

## On centipedes (Chilopoda) of Albania, 2

### О губоногих (Chilopoda) Албании, 2

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КЛЮЧЕВЫЕ СЛОВА: Chilopoda, фаунистика, таксономия, Албания.

**ABSTRACT:** Twenty seven centipede species collected in Albania are listed, six of them being new to the Albanian fauna. A new synonym is proposed, *Eupolybothrus caesar valonensis* (Verhoeff, 1905) = *E. caesar caesar* (Verhoeff, 1899), syn.n., as well as two new combinations, *Lithobius tenebrosus calcivagus* (Verhoeff, 1900) and *L. tenebrosus sulcatipes* (Loksa, 1947), both comb.n. A complete checklist (58 species or subspecies) and a brief zoogeographical analysis of the centipede fauna of Albania are given.

**РЕЗЮМЕ:** Приведены данные по собранным в Албании 27 видам губоногих, среди которых шесть — новые для албанской фауны. Один подвид косянок, *Eupolybothrus caesar valonensis* (Verhoeff, 1905), оказался синонимом *E. caesar caesar* (Verhoeff, 1899), syn.n., а другие два, *Lithobius tenebrosus calcivagus* (Verhoeff, 1900) comb.n. и *L. tenebrosus sulcatipes* (Loksa, 1947), comb.n., — новые комбинации. Представлены полный контрольный список (58 видов и подвидов) и краткий зоогеографический анализ албанских хилопод.

### Introduction

Albania is a country lying in the western part of the Balkan Peninsula and covering a territory of 28,748 sq. km. Most of Albania supports high mountains and hills and only a minor proportion is taken up by land suitable for agriculture. The altitude averages 708 m a.s.l. The climate is typical Mediterranean along the coast and in the lowlands; modified Mediterranean in the north and at low altitudes in the mountains, and modified continental in the far north as well as high in the mountains. The annual precipitation rate averages 1,930 mm per sq. m. In the lowlands and at low altitudes in the mountains, vegetation is dominated by xerotherm trees and shrubs. The middle belt of the mountains is covered by beech and deciduous oak forests. The orophyte treeless zone begins at about 1,900 m altitude. Much of the native vegetation is modified by logging, farming and other human activities.

This is my second work dedicated to the centipede fauna of Albania. The previous one [Stoev, 1997a] summarised mainly the results of examination of the centipedes taken both during my first and second trips to Albania and those collected by Petar Beron and Boyan Petrov in the framework of the Bulgarian Speleological Expedition to northern Albania.

The current paper largely puts on record the material taken during the Pensoft Publishers Expedition to Albania in 1995, organised by Sergei Golovatch, Lyubomir Penev, Boyan Petrov and myself. In addition, the geophilomorphs from the former Albanian collections of P. Beron and B. Petrov were examined and incorporated here, as well as a small material given to me for treatment by both Teodora Ivanova and Alexei Zhilov. For a better understanding of the taxonomic status of a few forms, a number of specimens referred to by Stoev [1997ab] were re-examined.

Twenty-seven species were identified, six of them being new to the centipede fauna of Albania: *Bothriogaster signata* (Kessler, 1874), *Strigamia transsilvanica* (Verhoeff, 1928), *Pachymerium ferrugineum* (C.L. Koch, 1835), *Eupolybothrus werneri* (Attems, 1902), *Lithobius lapidicola* Meinert, 1872, and *L. microps* Meinert, 1868. A new synonym and two new combinations are here proposed for the first time: *Polybothrus caesar valonensis* Verhoeff, 1905 = *Eupolybothrus caesar caesar* (Verhoeff, 1899), syn.n.; *Lithobius tenebrosus calcivagus* (Verhoeff, 1900) and *Lithobius tenebrosus sulcatipes* (Loksa, 1947), both comb.n.

A preliminary zoogeographical analysis of the centipede fauna of Albania is provided and an annotated checklist compiled.

### Material and Methods

Most of the material has been hand-collected while Barber pitfall traps and Winkler apparatuses were only used occasionally. The centipedes were fixed with 70% ethanol. Species determinations were made using a MBC-10 stereoscope, Russian make, usually at 7x or 4x magnification. Damaged and juvenile specimens which could not be identi-

fied reliably were excluded from the paper. Many of the distribution patterns (= chorotypes) of the species have been defined according to Vigna Taglianti et al. [1999]. All material is now preserved in the Department of Non-Insect Invertebrates of the National Museum of Natural History in Sofia.

## Species accounts

### GEOPHILOMORPHA

#### *Himantarium gabrielis* (Linnaeus, 1767)

Albania: Terpan, Karbunara pr. Lusmja, Grotta Stera e Made (Dukati) [Manfredi, 1945].

MATERIAL: 1 ex., between Hotolisht & Librazhd, 300 m alt., shrub, gravel, under stones & bark, 07.05.1996, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ex., Librazhd Distr., above Prenjas, 750 m alt., shrubs on slope, 07.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ♂, Tirana, Botanical Gardens, under stones, 08.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ♂, Llogorase Pass, alt. 1,025 m, under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 4 ex. (one 215 mm long with 142 pair of legs), Gjirokaster, castle, under stones, 06.05.1994, P. Stoev leg.

REMARKS: This is the second record of this widespread Mediterranean species from Albania since Manfredi [1945]. *H. gabrielis* is a centipede quite common in Albania, known from sea-level up to 1,025 m a.s.l. in the mountains.

CHOROTYPE: Mediterranean.

#### *Bothriogaster signata* (Kessler, 1874)

MATERIAL: 1 adult (length ca. 70 mm), Vlorë, under stones, 1.05.1994, P. Stoev & D. Zaprianova leg.; 3 ex.: (length 83 mm, 98 pairs of legs; 95 mm, 102 pairs of legs; and 103 mm, 104 pairs of legs), Ionian coast, Dhërmi Village, under stones, 02.05.1994, P. Stoev leg.; 2 ex. (length 80 mm, 98 pairs of legs; and 96 mm, 105 pairs of legs), Ionian coast, Himara Village, under stones, 03.05.1994, P. Stoev leg.

REMARKS: Although *B. signata* is a fairly common Turano-Mediterranean species, it has never been reported from Albania. A species formally new to the Albanian centipede fauna.

CHOROTYPE: Turano-Mediterranean.

#### *Dignathodon microcephalus* (Lucas, 1846)

Albania: Scutari (Shkodër) [Attems, 1929]; Lago di Scutari [Lake Shkodër], Siroka [Manfredi, 1932].

MATERIAL: 2 ex. (one 32 mm long, 69 pairs of legs), Vlorë Distr., near Dukati, 450 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ex., Saranda Distr., Lukove Village, under stones, 5.05.1994, P. Stoev & D. Zaprianova leg.; 1 ex., Gjirokaster, castle, under stones, 6.05.1994, P. Stoev leg.

REMARKS: Both Attems [1929] and Manfredi [1932] reported *D. microcephalus* from several localities in northern Albania. Here it has been recorded in the southern regions of the country as well. This is a widespread Mediterranean species.

CHOROTYPE: Mediterranean.

#### *Henia devia* C. L. Koch, 1847

Albania: Valona (= Vlorë) (sub *H. minor*) [Attems, 1903].

MATERIAL: 1 ex. (length 74 mm, 140 pairs of legs), Llogorase Pass, 1,025 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ex. (length 96 mm, 138 pairs of legs), Ionian coast, Dhërmi Village, under stones, 02.05.1994, P. Stoev leg.; 1 ex. (length 63 mm, 124 pairs of legs), Ionian coast, Qeparo Village, under stones, 6.05.1994, P. Stoev leg.

REMARKS: This species had been considered as endemic to Greece [Kannelis, 1959] until Minelli [1982], who proposed its synonymy with *H. minor*. The northern range limit of *H. devia* seems to lie in this country, near Vlorë.

CHOROTYPE: South Balkan.

#### *Henia illyrica* (Meinert, 1870)

Albania: Insel in Presba-See [Verhoeff, 1934] (sub *Henia illyrica oblonga* Verhoeff, 1934); Oroshi, Fusha Rudnica, Vermosha, Kula Lums [Attems, 1929]; Terpan (Berati) [Manfredi, 1945].

MATERIAL: 2 ex. (length 25 mm, 85 pairs of legs; and 31 mm, 85 pairs of legs), Shkodër Distr., Boga Village, 1,000–1,100 m alt., 5–9.06.1993, P. Beron & B. Petrov leg.; 1 ex. (length 30 mm, 82 pairs of legs), Shkodër Distr., Kozhnja Village, camp, 1,600 m alt., 16.07.1995, T. Ivanova leg.; 4 adult ♀♀, Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 ♂♂, 1 ♀, 13 km N of Erseka, near road, leaf litter, 12.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

REMARKS: Verhoeff [1934], Attems [1929] and Manfredi [1945] reported *H. illyrica* from various localities in Albania. *H. illyrica oblonga* Verhoeff, 1934 has been described from Ljuboten in Kosovo as well as from a small island in Lake Prespa. Its taxonomic status has been considered by Minelli [1982], who suggested its being a synonym of the nominate form.

CHOROTYPE: South European.

#### *Strigamia transsilvanica* (Verhoeff, 1928)

MATERIAL: 1 ex. (length 27 mm, 45 pairs of legs), Shkodër Distr., Boga Village, 1,000–1,100 m alt., 5–9.06.1993, P. Beron & B. Petrov leg.

REMARKS: Although this species could have easily been expected as present in the country, this is the first reliable record of *S. transsilvanica* in Albania. This is a taxon formally new to the Albanian centipede fauna.

CHOROTYPE: Balkan.

#### *Clinopodes flavidus* C.L. Koch, 1847

Albania: Munela im Merditengebiet (sub *C. flavidus escherichii*) [Attems, 1929].

MATERIAL: 1 ex., Shkodër Distr., Boga Village, soil trap, 06.1993, P. Beron & B. Petrov leg.; 2 ex., Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m a.s.l., 24.11.2000, A. Zhalov leg.; 8 ex. (one 66 mm long, 67 pairs of legs), Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ex., Gjirokaster, castle, under stones, 6.05.1994, P. Stoev leg.

REMARKS: Attems [1929] reported this species from Albania sub *C. flavidus escherichii*, a subspecies currently considered as a synonym of *flavidus flavidus*. Another poorly-known species of *Clinopodes* is *C. skopljensis* (Verhoeff, 1938), described from near Skopje, Macedonia and erroneously included in the list of Albanian centipedes [Stoev, 1997a].

CHOROTYPE: Turano-Euro-Mediterranean.

#### *Clinopodes polytrichus* (Attems, 1903)

Albania: Lusmja (Berati) [Manfredi, 1945]

MATERIAL: 1 ex., Llogorase Pass, 1,025 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ex., Dhërmi Village, 100 m alt., under stones, 2.05.1994, P. Stoev leg.

REMARKS: Although both *C. flavidus* and *C. polytrichus* are represented in the Albanian fauna, most of the specimens at hand prove to belong to *C. flavidus*. I am still confused in determining these two sibling species, especially when subadult and/or damaged material is concerned.

CHOROTYPE: Balkan.

*Clinopodes trebevicensis* (Verhoeff, 1898)

Albania: Vermosha, Oroshi, Zljeb, Bastrik, Zebja im Merditengebiet, Cviljen [Attems, 1929].

MATERIAL: 1 ex. (length 31 mm, 55 pairs of legs), Shkodër Distr., Boga Village, 1,800–1,900 m alt., soil trap, 20–23.05.1993, P. Beron & B. Petrov leg.

REMARKS: This species has long been known from the country, but the above is the first recent record since that of Attems [1929].

CHOROTYPE: Balkan.

*Pachymerium ferrugineum* (C.L. Koch, 1835)

MATERIAL: 1 ex. (length 25 mm, 51 pairs of legs), 2 km N of Durres, under stones, 24.05.1993, P. Stoev & D. Zaprianova leg.

REMARKS: Despite the fact that *P. ferrugineum* is widespread all over the Balkans, it has never been recorded in Albania. The above specimen was collected in an open habitat, i.e. sands and stones covered with xerophytic shrubs near the Adriatic coast. As it has long been known as a littoral species, not surprisingly it has been taken at Durres close to seashore. This is another taxon new to the Albanian centipede fauna.

CHOROTYPE: West Palaearctic.

SCOLOPENDROMORPHA

*Scolopendra cingulata* Latreille, 1829

MATERIAL: 4 ex., Librazhd Distr., above Prenjas, 750 m alt., shrubs on slope, 07.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 subadult ex., between Hotolisht & Librazhd, 300 m alt., shrub, gravel, under stones & bark, 07.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 ex., Tirana, Botanical Gardens, under stones, 08.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 subadult, Petrela, 15 km E of Tirana, 350 m alt., under stones, ruins, shrub, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ex., Vlorë Distr., near Dukati Village, 450 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 ex., Llogorase Pass, 1,025 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 juv., Ionian coast, Dhërmi Village, 100 m alt., leaf litter, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 3 adult, 3 subadult ex., Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg.

REMARKS: *S. cingulata* is a widespread Mediterranean species sympatric with *S. dalmatica* in the northern regions of Albania. I have failed to find *dalmatica* in southern Albania, whereas it does occur in the Greek island of Kerkira (= Korfu) situated only 5 km off the southern Albanian coast. For previous records of *S. cingulata* in Albania see Stoev [1997a].

CHOROTYPE: Mediterranean.

*Cryptops croaticus* Verhoeff, 1931

MATERIAL: 3 ex., Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg.

REMARKS: This species has been recorded for the first time in Albania by Stoev [1997a] and is only known from the Shkodër region yet (Prokletije and Mali Tarabosh mountains).

CHOROTYPE: Southeast European.

*Cryptops hortensis* (Donovan, 1810)

MATERIAL: several specimens, Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ex., Leskoviku Distr., cave on the road Permet to Leskoviku, 5 km before Leskoviku, 500 m alt., 12.05.1995, P. Stoev & B. Petrov leg.

REMARKS: In my previous paper [Stoev, 1996], I erred in reporting *C. hortensis* from the following localities: Ionian coast, Dhërmi Village (*parisi*); Shkodër Distr., Boga, Upper Camp, 1,800–1,900 m alt. (*parisi*); Shkodër Distr., Theth, 800–900 m alt. (*rucneri*); Alpet M. e. Radohimës, 1,900–2,200 m alt. (*parisi*); M. e. Radohimës, 2,200–2,400 m alt. (*parisi*), and one mutilated specimen, probably *croaticus*. Until now, *C. hortensis* has been found in Albania from the regions of Qukesit, Pedhane [Manfredi, 1932], Boga, Dajti Mt. and Leskoviku [Stoev, 1997a, present paper]. *C. rucneri* Matic, 1967, another species closely related to *hortensis*, has been discovered in the region of Theth, northern Albania. Compared with *C. hortensis*, *C. rucneri* shows a longer 20<sup>th</sup> pair of legs, more slender and elongate forcipules, and the colour of the animal is generally reddish instead of yellow as in *hortensis*.

CHOROTYPE: Turano-Euro-Mediterranean.

*Cryptops parisi* Brölemann, 1920

MATERIAL: 3 ex., 13 km N of Erseka, near road, leaf litter, 12.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 subadult, Shkodër Distr., Boga Village, 1,008 m alt., 3–4.06.1993, P. Beron & B. Petrov leg.; several specimens, Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

REMARKS: This species is very common in Albania, also reported from various localities in Stoev [1997a].

CHOROTYPE: Central European.

LITHOBIOMORPHA

*Lithobius* (s.str.) *lapidicola* Meinert, 1872

MATERIAL: 3♂♂, Gjirokaster, castle, under stones, 6.05.1994, P. Stoev leg.; 1♂, Vlorë Distr., near Dukati, 450 m alt., leaf litter, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

REMARKS: There are some minor differences in spinulation and number of ocelli in the above specimens as compared to material described from Central Europe. There can be no doubt, however, this is one and the same species. *L. lapidicola* has been reported from Ljuboten, Kosovo by Attems [1929] and recently included in the list of Albanian centipedes by Stoev [1997a]. Yet this is the first reliable record of this taxon from the country. A species new to the Albanian centipede fauna.

CHOROTYPE: European.

*Lithobius* (s.str.) *muticus* C.L. Koch, 1847

Albania: Oroshi, Cviljen [Attems, 1929].

MATERIAL: 1♀, Shkodër Distr., Boga Village, 1,800–1,900 m alt., soil trap, 20–23.05.1993, P. Beron & B. Petrov leg.; 1 adult♂, Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg.

REMARKS: This is the first recent record of *L. muticus* in Albania since that of Attems [1929].

CHOROTYPE: Central European.

*Lithobius* (s.str.) *tenebrosus calcivagus* (Verhoeff, 1900), **comb.n.**

**MATERIAL:** 1 subadult ♂, Shkodër Distr., Boga, Upper Camp, 1,800–1,900 m alt., 20–23.06.1993, P. Beron & B. Petrov leg.; several ♂♂ and ♀♀, Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg.; 2 ♀♀, Vlorë Distr., near Dukati Village, 450 m alt., leaf litter, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ♂, 2 ♀♀, Llogorase Pass, 1,025 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

**REMARKS:** The above specimens agree well with Verhoeff's description of *Lithobius pusillus calcivagus* in having the tergal projections either absent or feeble, the fewer ocelli, no modifications of the 15<sup>th</sup> pair of legs in males, and generally a shorter body. Eason [1992] showed that *L. pusillus calcivagus* is a junior synonym of *Lithobius tenebrosus* Meinert, 1872. A number of subspecies of *tenebrosus* have already been described from Northern and Central Europe. These are *L. tenebrosus fennoscandius* Lohmander, 1948 from Scandinavia, Poland and Russia; *L. tenebrosus setiger* Kaczmarek, 1977 from the Polish Carpathians, and *L. tenebrosus sulcatipes* (Loksa, 1947), **comb.n.** from the Hungarian Carpathians. The nominate form is very widely distributed in Europe, its range covering Great Britain, Sweden, Poland, Germany, Czech Republic, Slovakia, Austria, Hungary, Switzerland, Italy, Romania, Bulgaria and the Ukraine. *L. tenebrosus fennoscandius* and *L. tenebrosus setiger* are well defined, whereas the status of *L. tenebrosus sulcatipes* requires clarification. If we follow the tradition of naming every distinctive population of *tenebrosus*, then the Southwest Balkan population, which is distinguishable by having the tergal projections 9, 11, 13 either absent or feeble, generally a lower number of ocelli, the 15<sup>th</sup> male legs without modifications or only with a trace of a dorsal sulcus, and the 15<sup>th</sup> VaF spine absent, must receive the name *L. tenebrosus calcivagus* (Verhoeff, 1900), **comb.n.**

**CHOROTYPE:** West Balkan.

*Lithobius* (s.str.) *virivatus* Sselivanoff, 1878

**MATERIAL:** 1 ♂, 4 ♀♀, Tirana, Botanical Gardens, under stones, 8.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 ♂♂, 2 ♀♀, Vlorë Distr., near Dukati Village, 450 m alt., leaf litter, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 3 ♂♂, 4 ♀♀, Lushnja Distr., Divjaka National Park, *Pinus halepensis* & *P. pinea* strand forest, leaf litter & bark, 10.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 adult ♂, Tirana Distr., Petrela, 28.11.2000, A. Zhalov leg.

**REMARKS:** Stoev [1996] was the first to record *L. virivatus* in Albania. This seems a species very common in Albania, found in open natural and urban habitats, in strand forests of *Pinus pinea* and *P. halepensis*, from sea-level up to 450 m a.s.l.

**CHOROTYPE:** Southeast European.

*Lithobius* (*Monotarsobius*) *crassipes* L. Koch, 1862

**MATERIAL:** 3 ♂♂, Korçë Distr., Tran Village, Shpella (Cave) Zebjes, 3.10.1994, P. Beron & T. Ivanova leg.

**REMARKS:** The species has already been reported from Albania by Attems [1929] and, recently, Stoev [1997a]. Although not a typical cave animal, it is regularly found in subterranean habitats.

**CHOROTYPE:** Euro-Siberian.

*Lithobius* (*Sigibius*) *microps* Meinert, 1868

**MATERIAL:** 1 ♂, Shkodër Distr., Boga Village, 1,000–1,100 m a.s.l., 5–9.06.1993, P. Beron & B. Petrov leg.; 1 ♂, 4 ♀♀, Tirana,

Botanical Gardens, under stones, 8.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; several specimens of both sexes, Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ♂, Korçë Distr., Q.e.Qarrit Pass, 1.06.1994, T. Ivanova leg.; 1 adult ♀, 13 km N of Erseka, near road, leaf litter, 12.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 ♂♂, 2 ♀♀, Lushnja Distr., Divjaka National Park, *Pinus halepensis* & *P. pinea* strand forest, leaf litter and bark, 10.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

**REMARKS:** Although *L. microps* has already been recorded in Albania, all older reports must be referred to *L. microps* Auctorum (= *L. micropodus* Matic, 1980). The above are the first reliable records of *microps* Meinert from Albania. A species new to the Albanian centipede fauna.

**CHOROTYPE:** European.

*Lithobius* (*Sigibius*) *trebinjanus* Verhoeff, 1900

Albania: Cviljen, Vermosha, Bastrik, Gyalica Lums, Zilber [Attems, 1929].

**MATERIAL:** 1 adult ♀, Shkodër Distr., Boga, Upper Camp, 1,800–1,900 m alt., 20–23.06.1993, P. Beron & B. Petrov leg.; 2 ♂♂, Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

**REMARKS:** Attems [1929] reported *L. trebinjanus* from various localities in Albania. Since the redescription by Eason [1983], *L. trebinjanus* has never been recorded again. Now, with two adult males and a female at hand, I find it to be very distinct from all other *Sigibius* subgenera, easily distinguished by its very stout prodonts, in size equal to or larger than the adjacent prosternal tooth, the male 15<sup>th</sup> tibia in dorsal aspect with a tuft of setae, the 15<sup>th</sup> DPfp spine very large and the antennae composed of 36–39 segments. The species has been reported from Albania, Bosnia, Montenegro, Bulgaria and insular Greece, but the records from both latter countries require confirmation.

**CHOROTYPE:** West Balkan.

*Harpolithobius anodus* (Latzel, 1880)

**MATERIAL:** 1 ♂, Shkodër Distr., Boga Village, 1,800–1,900 m alt., soil trap, 20–23.05.1993, P. Beron & B. Petrov leg.; 2 ♂♂, 5 ♀♀, Tirana, Botanical Gardens, under stones, 8.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 ♀♀, Vlorë Distr., near Dukati Village, 450 m alt., leaf litter, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ♂, 1 ♀, Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

**REMARKS:** This species has been reported from Albania by Attems [1929] and, recently, Stoev [1997a]. This seems a species common in the country. Another congener, *H. ljustetensis* Verhoeff, 1934, has been described from the border region between Albania and Serbia, most likely on the Serbian side, but, as it has since never been found again, its taxonomic status requires re-evaluation.

**CHOROTYPE:** South European.

*Pleuroolithobius patriarchalis* (Berlese, 1894)

**MATERIAL:** 1 juv., Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg. 2 ♂♂, 1 ♀, Tirana, Botanical Gardens, under stones, 8.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ♂, Dajti Mt., 20 km E of Tirana, 1,000 m alt., *Fagus*, *Acer* etc. forest, under stones, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 4 ♂♂, 3 ♀♀, Petrela, 15 km E of Tirana, 350 m alt., under stones, ruins, shrub, 9.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 adult ♀, Vlorë Distr., near Dukati Village,

450 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 ♂, 5 ♀♀, Lushnja Distr., Divjaka National Park, *Pinus halepensis* & *P. pinea* strand forest, leaf litter and bark, 10.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

REMARKS: *P. patriarchalis* is a centipede common in Albania. It has been found in forests of *Fagus*, *Acer* and *Pinus* as well as in open habitats ranging from sea-level up to 1,000 m a.s.l. in the mountains.

CHOROTYPE: East Mediterranean.

*Eupolybothrus (Schizopolybothrus) caesar* (Verhoeff, 1899)

*Eupolybothrus caesar valonensis* (Verhoeff, 1905), **syn.n.**

MATERIAL: 1 subadult ♂, Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg.; 1 adult ♀, Korçë Distr., Pustec (Liqena) Village, Gubilishteto Cave (Sink-hole), 6.10.1994, P. Beron & T. Ivanova leg.; 1 subadult ♂, Korçë Distr., Kamnik Village, under stones, 7.05.1994, P. Stoev leg.; 1 ♀, Tirana, Botanical Gardens, under stones, 8.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 adult ♀, 1 subadult, Ionian coast, Dharmi Village, 100 m alt., leaf litter, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

REMARKS: Based only on a male and a female from Valona (= Vlorë), Verhoeff [1905] described a new subspecies of *Polybothrus* (= *Eupolybothrus*) *caesar*, which he named *caesar valonensis*. Later, Jeekel [1967] included *valonensis* in his key to species or subspecies of the subgenus *Schizopolybothrus*. Verhoeff distinguished *valonensis* from the nominate form by a set of insignificant characters which appear to strongly vary in Lithobiidae. These are the number of antennomeres, ocelli and prosternal teeth, and the spinulation pattern of the legs. In my study on the centipedes of Albania, I have been able to examine a dozen specimens from different regions of the country, all being referable to *E. caesar caesar*. So I propose a new subjective synonym: *Eupolybothrus caesar valonensis* (Verhoeff, 1905) = *Eupolybothrus caesar caesar* (Verhoeff, 1899), **syn.n.** There are three other taxa belonging to the *caesar*-group of *Eupolybothrus*: *E. spiniger* (Latzel, 1888), *E. acherontis* (Verhoeff, 1900), and *E. acherontis wardaranus* (Verhoeff, 1937). The original description of *E. spiniger* is identical to that of *caesar* and, being an earlier available name, in case of formal synonymy, *spiniger* must be preferred over *caesar*.

CHOROTYPE: West Balkan.

*Eupolybothrus (Parapolybothrus) herzegowinensis* (Verhoeff, 1900)

MATERIAL: 1 adult ♂, 1 subadult ♂, Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg.

REMARKS: This species has already been recorded in Albania [Verhoeff, 1933] but without exact locality. Eason [1983] redescribed the lectotype, in the British Museum of Natural History, providing good illustrations of the species. This is the first reliable record of *herzegowinensis* in Albania.

CHOROTYPE: West Balkan.

*Eupolybothrus (Propolybothrus) wernerii* (Attems, 1902)

MATERIAL: 1 adult ♀, 1 subadult, 1 larval stadium, Llogorase Pass, 1,025 m alt., under stones, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.

REMARKS: This is the first formal record of this centipede in Albania, hitherto only preliminarily reported there by Stoev

[1997b]. *E. wernerii* has been redescribed by Zapparoli [1994] from the mainland of Greece and, considering the above record in Albania, this is probably a species confined to the mountains of the Southwest Balkans. Another species of the subgenus *Propolybothrus*, *E. dolops* Zapparoli, 1998, has recently been described from mainland Greece [Zapparoli, 1998].

CHOROTYPE: Southwest Balkan.

*Eupolybothrus* sp.

MATERIAL: 1 subadult ♂, Korçë Distr., Pustec (Liqena) Village, artificial gallery, 5.10.1994, P. Beron leg.

DESCRIPTION: Antennae composed of ca. 30 segments, last one almost 3 times longer than others. Three black ocelli in a single row. Tömösvary's organ larger than ocelli, generally large. Prosternum with 5+5 teeth. Forcípules not elongated, tibia comparatively short and incrassate. Tergites 9, 11, 13 with feeble projections. All legs elongated.

REMARKS: This specimen could not be reliably determined due to its representing a subadult stadium. Being quite distinct from all other known Albanian *Eupolybothrus*, the above is its brief description.

SCUTIGEROMORPHA

*Scutigera coleoptrata* (Linnaeus, 1758)

MATERIAL: 1 juv., Shkodër Distr., Mali Tarabosh Mt., karstic terrain, 100 m alt., 24.11.2000, A. Zhalov leg.; 1 ♂, between Hotolisht & Librazhd, 300 m alt., shrub, gravel, under stones & bark, 7.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 2 ex., 4 km S of Vlorë, under stones, 1.05.1994, P. Stoev leg.; 1 subadult, Ionian coast, Dhërmi Village, 100 m alt., leaf litter, 11.05.1995, S. Golovatch, P. Stoev & B. Petrov leg.; 1 adult ♀, Gjirokaster, castle, under stones, 6.05.1994, P. Stoev leg.

REMARKS: This species has been reported from Albania by Attems [1929], Manfredi [1932, 1945] and Stoev [1997a]. This is an anthropochoric species known all over the country.

CHOROTYPE: Mediterranean.

Conclusions

The Albanian centipede fauna is currently known to comprise 56 species or subspecies from seven families and 16 genera. 30 (62%) of 48 species are southern in origin. Twelve species (24%) are Balkan endemics (s.l.). Of them, five display a West Balkan distribution pattern, four a Balkan one, two are Southwest Balkan, and one species is confined to caves of northern Albania and Montenegro. Ten species (21%) show a Mediterranean pattern of distribution (s.l.). Of them, three species are East Mediterranean, six holo-Mediterranean, and one Turano-Mediterranean. Eight species (17%) are more widely distributed in South Europe.

The remaining 18 (38%) species are boreal in origin. Of them, seven (15%) are Central European, six (13%) European, and the remaining five (10%) show wider distributions (two Turano-Euro-Mediterranean, and one each West Palaearctic, Euro-Siberian, and Euro-Mediterranean) (Table 1).

Several species or subspecies have been recorded in near proximity to the frontier of Albania and Ljuboten, Mt. Shar Planina in neighbouring Kosovo. These spe-

Table 1. Chorotypes of Albanian centipedes.  
Таблица 1. Хоротипы губоногих Албании.

| Species  | Chorotype                       |
|--|---------------------------------|
| <i>Pachymerium ferrugineum</i> (C.L. Koch, 1835)                       | West Palaearctic                |
| <i>Lithobius (Monotarsobius) crassipes</i> L. Koch, 1862               | Euro-Siberian                   |
| <i>Cryptops hortensis</i> (Donovan, 1810)                              | Turano-Euro-Mediterranean       |
| <i>Clinopodes flavidus</i> C.L. Koch, 1847                             | Turano-Euro-Mediterranean       |
| <i>Geophilus carpophagus</i> Leach, 1815                               | Euro-Mediterranean              |
| <i>Lithobius erythrocephalus</i> C.L. Koch, 1847                       | European                        |
| <i>Lithobius forficatus</i> (Linnaeus, 1758)                           | European                        |
| <i>Lithobius lapidicola</i> Meinert, 1872                              | European                        |
| <i>Lithobius (Sigibius) microps</i> Meinert, 1868                      | European                        |
| <i>Cryptops anomalans</i> Newport, 1844                                | European                        |
| <i>Strigamia crassipes</i> (C.L. Koch, 1835)                           | European                        |
| <i>Lithobius dentatus</i> C. L. Koch, 1844                             | Central European                |
| <i>Lithobius latro</i> Meinert, 1872                                   | Central European                |
| <i>Lithobius lucifugus</i> L. Koch, 1862                               | Central European                |
| <i>Lithobius muticus</i> C.L. Koch, 1847                               | Central European                |
| <i>Lithobius (Monotarsobius) aeruginosus</i> L. Koch, 1862             | Central European                |
| <i>Cryptops parisi</i> Brühlmann, 1920                                 | Central European                |
| <i>Strigamia acuminata</i> Leach, 1815                                 | Central European                |
| <i>Henia illyrica</i> (Meinert, 1870)                                  | South European                  |
| <i>Lithobius schuleri</i> Verhoeff, 1925                               | Southeast European              |
| <i>Lithobius viriatus</i> Sselivanoff, 1878                            | Southeast European              |
| <i>Eupolybothrus fasciatus</i> (Newport, 1845)                         | Southeast European (Apenninean) |
| <i>Eupolybothrus tridentinus</i> (Fanzago, 1874)                       | Southeast European              |
| <i>Harpolithobius anodus</i> (Latzel, 1880)                            | Southeast European              |
| <i>Cryptops croaticus</i> Verhoeff, 1931                               | Southeast European              |
| <i>Cryptops rucneri</i> Matic, 1967                                    | Southeast European              |
| <i>Bothriogaster signata</i> (Kessler, 1874)                           | Turano-Mediterranean            |
| <i>Lithobius (Sigibius) micropodus</i> Matic, 1980                     | Mediterranean                   |
| <i>Scutigera coleoptrata</i> (Linnaeus, 1758)                          | Mediterranean                   |
| <i>Scolopendra cingulata</i> Latreille, 1829                           | Mediterranean                   |
| <i>Dignathodon microcephalus</i> (Lucas, 1846)                         | Mediterranean                   |
| <i>Himantarium gabrielis</i> (Linnaeus, 1767)                          | Mediterranean                   |
| <i>Stigmatogaster gracilis</i> (Meinert, 1870)                         | Mediterranean                   |
| <i>Eupolybothrus litoralis</i> (L. Koch, 1867)                         | East Mediterranean              |
| <i>Lithobius peregrinus</i> Latzel, 1880                               | East Mediterranean              |
| <i>Pleuroolithobius patriarchalis</i> (Berlese, 1894)                  | East Mediterranean              |
| <i>Lithobius (Sigibius) burzenlandicus wardaranus</i> (Verhoeff, 1937) | Balkan                          |
| <i>Clinopodes polythrachus</i> (Attems, 1903)                          | Balkan                          |
| <i>Clinopodes trebevicensis</i> (Verhoeff, 1898)                       | Balkan                          |
| <i>Strigamia transsilvanica</i> (Verhoeff, 1928)                       | Balkan                          |
| <i>Henia devia</i> C.L. Koch, 1847                                     | South Balkan                    |

Table 1 (continuation).  
Таблица 1 (продолжение).

| Species  | Chorotype  |
|--|--|
| <i>Eupolybothrus herzegowinensis</i> (Verhoeff, 1900)    | West Balkan                                      |
| <i>Eupolybothrus caesar</i> (Verhoeff, 1899)             | West Balkan                                      |
| <i>Lithobius tenebrosus calcivagus</i> (Verhoeff, 1900)  | West Balkan                                      |
| <i>Lithobius (Sigibius) trebinjanus</i> Verhoeff, 1900   | West Balkan                                      |
| <i>Scolopendra dalmatica</i> C.L. Koch, 1847             | West Balkan                                      |
| <i>Eupolybothrus wemeri</i> (Attems, 1902)               | Southwest Balkan                                 |
| <i>Lithobius (Thracolithobius) remyi</i> Jawlowski, 1933 | Endemic in caves of Montenegro and North Albania |

cies were included in my previous list of Albanian centipedes [Stoev, 1996], now being removed. These are *Eupolybothrus transsylvanicus* (Latzel, 1882), *Harpolithobius ljubetensis* Verhoeff, 1934, *Lithobius castaneus* Newport, 1844, *L. erythrocephalus montanus* Attems, 1929, *L. tricuspis* Meinert, 1872, *L. validus* Meinert, 1872, *Schendyla montana* Attems, 1895 and *Simophilus albaniensis* Attems, 1929. This makes the new, updated checklist below more stringent.

Undoubtedly, the fauna of Albania is much richer than known to date. At least further ten morphospecies have been spotted among the examined material but, either due to the small size of the samples or their bad condition, they were left aside for a future, more profound study. These morphospecies belong to the following genera: *Geophilus* Leach, 1814, *Henia* C.L. Koch, 1847, *Cryptops* Leach, 1814, *Harpolithobius* Verhoeff, 1904 (probably a new species, recorded from a cave); the *Lithobius* (s.s.) *validus* group (probably a new species recorded in Republic of Macedonia as well), the *Lithobius (Sigibius) apfelbecki* group, and the *Lithobius micropodus* group.

Only further extensive collecting from the whole country, especially, in central and northern Albanian mountains, can reveal the true centipede diversity of this country. Very regrettably, like for many decades earlier, present-day Albania can hardly be frequented by collectors due to its very poor political and economic shape.

## An annotated checklist of the centipedes of Albania

### ORDER GEOPHILOMORPHA

#### Family Himantariidae

- Himantarium gabrielis* (Linnaeus, 1767)  
*Stigmatogaster gracilis* (Meinert, 1870)  
*Bothriogaster signata* (Kessler, 1874)

#### Family Dignathodontidae

- Dignathodon microcephalus* (Lucas, 1846)  
? *Henia crinita* Attems, 1903  
*H. devia* C.L. Koch, 1847  
*H. illyrica illyrica* (Meinert, 1870)

#### Family Linotaeniidae

- Strigamia acuminata* (Leach, 1815)  
*S. crassipes* (C.L. Koch, 1835)  
*S. transsilvanica* (Verhoeff, 1928)

#### Family Geophilidae

- Clinopodes flavidus* C.L. Koch, 1847  
*C. polytrichus* (Attems, 1903)  
*C. trebevicensis* (Verhoeff, 1898)  
? *Geophilus carpophagus* Leach, 1815  
*Pachymerium ferrugineum* (C.L. Koch, 1835)

### ORDER SCOLOPENDROMORPHA

#### Family Scolopendridae

- Scolopendra cingulata* Latreille, 1829  
*S. dalmatica* C.L. Koch, 1847  
*Cryptops anomalans* Newport, 1844  
*C. croaticus* Verhoeff, 1931  
*C. hortensis* (Donovan, 1810)  
*C. parisi* Brölemann, 1920  
*C. rucneri* Matic, 1967

### ORDER LITHOBIOMORPHA

#### Family Lithobiidae

- Eupolybothrus fasciatus fasciatus* (Newport, 1845)<sup>1</sup>  
= ? *E. fasciatus fasciatus* var. *albanicus* (Attems, 1929)  
= ? *E. fasciatus fasciatus* var. *storkani* (Attems, 1929)  
= ? *E. fasciatus presbanus* (Verhoeff, 1941)  
? *E. grossipes* (C.L. Koch, 1847)  
*E. litoralis* (L. Koch, 1867)  
*E. tridentinus* (Fanzago, 1874)  
*E. herzegowinensis* (Verhoeff, 1900)  
*E. caesar* (Verhoeff, 1899)  
*E. werneri* (Attems, 1902)  
*Lithobius dentatus* C.L. Koch, 1844  
*L. erythrocephalus* C.L. Koch, 1847  
*L. forcifatus* (Linnaeus, 1758)  
*L. lapidicola* Meinert, 1872  
*L. latro* Meinert, 1872

<sup>1</sup> Dr. M. Zapparoli (personal communication) believe that the *fasciatus* group of *Eupolybothrus* is represented in the Balkans by *E. litoralis* only.

- L. lucifugus* L. Koch, 1862  
 ? *L. mutabilis* L. Koch, 1862 (sub *L. dubius* Tömös-váry, 1880)  
*L. muticus* C.L. Koch, 1847  
*L. peregrinus* Latzel, 1880  
*L. pusillus* Latzel, 1880 (= ? *L. lapidicola*)  
*L. schuleri* Verhoeff, 1925  
*L. tenebrosus calcivagus* (Verhoeff, 1900)  
*L. validus punctulatus* (= ? *L. matici* Prunescu, 1966)  
*L. viriatus* Sseliwanoff, 1878  
 ? *L. (Sigibius) burzenlandicus wardaranus* (Verhoeff, 1937)  
 ? *L. (S.) micropodus* Matic, 1980 (= *L. microps* A.A.)  
*L. (S.) microps* Meinert, 1868  
*L. (S.) trebinjanus* Verhoeff, 1900  
*Lithobius (Monotarsobius) aeruginosus* L. Koch, 1862  
*L. (M.) crassipes* L. Koch, 1862  
*L. "(Thracolithobius)" remyi* Jawlowski, 1933  
*Pleuroolithobius patriarchalis* (Berlese, 1894)  
*Harpolithobius anodus* (Latzel, 1880)

#### ORDER SCUTIGEROMORPHA

##### Family Scutigeridae

*Scutigera coleoptrata* (Linnaeus, 1758)

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