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An outline of the geographical distribution of world Chilopoda

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ABSTRACT Contrib. Nat. Hist. 12: 183–209.

We present here an updated outline of the large-scale faunistic diversity of Chilopoda, based on all published information on the geographical occurrence of species by countries, which has been made available in the electronic on-line catalogue Chilo-Base. In particular, we analyse comparatively (i) the geographical distribution and the geographical variation in species number of all orders and families, (ii) the centipede fauna of 17 major sub-continental regions, and (iii) the most frequent and the most peculiar patterns of distribution of centipede genera.

Introduction

Within the hyper-diverse phylum Arthropoda, Chilopoda are a major, well distinct clade, whose fossil record dates back to the Devonian and possibly to Upper Silurian. Strictly terrestrial, their capacity of dispersal is generally limited, nevertheless different among the different main lineages. Even though many centipede groups could be promising targets for investigations on ecological and historical biogeography and evolutionary biology, primary information on the current distribution of different taxa and on the actual differences between regional faunas still remains largely incomplete and often affected by unsatisfactory classification and erroneous published records.

The last comprehensive, detailed analyses of the worldwide distribution of Chilopoda were provided long ago by Verhoeff (1902–1925) and Attems (1926). However, these authors founded their biogeographical outlines on a taxonomic framework which has been largely superseded, as well as on very limited faunistic data in respect to those available today. Worth notice is that the number of known genera has almost doubled since Attems (1926).

Other biogeographical analyses have been published more recently, based on valuable taxonomical revision and critical synthesis of distributional data. However, worldwide analyses are limited to selected major lineages (e.g.: Eason 1974, 1992 on Lithobiomorpha; Shelley 1997 on Plutoniumidae; Bonato & al. 2003 on Mecistocephalidae; Edgecombe & Giribet 2003 on Henicopidae), or even to single genera (e.g.: Bonato & al. in press; Hoffman & Pereira 1991; Pereira & Hoffman 1993; Pereira & Demange 1997; Edgecombe & al. 2006; Giribet & Edgecombe 2006). Conversely, analyses of whole centipede faunas have been circumscribed to particular areas, more often to single countries (e.g.: Takakuwa 1943 for Japan; Turk 1955 for Peru; Matic & al. 1970 for Romania), less frequently to natural regions with zoogeographical identity (e.g.: Shelley 2002 for North America; Minelli & Zapparoli 1992 for the western Alpine range; Zapparoli 1990, 1999 for Anatolia). Worth mentioning is also the biogeographical account on the Geophilomorpha of the Neotropical region by Pereira & al. (1997).

In 2006, after a critical perusal of all taxonomic and faunistic information published so far, within a collaborative project involving taxonomists with complementary expertise in different groups of centipedes, an electronic data base of all valid taxa of Chilopoda (ChiloBase) has been released online (Minelli 2006). For each species, after validation, all published faunistic records, so far scattered in literature, have been synthesised comparatively, and recorded by countries according to current political boundaries.

Data available in ChiloBase allowed us to perform the comprehensive and updated analysis of the world geographical distribution of all Chilopoda, at the level of genus and higher taxonomic ranks, presented here.

Our purposes with this paper are: (a) to outline the overall distribution and the geographic variation in species richness for all orders and families; (b) to assess the faunal composition of the main regions recognisable as distinct for the Chilopoda; (c) to highlight the most frequent patterns of distribution shared by genera, as well as the most peculiar ones. However, any discussion of the historical and ecological determinants of distribution is outside the aims of the present analysis, as it would be largely speculative due to the still unsatisfactory level of taxonomic knowledge on the group.

Material and Methods

We referred to the taxonomy and nomenclature adopted in ChiloBase (Minelli 2006), as updated to 2008, with a few additions and emendations that are going to be published elsewhere and will be integrated in the next release of ChiloBase (above all: Bonato & al. 2007; Minelli in prep.). We ignored a few genera and species that are suspected to be invalid as synonyms, or whose identity and classification remain unknown. Instead, we are on the way to emendate the generic combination of a few other species, as the apparently incongruent or somehow puzzling distribution of some genera prompted us to a more thorough interpretation of the identity of some species.

As our analysis was based on the geographical information as compiled in ChiloBase, we referred to countries, according to the political situation on the 1st of January 2009. However, in order to make our analysis more sensitive, we treated as independent geographical units some territories which are under some form of administrative dependence from other countries but which are isolated from the country's mainland (e.g., Greenland in respect to Denmark); conversely, we aggregated some minor, contiguous countries when the available records were not detailed enough (see Appendix I). In referring to continents, North America is here intended as excluding the whole of Mexico. Species for which the native distribution is unknown or uncertain have been ignored.

As a result, our outline encompassed 3130 species in 396 genera in 23 families in 5 orders.

We analysed the overall range of distribution and the geographic variation of species richness for all orders, families and genera. We did not extend the analysis to single species, as the taxonomic circumscription and geographical distribution of many of them are not adequately known at present.

We also analysed the faunal composition for some major sub-continental regions, estimating species richness and highlighting the genera which are represented by the highest number of species, as well as those that are exclusive for those areas. We did not refer to traditional biogeographical regions, because these are mainly based on Mammals and their usefulness for analysing other groups is questionable (Cox 2001; Morrone 2002). Instead, we identified some major regions after exploring the geographical variation of Chilopoda faunas throughout the world, with respect to their composition in families and genera. For large countries whose boundaries are not consistent with those of the faunistic regions circumscribed here (above all, China, Mexico and U.S.A.), we assigned taxa to different regions after checking their occurrence within those countries.

Finally, based on a comparative analysis of the distributions of all genera, we recognised the most frequent patterns of distribution.

We are aware that synthetic, country-based data are not fully adequate for a biogeographical analysis. At present, however, an analysis based on more detailed distribution data or more natural geographical units (with biogeographical consistency) would not be practicable or satisfactory, because most species are known from one or a few localities only and many published records have low geographical detail or are hard to identify precisely. Furthermore, our state of knowledge is still unsatisfactory not only with respect to the geographical occurrence of taxa (collecting efforts have been so far strongly uneven worldwide), but also to the taxonomic system (many currently recognised genera and families are possibly not monophyletic). Nevertheless, we feel that our outline will be useful in so far as it is a comprehensive, updated synthesis of current understanding.

Results and Discussion

Geographical distribution of major taxa

Chilopoda

About 3130 species, in about 400 genera.

Almost worldwide, including most part of all continents and islands (Fig. 1; appendix I). No records from Antarctica, most part of Greenland and the American and Asiatic arctic islands, most likely due to local climatic conditions. No records from a large part of the western Saharan Africa, possibly affected by a biased investigation effort.

Maximum species richness in temperate and subtropical parts of North America and in southern Europe; relatively high number of species also in the southernmost Africa and in the Japanese archipelago. A strong gradient of species richness from higher latitudes to temperate and subtropical areas, and a less evident gradient from the equatorial belt to subtropical and temperate regions, most obvious in the Americas, Africa, eastern Asia and the Australian region; however, it is hard to assess how much this latter pattern is affected by the well recognised geographical bias in faunistic investigation.

Scutigeromorpha (Scu.)

About 90 species in 20 genera.

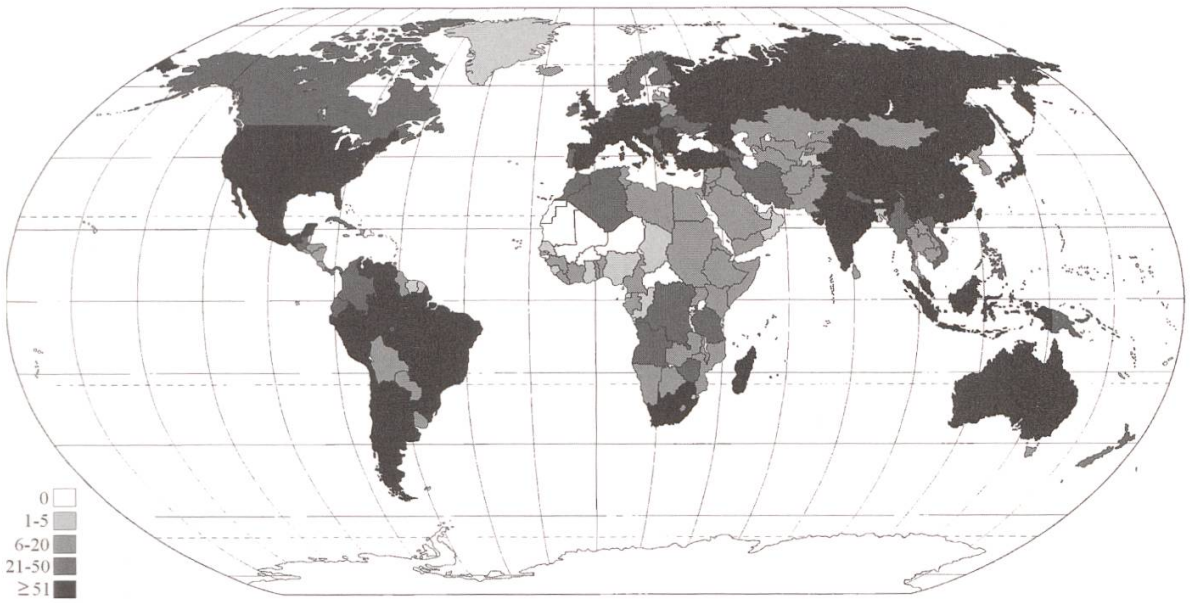

Fig. 1. Geographical distribution of Chilopoda. Level of grey indicates the known number of species in each geographical unit.

Worldwide, in all continental lands with the exception of the northernmost areas, and also in many islands. No records from some subtropical and temperate areas of South America and from some Saharan and sub-Saharan areas in Africa.

Maximum species richness in southern and eastern Africa, the Indian peninsula, south-eastern Asia and Australia.

Pselliodidae (Scu.1)

5 species in one genus.

Tropical and subtropical regions of the Americas (from southern North America to tropical South America, including the Antilles) and Africa (to the exclusion of the northern and Saharan areas, and the southernmost part of the continent); also the Fiji islands.

Scutigeridae (Scu.2)

80 species in 17 genera.

Worldwide, in all continental lands with the exception of the northernmost areas; also in many islands. Many records refer to introduced and often synanthropic populations.

Maximum species richness in Australia and southern Asia, especially south-eastern Asia; within the Americas, Europe and Africa, higher species number in temperate than in tropical regions.

Scutigerinidae (Scu.3)

3 species in 2 genera.

Southern Africa, north to Zimbabwe and Mozambique, and Madagascar.

Lithobiomorpha (Lith.)

About 1100 species in 106 genera.

Worldwide, including the northernmost and southernmost regions and islands. No records from some tropical and subtropical regions in Central and South America, Saharan and sub-Saharan Africa, the Arabic peninsula and south-eastern Asia.

Maximum species richness in all temperate continental areas of both boreal and austral hemispheres (North America, Eurasia, southern South America, southern Africa, Madagascar, Australia and New Zealand).

Henicopidae (Lith.1)

124 species in 19 genera.

All continents and some islands, but only scattered records from tropical regions.

Maximum species richness in temperate continental areas, mainly in the austral hemisphere (southern South America, southernmost Africa, Madagascar, Australia and New Zealand), also in temperate North America, but very low numbers in tropical areas.

Lithobiidae (Lith.2)

982 species in 87 genera.

All continental areas in the boreal hemisphere, namely North America, the whole Mediterranean region and temperate Eurasia from Europe to the Japanese area. Only few, scattered records in tropical regions and the austral hemisphere, most of them due to introductions.

Maximum species richness in North America; high species numbers also in the Mediterranean region and most of continental Asia; lower richness in southern Asia, including the Indian peninsula and south-eastern Asia.

Craterostigmomorpha (Cra.)

2 species in one genus.

Tasmania and New Zealand.

Scolopendromorpha (Sco.)

About 670 species in 33 genera.

Worldwide, in all continents and many islands. No records from most of western Saharan Africa and some areas in Asia.

Maximum species richness in all tropical and subtropical regions, namely central-southern part of both the Americas and Africa, the Mediterranean region, the whole southern Asia and the Australian area. Even in the tropical regions, many records possibly due to introductions.

Cryptopidae (Sco.1)

169 species in 2 genera.

Worldwide, in all continents and some islands. No records from some parts of south-eastern Asia, and a large area between Saharan Africa throughout the Arabian peninsula to central Asia.

Maximum species richness in the temperate parts of both North and South America, Europe and the whole Mediterranean region, central and southern Africa, Madagascar, the Australian region from Indonesia to New Zealand. Lower species number in the tropical regions of the Americas, northern Africa and continental Asia including the south-eastern regions.

Mimopidae (Sco.2)

One species.

Northern China.

Plutoniumidae (Sco.3)

6 species in 2 genera.

Southwestern and eastern North America, and the Mediterranean region.

Scolopendridae (Sco.4)

403 species in 20 genera.

All continental areas with the exception of a large temperate part in the boreal hemisphere; northwards reaching the internal part of North America, southern Europe and central Asia; also in many islands. Many records possibly due to introductions, mainly in islands.

Maximum species richness in all subequatorial regions (northern part of South America, central Africa, and the whole southern Asia) and in some subtropical areas in the austral hemisphere (southernmost Africa, Madagascar and the Australian region).

Scolopocryptopidae (Sco.5)

87 species in 8 genera.

Most part of the Americas, western tropical Africa, and easternmost Asia from the Japanese region to Indonesia; also in the Fiji islands.

Maximum species richness in the tropical Americas; lower numbers in the remaining parts of both North and South America, Africa and eastern Asia.

Geophilomorpha (Geo.)

About 1270 species in 236 genera.

Worldwide, in all continental areas, including the northernmost and southernmost regions, and most islands. No records from most of western Africa, part of South America, and some internal areas in continental Asia.

Maximum species richness in temperate and subtropical North America, most of South America, the Mediterranean region, southernmost Africa, the Japanese region and the Indonesian-Australian area.

Aphilodontidae (Geo.1)

17 species in 4 genera.

Temperate South America and southernmost Africa.

Maximum species richness in Africa.

Ballophilidae (Geo.2)

78 species in 12 genera.

Most of the Americas, to the exclusion of the northernmost and southernmost regions, and including the Antilles; central and southern Africa; Madagascar and some islands in the Indian Ocean; south-eastern Asia and Oceania, from the Chinese region to New Zealand; some islands in the Pacific ocean. Some records possibly due to introductions, mainly in islands.

Maximum species richness in the tropical Americas, in southernmost Africa and in Indonesia.

Dignathodontidae (Geo.3)

23 species in 4 genera.

The whole Mediterranean region, northwards reaching western and central Europe, and the Macaronesian islands.

Maximum species richness in the Iberian, Italian, Balcanic and Anatolian peninsulas.

Eriphantidae (Geo.4)

One species.

Baja California.

Geophilidae (Geo.5)

576 species in 117 genera.

Almost worldwide, i.e. the Americas from the arctic regions to the southernmost regions, including the Antilles, the whole temperate Eurasia (from Macaronesia and the Mediterranean region to the Japanese islands), most of Africa (only scattered records from the western and sub-Saharan regions), Madagascar and the Australian region, including New Zealand and some islands in the Pacific Ocean; only scattered records from southern and south-eastern Asia.

Maximum species richness in North America, particularly in the Californian and Mexican regions, and in southern Europe; relatively high number of species also in South America, the southernmost Africa, Australia and New Zealand.

Gonibregmatidae (Geo.6)

14 species in 6 genera.

Southern Asia, from the Indian Peninsula to the Philippines and Indonesia; also the Fiji islands.

Maximum species richness in Indonesia.

Himantariidae (Geo.7)

69 species in 19 genera.

From the south-western part of North America to Mexico; from Macaronesia, through the whole Mediterranean basin and south-western Asia, to the Indian peninsula and the Maldives; Korean peninsula and Japanese islands. A single record from the central part of South America, probably due to introduction.

Maximum species richness in both the Californian-Mexican region and southern Europe.

Linotaeniidae (Geo.8)

46 species in 6 genera.

Mainly in the boreal hemisphere, namely North America (southwards to Mexico) and temperate Eurasia (from the Azores, through the whole of Europe and north-central Asia, to the Japanese region); also the central Andes. Old records from Central America are possibly due to wrong classification of species.

Maximum species richness in North America, central Europe and Japan.

Macronicophilidae (Geo.9)

4 species in one genus.

Subequatorial South America.

Mecistocephalidae (Geo.10)

172 species in 11 genera.

Limited areas in the south-western part of North America and in central Europe; Atlantic coasts and islands in the tropical Americas; central Africa; Madagascar and some islands in the Indian Ocean; southern and eastern Asia, northwards reaching the Kuril islands; Australia and many islands in the Pacific Ocean.

Maximum species richness in eastern Asia, from Japan to Indonesia; relatively high number of species also in southern Asia; only a few species in the Americas, Europe and continental Africa.

Neogeophilidae (Geo.11)

4 species in 2 genera.

Central America, Mexico to Guatemala.

Oryidae (Geo.12)

45 species in 18 genera.

Most of the Americas, from the temperate regions of North America to the central part of South America, including the Antilles; the westernmost part of the Mediterranean region; south-eastern Africa, with scattered records from remaining continental Africa; Madagascar; the Japanese region; southern Asia; Australia and some islands in the Pacific Ocean.

Maximum species richness in tropical South America, south-eastern Africa and Madagascar.

Schendylidae (Geo.13)

219 species in 33 genera.

The whole of the Americas including the Antilles; the whole of Europe and central-northern Asia, including the Japanese region; scattered records from the whole of Africa; Madagascar; from Indochina, through Indonesia, to Australia, New Caledonia, Hawaii and the Fiji Islands.

Maximum species richness in North America, South America and southern Europe; relatively high numbers of species also in Japan and southernmost Africa.

region	approximate number of species (genera)					exclusive genera
	Chilopoda	Scutigerom.	Lithobiom.	Scolopendrom.	Geophilom.	
Temperate North America	380 (85)	4 (2)	240 (50)	20 (7)	115 (26)	38%
Californian-Mexican region	415 (140)	5 (2)	210 (55)	45 (12)	155 (71)	49%
Caribbean region	80 (37)	5 (4)	4 (2)	30 (10)	40 (21)	19%
Tropical South America	300 (52)	5 (4)	15 (2)	160 (15)	120 (31)	25%
Temperate South America	145 (45)	5 (2)	20 (6)	35 (9)	85 (28)	42%
Temperate Eurasia	325 (45)	10 (3)	190 (12)	15 (4)	110 (26)	18%
Mediterranean region	560 (57)	4 (3)	300 (10)	50 (8)	205 (36)	38%
Japanese region	185 (38)	4 (3)	85 (7)	20 (6)	75 (22)	13%
Central Africa	170 (38)	10 (4)	10 (2)	90 (10)	60 (22)	21%
Southernmost Africa	150 (33)	4 (3)	15 (4)	55 (10)	75 (16)	18%
Madagascar	50 (21)	5 (3)	5 (3)	20 (6)	20 (9)	14%
Indian region	180 (33)	10 (5)	50 (6)	85 (10)	35 (12)	3%
South-eastern Asia	210 (43)	10 (4)	40 (7)	90 (16)	70 (16)	36%
New Guinea	40 (21)	5 (5)	1 (1)	20 (9)	15 (6)	9%
Australia	135 (44)*	20 (9)	25 (7)	45 (9)	45 (16)	20%
New Zealand	40 (19)*	1 (1)	10 (4)	15 (4)	15 (9)	0%
Pacific islands	100 (31)	10 (4)	5 (4)	35 (8)	50 (15)	13%

Tab. 1. Approximate number of species and genera in different geographical regions. *Including *Craterostigmus* (Craterostigmomorpha).

Faunas of major regions (Tab. 1)

Temperate North America

Most part of North America, to the exclusion of the south-western regions.

Scu.: Scutigeridae and Pselliodidae.

Lith.: mainly Lithobiidae, also Henicopidae; mainly *Bothropolys, Garibius, Gosibius, Lithobius, Nampabius, Neolithobius, Oabius,* and *Paitobius*; many exclusive genera, e.g. *Eulithobius, Garibius, Nampabius, Paobius, Sonibius* and *Zygethopolys*.

Sco.: Cryptopidae, Plutoniumidae, Scolopendridae and Scolopocryptopidae; mainly *Cryptops*, *Scolopendra* and *Scolopocryptops*.

Geo.: mainly Geophilidae, also Himantariidae, Linotaeniidae and Schendylidae; mainly *Arctogeophilus*, *Arenophilus, Escaryus, Geophilus* and *Strigamia*; with the exclusive *Agathothus, Damothus, Dysmesus, Gosendyla, Leptodampus*, *Poaphilus, Synthophilus* and *Zantaenia*.

Californian-Mexican region

From the south-western part of North America (California, Arizona) to central Mexico.

Scu.: mainly Scutigeridae, also Pselliodidae.

Lith.: mainly Lithobiidae, also Henicopidae; mainly *Arebius*, *Gosibius, Lithobius,* and *Oabius*; many exclusive genera, e.g. *Cruzobius, Delobius, Labrobius, Nothembius, Pseudolithobius, Sotimpius, Taiyubius,* and *Vulcanbius*.

Sco.: Cryptopidae, Scolopendridae, Plutoniumidae and Scolopocryptopidae; mainly *Cryptops*, *Newportia* and *Scolopendra*; with the exclusive *Ectonocryptoides*, *Ectonocryptops* and *Thalkethops*.

Geo.: mainly Geophilidae, secondarily Himantariidae and Schendylidae, but also Ballophilidae, Linotaeniidae, Mecistocephalidae, Oryidae and two exclusive minor families, i.e. Eriphantidae and Neogeophilidae; mainly *Chomatobius, Garrina, Nyctunguis* and *Polycricus*; many exclusive genera, e.g. *Aztekophilus, Condylona, Eriphantes, Garrina, Garriscaphus, Geoballus, Gosipina, Neogeophilus, Nothobius* and *Pycnona*.

Caribbean region

Greater and Lesser Antilles and surrounding islands, including the Bahamas.

Scu.: both Pselliodidae and Scutigeridae.

Lith.: Henicopidae and introduced Lithobiidae; mainly *Lamyctes*.

Sco.: mainly Scolopendridae, also Cryptopidae and Scolopocryptopidae; mainly *Cormocephalus*, *Newportia* and *Scolopendra*.

Geo.: Ballophilidae, Geophilidae, Oryidae, Schendylidae, also Mecistocephalidae; mainly *Ityphilus*, *Polycricus* and *Telocricus*; with the exclusive *Bimindyla*, *Clavophilus, Erithophilus, Leucolinum, Portoricellus* and *Portoricona*.

Tropical South America

Northern and central part of South America.

Scu.: Pselliodidae and Scutigeridae; with the exclusive *Thereulla* and *Thereuoquima*.

Lith.: mainly Henicopidae, also Lithobiidae; mainly *Lamyctes*.

Sco.: mainly Scolopendridae and Scolopocryptopidae, also Cryptopidae; mainly *Cormocephalus, Cryptops, Newportia, Otostigmus, Rhysida, Scolopendra* and *Scolopocryptops*; with the exclusive *Kartops* and *Scolopendropsis*.

Geo.: mainly Ballophilidae, Geophilidae, Oryidae and Schendylidae, also Mecistocephalidae and the exclusive minor family Macronicophilidae; mainly *Ityphilus, Pectiniunguis, Ribautia* and *Schendylops*; with the exclusive *Cereth-*

mus, Heniorya, Hyphydrophilus, Koinethmus, Macronicophilus, Peruphilus, Orygmadyla and *Thindyla*.

Temperate South America

Southern part of South America, northwards to the central Andes and the Paraguay basin.

Scu.: Scutigeridae only, with the exclusive *Brasiloscutigera*.

Lith.: Henicopidae and introduced Lithobiidae; mainly *Anopsobius* and *Lamyctes*, with the exclusive *Analamyctes* and *Catanopsobius*.

Sco.: Cryptopidae and Scolopendridae, fewer Scolopocryptopidae; mainly *Cryptops, Akymnopellis* and *Otostigmus*.

Geo.: mainly Geophilidae and Schendylidae, also Aphilodontidae, fewer Ballophilidae, Linotaeniidae and Oryidae; mainly *Pandineum, Schendylops* and *Plateurytion*; many exclusive genera, e.g. *Apogeophilus, Araucania, Chilenophilus, Dinogeophilus, Mecistauchenus, Mecophilus, Metaxythus, Pandineum, Schendyloides* and *Trematorya*.

Temperate Eurasia

Most of Eurasia, from north-western Europe to eastern Siberia, southwards to the exclusion of the whole southern Europe, Arabic peninsula, Indian region, Indochinese peninsula and the islands of south-eastern Asia.

Scu.: Scutigeridae only.

Lith.: mainly Lithobiidae, fewer Henicopidae; mainly *Lithobius*; with the exclusive *Dakrobius, Hedinobius, Pterygotergum, Schizotergitius* and *Validifemur.*

Sco.: Cryptopidae and Scolopendridae, with the exclusive Mimopidae; mainly *Cryptops* and *Scolopendra*.

Geo.: mainly Geophilidae and Schendylidae, also Dignathodontidae, Himantariidae, Linotaeniidae and Mecistocephalidae; mainly *Escaryus, Geophilus, Schendyla* and *Strigamia*; some exclusive genera, e.g. *Krateraspis* and *Taschkentia*.

Mediterranean region

Whole regions around the Mediterranean and the Black Sea, eastwards to include the Caucasus; also Macaronesia.

Scu.: Scutigeridae only; with the exclusive *Tachythereua*.

Lith.: mainly Lithobiidae, also Henicopidae; mainly *Eupolybothrus, Harpolithobius* and *Lithobius*; some exclusive genera, e.g. *Eupolybothrus* and *Pleurolithobius*.

Sco.: Cryptopidae, Plutoniumidae and Scolopendridae; mainly *Cryptops* and *Scolopendra*; with the exclusive *Plutonium*.

Geo.: mainly Dignathodontidae, Geophilidae, Himantariidae and Schendylidae, also Linotaeniidae, Mecistocephalidae and Oryidae; mainly *Geophilus, Henia, Schendyla* and *Stigmatogaster*; many exclusive genera, e.g. *Acanthogeophilus, Clinopodes, Dignathodon, Gnathoribautia, Haploschendyla, Himantariella, Nannophilus, Porethus* and *Thracophilus*.

Japanese region

Japanese archipelago, Korean peninsula and Taiwan.

Scu.: Scutigeridae only; mainly *Thereuopoda*.

Lith.: mainly Lithobiidae, also Henicopidae; mainly *Bothropolys* and *Lithobius*; with the exclusive *Shikokuobius*.

Sco.: mainly Scolopendridae, also Cryptopidae; mainly *Otostigmus* and *Scolopocryptops*.

Geo.: mainly Mecistocephalidae, also Geophilidae, Linotaeniidae and Schendylidae, fewer Ballophilidae, Himantariidae and Oryidae; mainly *Arrup, Escaryus, Geophilus, Mecistocephalus* and *Strigamia*; with the exclusive *Falcaryus, Partygarrupius, Proterotaiwanella* and *Takashimaia*.

Central Africa

Most of Africa, northwards to the sub-Saharan regions, southwards to the highlands of southern Africa.

Scu.: mainly Scutigeridae, also Pselliodidae; mainly *Scutigera* and *Thereuonema*; with the exclusive *Ballonemella*.

Lith.: only Henicopidae, namely *Lamyctes* and *Lamyctopristus*.

Sco.: mainly Cryptopidae and Scolopendridae, also Scolopocryptopidae; mainly *Cryptops, Cormocephalus* and *Otostigmus*.

Geo.: mainly Geophilidae, also Ballophilidae, Mecistocephalidae, Oryidae and Schendylidae; mainly *Ballophilus, Ctenophilus, Ribautia* and *Schizotaenia*, with the exclusive *Afrotaenia, Chamberlinia, Ctenorya, Harpacticellus, Lamotteophilus, Proschizotaenia, Stenorya*.

Southernmost Africa

Southernmost part of Africa, northwards to the Kalahari.

Scu.: Pselliodidae, Scutigeridae and Scutigerinidae.

Lith.: Henicopidae and introduced Lithobiidae; mainly *Lamyctes, Lamyctopristus* and *Paralamyctes*.

Sco.: mainly Scolopendridae, but also Cryptopidae; mainly *Cormocephalus*.

Geo.: mainly Geophilidae, also Aphilodontidae, Oryidae and Schendylidae, fewer Ballophilidae; mainly *Aphilodon, Geoperingueyia*, *Plateurytion* and *Polygonarea*; with the exclusive *Achilophilus, Aspidopleres, Cephalodolichus, Diphtherogaster,* and *Purcellinus*.

Madagascar

Madagascar and the Comoro Islands.

Scu.: Scutigeridae and Scutigerinidae; with the exclusive *Madagassophora*.

Lith.: Henicopidae only.

Sco.: Cryptopidae and Scolopendridae; mainly *Cormocephalus* and *Cryptops*.

Geo.: mainly Mecistocephalidae and Oryidae, also Ballophilidae, Geophilidae and Schendylidae; mainly *Mecistocephalus* and *Orphnaeus*; with the exclusive *Hovanyx* and *Madageophilus*.

Indian region

Indian peninsula and surrounding regions, northwards to the Himalayas; also Sri Lanka and the Maldives.

Scu.: Scutigeridae only; mainly *Thereuonema* and *Thereuopodina*.

Lith.: mainly Lithobiidae, also Henicopidae; mainly *Australobius* and *Lithobius*.

Sco.: mainly Scolopendridae, also Cryptopidae; mainly *Otostigmus*, *Rhysida* and *Scolopendra*.

Geo.: mainly Himantariidae and Mecistocephalidae, also Ballophilidae, Geophilidae, Gonibregmatidae and Oryidae; mainly *Mecistocephalus, Mesocanthus* and *Polyporogaster*; with the exclusive *Disargus*.

South-eastern Asia

The whole Indochinese peninsula and the Malay Archipelago.

Scu.: Scutigeridae only; mainly *Parascutigera*.

Lith.: mainly Lithobiidae, also Henicopidae; mainly *Australobius* and *Lithobius*.

Sco.: mainly Scolopendridae, also Cryptopidae and Scolopocryptopidae; mainly *Cryptops* and *Otostigmus*, with the exclusive *Asanadopsis*, *Edentistoma*, *Malaccolabis*, *Psiloscolopendra*, *Sterropristes* and *Tonkinodentus*.

Geo.: mainly Mecistocephalidae, also Ballophilidae, Geophilidae, Gonibregmatidae, fewer Schendylidae and Oryidae; mainly *Ballophilus* and *Mecistocephalus*; with the exclusive *Anarrup, Dschangelophilus*, *Geoporophilus*, *Javaenia*, *Leptoschendyla*, and *Sogophagus*.

New Guinea

New Guinea and surrounding islands.

Scu.: Scutigeridae only, with the exclusive *Ballonema* and *Podothereua*.

Lith.: Lithobiidae only, with *Australobius*.

Sco.: mainly Scolopendridae, also Cryptopidae and Scolopocryptopidae; mainly *Ethmostigmus* and *Otostigmus*.

Geo.: mainly Mecistocephalidae, fewer Gonibregmatidae and other families; mainly *Gonibregmatus* and *Mecistocephalus*; with the exclusive *Endoptelus*.

Australia

Whole continental Australia and Tasmania.

Scu.: Scutigeridae only; mainly *Allothereua* and *Parascutigera*; with the exclusive *Pilbarascutigera*, *Prionopodella* and *Prothereua*.

Lith.: mainly Henicopidae, also Lithobiidae; mainly *Paralamyctes* and *Henicops*.

Sco.: mainly Scolopendridae, also Cryptopidae; mainly *Cormocephalus* and *Cryptops*, with the exclusive *Notiasemus*.

Geo.: mainly Geophilidae, also Mecistocephalidae, fewer Ballophilidae, Oryidae and Schendylidae; mainly *Mecistocephalus* and *Ribautia*; with the exclusive *Australiophilus*, *Australoschendyla* and *Geomerinus*.

Also *Craterostigmus* (Craterostigmomorpha).

New Zealand

New Zealand and minor surrounding islands.

Scu.: Scutigeridae only.

Lith.: Henicopidae only; mainly *Paralamyctes*.

Sco.: Cryptopidae and Scolopendridae; mainly *Cryptops*.

Geo.: mainly Geophilidae, also Ballophilidae; mainly *Maoriella*, *Steneurytion* and *Zelanophilus*.

Also *Craterostigmus* (Craterostigmomorpha).

Pacific islands

Oceanic islands in the Pacific.

Scu.: mainly Scutigeridae, also Pselliodidae; with the exclusive *Diplacrophor* and *Phanothereua*.

Lith.: Henicopidae and Lithobiidae; mainly *Lamyctes*; with the exclusive *Pleotarsobius*.

Sco.: Cryptopidae, Scolopendridae and Scolopocryptopidae; mainly *Cormocephalus*, *Cryptops* and *Otostigmus*.

Geo.: mainly Mecistocephalidae, also Ballophilidae, Geophilidae, Gonibregmatidae, Oryidae and Schendylidae; mainly *Mecistocephalus*.

Patterns of distribution of genera

Many genera are monotypic and known so far from very few localities in limited areas, this circumstance hindering comparative analysis. The most frequent patterns emerging from comparisons of the known distribution of all other genera are highlighted in the following.

Within the temperate regions of the boreal hemisphere, only a few genera are naturally widespread in large parts of both North America and Eurasia (*Arctogeophilus*, *Strigamia*). Many genera, most of them being lithobiomorphs, are almost exclusive to the temperate regions of North America only (*Arenophilus*, *Buethobius, Ethopolys*, *Garibius*, *Guambius*, *Nampabius*, *Neolithobius*, *Oabius*, *Paitobius*, *Sonibius*, *Tidabius, Typhlobius*, *Zygethobius*, *Zygethopolys*). Some other genera are distributed in both North America and eastern Asia (*Arrup, Bothropolys*, *Cheiletha*, *Escaryus*, *Paobius*), a few also reaching south-eastern Asia (*Bothropolys*, *Queenslandophilus*).

Several genera are distributed between the south-western part of North America and central Mexico (*Chomatobius, Cruzobius, Garrina, Gosipina, Labrobius, Parunguis, Watophilus*). Many genera are limited, or almost limited, to the south-western part of North America, namely California and surrounding northern and eastern areas (*Gosibius*, *Nothembius*, *Pseudolithobius*), many others are limited to Mexico, sometimes extending southwards to Central America (*Aztekophilus, Chomatophilus, Delobius, Geoballus, Neogeophilus, Pycnona, Sotimpius, Tropobius*, *Vulcanbius*).

Many genera, especially in Geophilomorpha, are distributed around the Mediterranean basin. Some of them are widespread in the whole Mediterranean region (*Eupolybothrus*, *Gnathoribautia, Himantarium*), sometimes extending to Macaronesia (*Dignathodon*, *Henia*, *Schendyla*). Some genera are limited to the central-western part of the Mediterranean basin (*Himantariella*, *Tachythereua*), other genera are limited to the central-eastern part (*Clinopodes*, *Harpolithobius*, *Thracophilus*), sometimes extending to central Asia (*Bothriogaster*).

A few genera are apparently limited to a narrow region in central Asia, between the Turanic lowland and the Tian Shan (*Krateraspis, Taschkentia*).

Some genera are widespread in the tropical parts of all continents (*Ballophilus*, *Mecistocephalus*, *Orphnaeus*, *Otostigmus*, *Rhysida*), whereas others are limited to the tropical regions of some continents only: America and Africa

(*Ctenophilus*, *Schizonampa*); Africa, southern Asia and Oceania (*Asanada*, *Ethmostigmus*, *Thereuonema*); southern Asia and some surrounding regions (*Australobius*, *Eucratonyx*, *Gonibregmatus*, *Himantosoma*, *Tygarrup*).

Many genera are distributed in most of tropical America, from Central America and the Antilles to the northern part of South America (*Diplethmus*, *Newportia, Notiphilides, Taeniolinum*). A few are limited to Central America and the Antilles (*Piestophilus*, *Polycricus*, *Telocricus*), other genera are limited to the subequatorial and tropical South America (*Hyphydrophilus*, *Macronicophilus*).

A few genera are limited to the tropical parts of Africa (*Alloschizotaenia*, *Ctenorya*, *Schizotaenia*).

Within the continental lands extending to the temperate regions of the southern hemisphere, different genera are distributed in more than one subcontinent, mainly the southernmost parts of both America and Africa (*Aphilodon*, *Geoperingueyia*, *Plateurytion*) or the most southern parts of America and the Australian region (*Anopsobius*, *Pachymerinus*). Others are restricted to southernmost America (*Analamyctes, Apogeophilus, Chilenophilus, Dinogeophilus, Pandineum*, *Schendyloides*, *Schizonium*) or the southernmost Africa (*Achilophilus*, *Polygonarea*).

Some genera are distributed in both Australia and New Caledonia, sometimes including other surrounding islands (*Dichelobius*, *Henicops*, *Parascutigera*), others are limited to Australia (*Australoschendyla*, *Sepedonophilus*) or to the islands of New Caledonia (*Campylostigmus*, *Easonobius*). Many genera are distributed in both Australia and New Zealand, sometimes extending to a few other islands nearby (*Craterostigmus*, *Maoriella*, *Steneurytion*, *Tasmanophilus*, *Zelanophilus*).

Major genera, i.e. those which are richest in species number and with the most extended geographical range (*Cormocephalus, Cryptops, Geophilus, Lamyctes, Lithobius* and *Scolopendra*), are very diverse in distribution, hindering the recognition of obvious patterns. This is sometimes due to the current composite circumscription of these genera, which are possibly polyphyletic or paraphyletic, or to distributions altered by extensive introductions through human activity, or to still unrevealed misclassification of species. Other more obviously circumscribed genera are largely widespread due to their peculiar capacity for long-range dispersal, mainly along the coasts (*Pachymerium*, *Tuoba*).

Other minor, well established genera show unusual, somehow puzzling, ranges. Among these are *Dicellophilus* (disjunct narrow areas in the southwestern part of North America, central Europe and Japan), *Marsikomerus* (a restricted area in the internal part of North America, as well as the Hawaii

Islands), *Mesocanthus* (Indian peninsula and northern Africa), *Polyporogaster* (central regions of Asia and northern Africa), and *Theatops* (southern part of North America and southern Europe). Peculiar is also the Gondwanan-like occurrence of *Paralamyctes* (South America, southernmost Africa, Madagascar, India, Australia and New Zealand).

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Appendix I

Number of species of Chilopoda for each geographical unit recognised in this analysis; units are listed according to the alphabetic order within each continent.

Americas: Alaska (22) – Argentina (61) – Bahamas (8) – Belize (3) – Bermuda (4) – Bolivia (10) – Brazil (146) – Canada (31) – Cayman Islands (1) – Chile (74) – Colombia (28) – Costa Rica (16) – Cuba (21) – Dominican Republic (2) – Ecuador (25) – El Salvador (7) – Falkland Islands (1) – French Guiana (5) – Guatemala (34) – Guyana (19) – Haiti (16) – Honduras (14) – Jamaica (6) – Lesser Antilles (38) – Mexico (159) – Nicaragua (7) – Panama (20) – Paraguay (14) – Peru (73) – Puerto Rico (9) – Suriname (3) – Uruguay (8) – U.S.A. excl. Alaska and Hawaii (589) – Venezuela (69)

Europe: Albania (46) – Andorra (1) – Austria (64) – Azores (13) – Belarus (6) – Belgium (31) – Bosnia/Herzegovina (75) – Bulgaria (90) – Croatia (78) – Czech Republic (54) – Denmark (30) – Estonia (0) – Farøe Islands (5) – Finland (22) – France (124) – Germany (63) – Greece (104) – Greenland (2) – Hungary (49) – Iceland (7) – Ireland (25) – Italy (159) – Latvia (14) – Liechtenstein (16) – Lithuania (4) – Luxembourg (30) – Macedonia (33) – Malta (17) – Moldova (21) – Monaco (23) – Netherlands (40) – Norway (24) – Poland (56) – Portugal excl. Azores and Madeira (33) – Romania (102) – [European] Russia (42) – Serbia/Montenegro (44) – Slovakia (56) – Slovenia (78) – Spain excl. Canary Islands (119) – Sweden (30) – Switzerland (56) – Ukraine (59) – United Kingdom (46)

Asia: Afghanistan (11) – Andaman and Nicobar Islands (6) – Bahrain (0) – Bangladesh (1) – Bhutan (4) – Brunei (0) – Cambodia (15) – China (86) – Cyprus (17) – India excl. Andaman and Nicobar Islands (119) – Indonesia (100) – Iran (27) – Iraq (11) – Israel (22) – Japan (136) – Jordan (13) – Kazakhstan (20) – Kuwait (1) – Kyrgyzstan (17) – Laos (16) – Lebanon (11) – Malaysia (44) – Maldives (4) – Mongolia (10) – Myanmar (28) – Nepal (26) – North Korea (19) – Oman (3) – Pakistan (5) – Palestine (11) – Philippines (29) – Qatar (1) – Réunion (2) – [Asiatic] Russia (67) – Saudi Arabia (7) – Seychelles (17) – Singapore (7) – South Korea (14) – Southern Caucasian Republics (45) – Sri Lanka (15) – Syria (6) – Taiwan (53) – Tajikistan (5) – Thailand (15) – Turkey (115) – Turkmenistan (10) – United Arab Emirates (2) – Uzbekistan (14) – Vietnam (39) – Yemen (15)

Africa: Algeria (35) – Angola (25) – Ascension Island (2) – Benin (6) – Botswana (6) – Burkina Faso (0) – Burundi (0) – Cameroon (16) – Canary Islands (32) – Cape Verde (5) – Central African Republic (0) – Chad (3) – Comoros (1) –

Congo (1) – Democratic Republic of the Congo (46) – Djibouti (0) – Egypt (8) – Equatorial Guinea (4) – Eritrea (6) – Ethiopia (10) – Gabon (9) – Gambia (0) – Ghana (1) – Guinea (10) – Guinea–Bissau (0) – Ivory Coast (11) – Kenya (16) – Lesotho (8) – Liberia (6) – Libya (11) – Madagascar (53) – Madeira (21) – Malawi (6) – Mali (0) – Mauritania (0) – Mauritius (18) – Morocco (26) – Mozambique (16) – Namibia (15) – Niger (0) – Nigeria (4) – Rwanda (2) – São Tomé and Principe (1) – Senegal (4) – Sierra Leone (2) – Somalia (15) – South Africa (128) – Sudan (10) – Tanzania (33) – Togo (6) – St. Helena (6) – Swaziland (4) – Tristan da Cunha (2) – Tunisia (19) – Uganda (10) – Western Sahara (0) – Zambia (7) – Zimbabwe (28)

Oceania: Australia (138) – Clipperton Island (2) – Cook Islands (1) – Federated States of Micronesia (7) – Fiji (20) – French Polynesia (12) – Guam (2) – Hawaii Islands (18) – Marshall Islands (3) – Nauru (0) – New Caledonia (13) – New Zealand (40) – Northern Mariana Islands (3) – Palau (4) – Palmyra Atoll (1) – Papua New Guinea (36) – Samoa (3) – Solomon Islands (20) – Tonga (1) – Tuvalu (2) – Vanuatu (4)

Appendix II

Alphabetic list of the genera of Chilopoda cited in this paper; abbreviations for orders and families as in the main text (Results and Discussion).

Acanthogeophilus Minelli, 1982 (Geo.5) – *Achilophilus* Attems, 1926 (Geo.5) – *Afrotaenia* Chamberlin, 1951 (Geo.2) – *Agathothus* Bollman, 1893 (Geo.8) – *Akymnopellis* Shelley, 2008 (Sco.4) – *Alloschizotaenia* Brölemann, 1909 (Geo.5) – *Allothereua* Verhoeff, 1905 (Scu.2) – *Analamyctes* Chamberlin, 1955 (Lith.1) – *Anarrup* Chamberlin, 1912 (Geo.10) – *Anopsobiella* Attems, 1938 (Lith.1) – *Anopsobius* Silvestri, 1899 (Lith.1) – *Aphilodon* Silvestri, 1898 (Geo.1) – *Apogeophilus* Silvestri, 1905 (Geo.5) – *Araucania* Chamberlin, 1955 (Geo.8) – *Arctogeophilus* Attems, 1909 (Geo.5) – *Arebius* Chamberlin, 1916 (Lith.2) – *Arenophilus* Chamberlin, 1912 (Geo.5) – *Arrup* Chamberlin, 1912 (Geo.10) – *Asanada* Meinert, 1886 (Sco.4) – *Asanadopsis* Würmli, 1972 (Sco.4) – *Aspidopleres* Porat, 1893 (Geo.12) – *Australiophilus* Verhoeff, 1925 (Geo.5) – *Australobius* Chamberlin, 1920 (Lith.2) – *Australoschendyla* Jones, 1996 (Geo.13) – *Aztekophilus* Verhoeff, 1934 (Geo.5) – *Ballonema* Verhoeff, 1904 (Scu.2) – *Ballonemella* Verhoeff, 1944 (Scu.2) – *Ballophilus* Cook, 1896 (Geo.2) – *Bimindyla* Chamberlin, 1952 (Geo.13) – *Bothriogaster* Selivanov, 1879 (Geo.7) – *Bothropolys* Wood, 1862 (Lith.2) – *Brasiloscutigera* Bücherl, 1939 (Scu.2) – *Buethobius* Chamberlin, 1911 (Lith.1) – *Campylostigmus* Ribaut, 1923 (Sco.4) – *Catanopsobius* Silvestri, 1909 (Lith.1) – *Cephalodolichus* Verhoeff, 1938 (Geo.5) – *Cerethmus* Chamberlin, 1941 (Geo.2) – *Chamberlinia* Machado, 1951 (Geo.12) – *Cheiletha* Chamberlin, 1946 (Geo.5) – *Chilenophilus* Attems, 1909 (Geo.5) – *Chomatobius* Humbert & Saussurre, 1870 (Geo.7) – *Chomatophilus* Pocock, 1896 (Geo.5) – *Clavophilus* Chamberlin, 1950 (Geo.2) – *Clinopodes* Koch, 1847 (Geo.5) – *Condylona* Chamberlin, 1941 (Geo.5) – *Cormocephalus* Newport, 1844 (Sco.4) – *Craterostigmus* Pocock, 1902 (Cra.) – *Cruzobius* Chamberlin, 1942 (Lith.2) – *Cryptops* Leach, 1815 (Sco.1) – *Ctenophilus* Cook, 1896 (Geo.13) – *Ctenorya* Cook, 1896 (Geo.12) – *Dakrobius* Zalesskaja, 1975 (Lith.2) – *Damothus* Chamberlin, 1960 (Geo.5) – *Delobius* Chamberlin, 1915 (Lith.2) – *Dicellophilus* Cook, 1896 (Geo.10) – *Dichelobius* Attems, 1911 (Lith.1) – *Dignathodon* Meinert, 1870 (Geo.3) – *Dinogeophilus* Silvestri, 1909 (Geo.5) – *Diphtherogaster* Attems, 1909 (Geo.12) – *Diplacrophor* Chamberlin, 1920 (Scu.2) – *Diplethmus* Cook, 1899 (Geo.2) – *Disargus* Cook, 1896 (Geo.6) – *Dschangelophilus* Verhoeff, 1937 (Geo.5) – *Dysmesus* Chamberlin, 1944 (Geo.5) – *Easonobius* Edgecombe, 2003 (Lith.1) – *Ectonocryptoides* Shelley & Mercurio, 2005 (Sco.5) – *Ectonocryptops* Crabill, 1977 (Sco.5) – *Edentistoma* Tömös-

váry, 1882 (Sco.4) – *Endoptelus* Chamberlin, 1939 (Geo.12) – *Eriphantes* Crabill, 1970 (Geo.4) – *Erithophilus* Cook, 1899 (Geo.5) – *Escaryus* Cook & Collins, 1891 (Geo.13) – *Ethmostigmus* Pocock, 1898 (Sco.4) – *Ethopolys* Chamberlin, 1912 (Lith.2) – *Eucratonyx* Pocock, 1898 (Geo.5) – *Eulithobius* Stuxberg, 1875 (Lith.2) – *Eupolybothrus* Verhoeff, 1907 (Lith.2) – *Falcaryus* Shinohara, 1970 (Geo.13) – *Garibius* Chamberlin, 1913 (Lith.2) – *Garrina* Chamberlin, 1915 (Geo.5) – *Garriscaphus* Chamberlin, 1941 (Geo.7) – *Geoballus* Crabill, 1969 (Geo.7) – *Geomerinus* Brölemann, 1912 (Geo.5) – *Geoperingueyia* Attems, 1926 (Geo.5) – *Geophilus* Leach, 1814 (Geo.5) – *Geoporophilus* Silvestri, 1919 (Geo.5) – *Gnathoribautia* Brölemann, 1909 (Geo.5) – *Gonibregmatus* Newport, 1843 (Geo.6) – *Gosendyla* Chamberlin, 1960 (Geo.13) – *Gosibius* Chamberlin, 1912 (Lith.2) – *Gosipina* Chamberlin, 1940 (Geo.5) – *Guambius* Chamberlin, 1912 (Lith.2) – *Haploschendyla* Verhoeff, 1900 (Geo.13) – *Harpacticellus* Verhoeff, 1941 (Geo.5) – *Harpolithobius* Verhoeff, 1904 (Lith.2) – *Hedinobius* Verhoeff, 1934 (Lith.1) – *Henia* Koch, 1847 (Geo.3) – *Henicops* Newport, 1845 (Lith.1) – *Heniorya* Cook, 1846 (Geo.12) – *Himantariella* Chalande & Ribaut, 1909 (Geo.7) – *Himantarium* Koch, 1847 (Geo.7) – *Himantosoma* Pocock, 1891 (Geo.6) – *Hovanyx* Lawrence, 1960 (Geo.5) – *Hyphydrophilus* Pereira, Minelli & Barbieri, 1994 (Geo.5) – *Ityphilus* Cook, 1899 (Geo.2) – *Javaenia* Chamberlin, 1944 (Geo.6) – *Kartops* Archey, 1923 (Sco.5) – *Koinethmus* Chamberlin, 1958 (Geo.2) – *Krateraspis* Lignau, 1929 (Geo.10) – *Labrobius* Chamberlin, 1915 (Lith.2) – *Lamotteophilus* Demange, 1963 (Geo.12) – *Lamyctes* Meinert, 1868 (Lith.1) – *Lamyctopristus* Attems, 1928 (Lith.1) – *Leptodampus* Chamberlin, 1938 (Geo.5) – *Leptoschendyla* Attems, 1953 (Geo.13) – *Leucolinum* Chamberlin, 1945 (Geo.2) – *Lithobius* Leach, 1814 (Lith.2) – *Macronicophilus* Silvestri, 1909 (Geo.9) – *Madagassophora* Verhoeff, 1936 (Scu.3) – *Madageophilus* Lawrence, 1960 (Geo.5) – *Malaccolabis* Verhoeff, 1937 (Sco.4) – *Maoriella* Attems, 1903 (Geo.5) – *Marsikomerus* Attems, 1938 (Geo.13) – *Mecistaucheenus* Brölemann, 1907 (Geo.1) – *Mecistocephalus* Newport, 1843 (Geo.10) – *Mecophilus* Silvestri, 1909 (Geo.1) – *Mesocanthus* Meinert, 1870 (Geo.7) – *Metaxythus* Crabill, 1968 (Geo.12) – *Nampabius* Chamberlin, 1913 (Lith.2) – *Nannophilus* Cook, 1896 (Geo.13) – *Neogeophilus* Silvestri, 1918 (Geo.11) – *Neolithobius* Stuxberg, 1875 (Lith.2) – *Newportia* Gervais, 1847 (Sco.5) – *Nothembius* Chamberlin, 1916 (Lith.2) – *Nothobius* Cook, 1899 (Geo.7) – *Notiasemus* Koch, 1945 (Sco.4) – *Notiphilides* Latzel, 1880 (Geo.12) – *Nyctunguis* Chamberlin, 1914 (Geo.13) – *Oabius* Chamberlin, 1913 (Lith.2) – *Orphnaeus* Meinert, 1870 (Geo.12) – *Orygmadyla* Hoffman & Pereira, 1997 (Geo.13) – *Otostigmus* Porat, 1896 (Sco.4) – *Pachymerinus* Silvestri, 1905 (Geo.5) – *Pachymerium* Koch, 1847 (Geo.5) – *Paitobius* Chamberlin, 1912

(Lith.2) – *Pandineum* Chamberlin, 1955 (Geo.5) – *Paobius* Chamberlin, 1913 (Lith.2) – *Paralamyctes* Pocock, 1901 (Lith.1) – *Parascutigera* Verhoeff, 1904 (Scu.2) – *Partygarrupius* Verhoeff, 1939 (Geo.10) – *Parunguis* Chamberlin, 1941 (Geo.13) – *Pectiniunguis* Bollman, 1899 (Geo.13) – *Peruphilus* Chamberlin, 1944 (Geo.5) – *Phanothereua* Chamberlin, 1958 (Scu.2) – *Piestophilus* Cook, 1896 (Geo.5) – *Pilbarascutigera* Edgecombe & Barrow, 2007 (Scu.2) – *Plateurytion* Attems, 1909 (Geo.5) – *Pleotarsobius* Attems, 1909 (Lith.1) – *Pleurolithobius* Verhoeff, 1899 (Lith.2) – *Plutonium* Cavanna, 1881 (Sco.1) – *Poaphilus* Chamberlin, 1912 (Geo.5) – *Podothereua* Verhoeff, 1905 (Scu.2) – *Polycricus* Saussure & Humbert, 1872 (Geo.5) – *Polygonarea* Attems, 1909 (Geo.5) – *Polyporogaster* Verhoeff, 1899 (Geo.7) – *Porethus* Chamberlin, 1952 (Geo.5) – *Portoricellus* Chamberlin, 1950 (Geo.5) – *Portoricona* Chamberlin, 1950 (Geo.5) – *Prionopodella* Verhoeff, 1925 (Scu.2) – *Proschizotaenia* Silvestri, 1907 (Geo.5) – *Proterotaiwanella* Bonato, Foddai & Minelli, 2002 (Geo.10) – *Prothereua* Verhoeff, 1925 (Scu.2) – *Pseudolithobius* Stuxberg, 1875 (Lith.2) – *Psiloscolopendra* Kraepelin, 1903 (Sco.4) – *Pterygotergum* Verhoeff, 1933 (Lith.2) – *Purcellinus* Attems, 1926 (Geo.5) – *Pycnona* Chamberlin, 1943 (Geo.5) – *Queenslandophilus* Verhoeff, 1925 (Geo.5) – *Rhysida* Wood, 1862 (Sco.4) – *Ribautia* Brölemann, 1909 (Geo.5) – *Schendyla* Bergsøe & Meinert, 1866 (Geo.13) – *Schendyloides* Attems, 1897 (Geo.5) – *Schendylops* Cook, 1899 (Geo.13) – *Schizonampa* Chamberlin, 1914 (Geo.5) – *Schizonium* Chamberlin, 1955 (Geo.5) – *Schizotaenia* Cook, 1896 (Geo.5) – *Schizotergitius* Verhoeff, 1930 (Lith.2) – *Scolopendra* Linnaeus, 1758 (Sco.4) – *Scolopendropsis* Brandt, 1841 (Sco.4) – *Scolopocryptops* Newport, 1844 (Sco.5) – *Scutigera* Lamarck, 1801 (Scu.2) – *Sepedonophilus* Attems, 1909 (Geo.5) – *Shikokuobius* Shinohara, 1982 (Lith.1) – *Sogophagus* Chamberlin, 1912 (Geo.6) – *Sonibius* Chamberlin, 1912 (Lith.2) – *Sotimpius* Chamberlin, 1912 (Lith.2) – *Steneurytion* Attems, 1909 (Geo.5) – *Stenorya* Crabill, 1968 (Geo.12) – *Stenotaenia* Koch, 1847 (Geo.5) – *Sterropristes* Attems, 1934 (Sco.4) – *Stigmatogaster* Latzel, 1880 (Geo.7) – *Strigamia* Gray, 1843 (Geo.8) – *Synthophilus* Chamberlin, 1946 (Geo.5) – *Tachythereua* Verhoeff, 1905 (Scu.2) – *Taeniolinum* Pocock, 1894 (Geo.2) – *Taiyubius* Chamberlin, 1912 (Lith.2) – *Takashimaia* Miyosi, 1955 (Geo.10) – *Taschkentia* Verhoeff, 1930 (Geo.5) – *Tasmanophilus* Chamberlin, 1920 (Geo.5) – *Telocricus* Chamberlin, 1915 (Geo.5) – *Thalkethops* Crabill, 1960 (Sco.5) – *Theatops* Newport, 1844 (Sco.1) – *Thereulla* Chamberlin, 1955 (Scu.2) – *Thereuonema* Verhoeff, 1904 (Scu.2) – *Thereuopoda* Verhoeff, 1904 (Scu.2) – *Thereuopodina* Verhoeff, 1905 (Scu.2) – *Thereuoquima* Bücherl, 1949 (Scu.2) – *Thindyla* Chamberlin, 1955 (Geo.13) – *Thracophilus* Verhoeff, 1926 (Geo.7) – *Tidabius* Chamberlin, 1913 (Lith.2) – *Tonkinodentus* Schileyko, 1992 (Sco.1) – *Trematorya* Bröle-

MANN, 1909 (Geo.12) – *Tropobius* CHAMBERLIN, 1943 (Lith.2) – *Tuoba* CHAMBERLIN, 1920 (Geo.5) – *Tygarrup* CHAMBERLIN, 1914 (Geo.10) – *Typhlobius* CHAMBERLIN, 1922 (Lith.2) – *Validifemur* MA, SONG & ZHU, 2007 (Lith.2) – *Vulcanbius* CHAMBERLIN, 1943 (Lith.2) – *Watophilus* CHAMBERLIN, 1912 (Geo.5) – *Zantaenia* CHAMBERLIN, 1960 (Geo.8) – *Zelanophilus* CHAMBERLIN, 1920 (Geo.5) – *Zygethobius* CHAMBERLIN, 1903 (Lith.1) – *Zygethopolys* CHAMBERLIN, 1903 (Lith.2)