphagnum* in swamp, *Larix* forest,

16.VII.1977; leg. S. Koponen". — 1 ♀ (MZUT), "USSR, Yakutian ASSR (= Russia, Siberia), Ljampeshka, leaf litter, 19.VII.1977; leg. S. Koponen. — 1 ♂ (MZUT), Russia, Siberia, Buryatia, Svyatoy Nos, pus. Monahovo, leaf lit., 53°40' N, 109°00' E, 500 m, 14.VII.1996; leg. S. Koponen.

REMARKS: As expected, Stuxberg [1876a, b] misidentified the above material from the Krasnoyarsk Province, in NHMS, as *Polyzonium germanicum*. It actually represents *Angarozonium amurense*. Originally described from near the mouth of Songari River, China, *A. amurense* appears to be widespread throughout Siberia (central part of Krasnoyarsk Prov., Buryatia, Chita Area, central Yakutia) and the Russian Far East (Khabarovsk Prov., Sakhalin Area and Kamchatka Area). Species of the genus *Polyzonium* Brandt, 1837 have hitherto been recorded in Europe while Siberia and the Far East of Russia with the adjacent parts of China and Korea are only populated by species of *Angarozonium* Shelley, 1998 [cf. Shelley, 1998].

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