The millipedes of Albania: recent data, new taxa; systematical, nomenclatural and faunistical review (Myriapoda, Diplopoda)

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ABSTRACT
A recent collection of Diplopoda deriving from Albania contains thirty-two identifiable species, including four new to science: *Acanthopetalum subpatens* n.sp. (Schizopetalidae), *Anamastigona albanensis* n.sp. (Anthroleucosomatidae), *Metonomastus petrelensis* n.sp. (Paradoxosomatidae) and *Typhloiulus beroni* n.sp. (Julidae). The millipede fauna of Albania and adjacent lands is reviewed, with a checklist currently encompassing fifty genera and over 150 species or subspecies. Some new synonymies are established concerning: *Glomeris pustulata* Latreille, 1804; *Acanthopetalum carinatum* (Brandt, 1840); *Brachyiulus varibolinus* Attems, 1904; *Acanthoiulus fuscipes* (C. L. Koch, 1847); *P. varius* (Fabricius, 1781); *Leptoiulus sarajevensis* Verhoeff, 1898; *Leptoiulus* Verhoeff, 1894. A substitute name is proposed for *Leptoiulus storkani* Verhoeff, 1932: *L. jaroslavi* nom. nov. The julid tribe Typhloiulini is synonymized under the Leptoiulini. The name *Diploiulus* Berlese, 1883, is considered to have been typified in the original description, with *Julus terrestris* Linnaeus, 1758, being its valid type species; *Diploiulus* becomes objective synonym of *Julus* Linnaeus, 1758, and *Acanthoiulus* Verhoeff, 1896, takes priority in the list of synonyms or subgenera of *Pachyiulus*. *Pachyiulus krivolutskyi* Golovatch, 1977, is a new subjective junior synonym of *Iulus foetidissimus* Muralewicz, 1907, non *Iulus foetidissimus* Savi, 1819, it is available as a replacement name to avoid homonymy. The following taxa are new from Albania: *Glomeris pustulata* Latreille, 1804; *Acanthopetalum albidicolle* Verhoeff, 1900; *Brachydesmus herzogowinensis* Verhoeff, 1897; *Leptoiulus macedonicus* (Attems, 1927); *Brachyiulus apfelbeckii* Verhoeff, 1898; *Megaphyllum imbecillum* (Latzel, 1884); *Metonomastus* Attems, 1937 and *Anamastigona* Silvestri, 1898.

KEY WORDS
Diplopoda,
fauna,
taxonomy,
Albania.

RÉSUMÉ

Une importante collection de diplopodes récoltée récemment sur une grande partie du territoire de l'Albanie est étudiée ici ; elle comprend trente-deux espèces dont quatre sont nouvelles pour la Science : *Acanthopetalum subpatens* n.sp. (Schizopetalidae), *Anamastigona albanensis* n.sp. (Anthroleucosomatidae), *Metonomastus petrelensis* n.sp. (Paradoxosomatidae), *Typhloiulus beroni* n.sp. (Julidae). Une liste des diplopodes de l'Albanie et des régions voisines est donnée ; elle comprend huit ordres, au moins dix-neuf familles, cinquante genres et plus de 150 espèces ou sous-espèces d'une validité indiscutable. Plusieurs nouvelles synonymies ont pu être établies : *Glomeris pustulata* Latreille, 1804 = *Gl. norica vodnatensis* Verhoeff, 1926 ; *Acanthopetalum carinatum* (Brandt, 1840) = *Lysiopetalum comma* Verhoeff, 1900, *L. thessalorum* Verhoeff, 1901, *L. macedonicum* Verhoeff, 1923, *L. albanicum* Verhoeff, 1932, *L. comma janinense* Verhoeff, 1932, *L. thessalorum lychnitis* Verhoeff, 1932 ; *Brachyiulus varibolinus* Attems, 1904 = *B. beratinus* Manfredi, 1945 ; *Acanthoiulus fuscipes* (C. L. Koch, 1847) = *Pachyiulus bosniensis* Verhoeff, 1895, *P. fuscipes altivagus* Verhoeff, 1899, *P. f. plasensis* Verhoeff, 1910, *P. f. simplex* Verhoeff, 1910 ; *Pachyiulus varius* (Fabricius, 1781) = *Julus flavipes* C. L. Koch, 1847, *Iulus oenologus* Berlese, 1885, *Pachyiulus apfelbecki* Verhoeff, 1901, *P. varius* var. *pallipes* Manfredi, 1945 ; *Leptoiulus sarajevensis* Verhoeff, 1898 = *Macedoiulus storkani* Verhoeff, 1932. Un nouveau nom, *Leptoiulus jaroslavi*, est proposé en remplacement de *Leptoiulus storkani* Verhoeff, 1932, pour corriger l'homonymie résultant de la synonymie de *Leptoiulus* Verhoeff, 1894 et *Macedoiulus* Verhoeff, 1932. La tribu des Typhloiulini disparaît, englobée par les Leptoiulini. Le taxon nominal *Diploiulus* Berlese, 1883 est considéré ici comme validé dans la description originale par la désignation de *Julus terrestris* Linnaeus, 1758, comme espèce-type ; de ce fait, *Diploiulus* devient un synonyme objectif de *Julus* Linnaeus, 1758, et en conséquence *Acanthoiulus* Verhoeff, 1896, devient prioritaire dans la liste des synonymes ou sous-genres de *Pachyiulus* Berlese, 1883. *Pachyiulus krivolutskyi* Golovatch, 1977, du Caucase occidental, qui est un nouveau synonyme subjectif plus récent de *Iulus foetidissimus* Muralewicz, 1907, remplace ce taxon pour éviter l'homonymie avec *Iulus foetidissimus* Savi, 1819. Les genres *Metonomastus* Attems, 1937, et *Anamastigona* Silvestri, 1898, sont répertoriés pour la première fois d'Albanie, ainsi que les espèces suivantes : *Glomeris pustulata* Latreille, 1804 ; *Acanthopetalum albidicolle* Verhoeff, 1900 ; *Brachydesmus herzogowinensis* Verhoeff, 1897 ; *Leptoiulus macedonicus* (Attems, 1927) ; *Brachyiulus apfelbeckii* Verhoeff, 1898 ; *Megaphyllum imbecillum* (Latzel, 1884).

MOTS CLÉS
Diplopoda, faune, taxinomie, Albanie.

INTRODUCTION

The diplopod fauna of the Balkan Peninsula, including Albania, has long been acknowledged as one of the richest in the Mediterranean, indeed in the Palaearctic as a whole. Even the incomplete, poor but recent work by Ceuca (1992), devoted to this fauna, lists 140 genera and over 660 species or subspecies, of which twenty genera and fifty-three species (including nine endemics) have been recorded in Albania.

The present contribution is mainly devoted to the study of a fine collection of Diplopoda recently made in Albania by Dr. P. Beron,

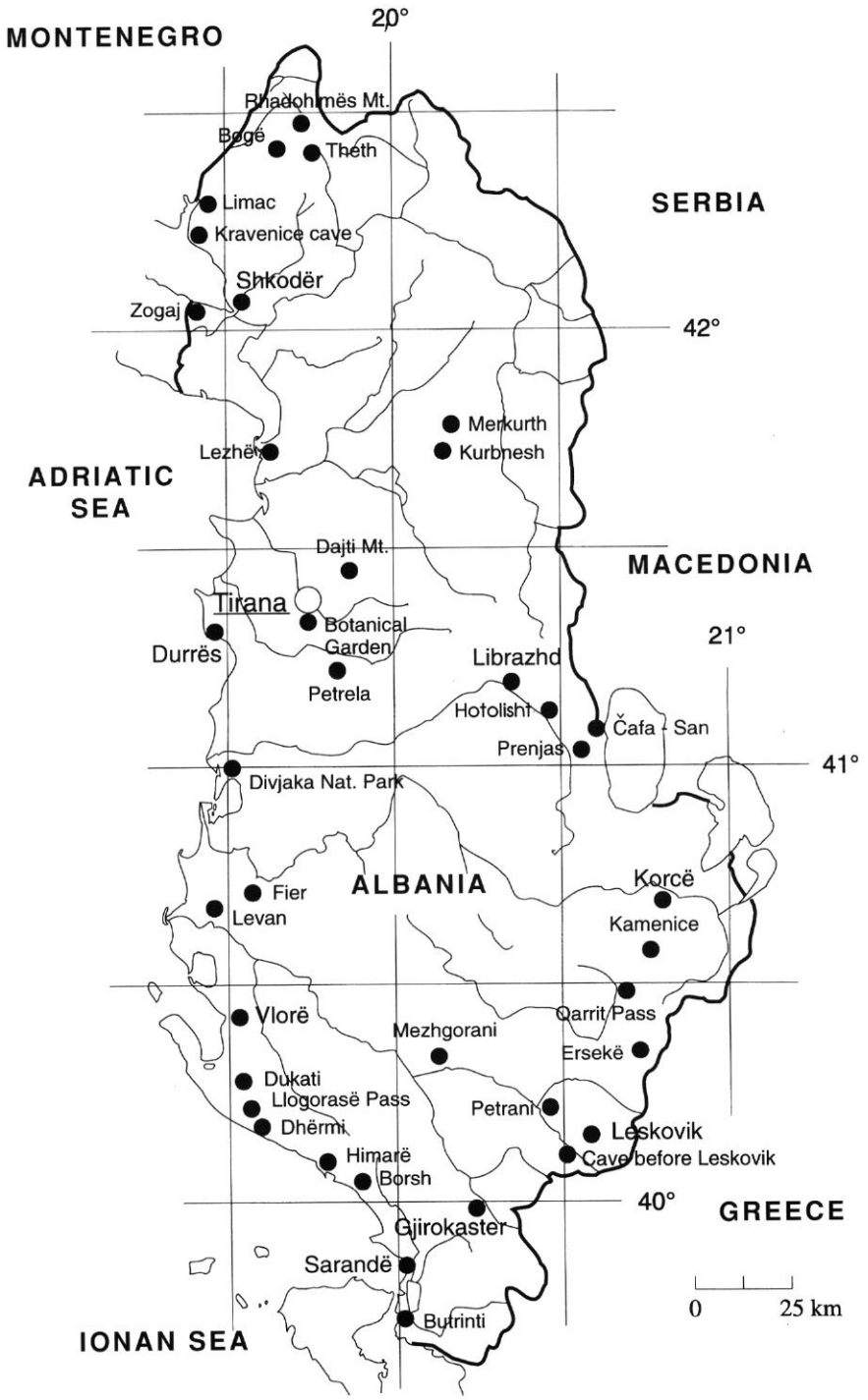


FIG. 1. — Map of Albania. Dark spots represent the localities visited by recent collectors (almost all from Sofia, Bulgaria) since 1993 in numerous parts of the territory of Albania.

Dr. S. Beshkov, Miss T. Ivanova, Mr. N. Lanjev, Mr. B. Petrov, Mr. P. Tenchev, Mr. T. Troanski and Miss D. Zaprianova (all from Sofia, Bulgaria) as well as by two of us (P. Stoev and S. Golovatch). This collection covers much of the territory of this country (see Fig. 1) and happens to contain a number of taxa new either to science or to the Albanian list. In addition, several samples have allowed us to shed additional light on the status of some older taxa, resulting in some new synonymies.

All this has made it possible to review the entire diplopod fauna of Albania and adjacent areas and to compile a new checklist. As such a presentation does not lend itself to a separate historical treatment, all relevant references are given in the text and/or mentioned in the checklist.

The bulk of the material treated here, including all holotypes, have been deposited in the collection of the National Museum of Natural History in Sofia, Bulgaria (NHMS), with a few samples being retained for the Muséum national d'Histoire naturelle in Paris, France (MNHN), and the Zoological Museum of the State University of Moscow, Russia (ZMUM), as indicated hereafter.

TAXONOMIC PART

Order POLYXENIDA Lucas, 1840
Family POLYXENIDAE LUCAS, 1840

Polyxenus lagurus (Linnaeus, 1758)

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1550 m, 23.V.1993, 4 juv. (NHMS), leg. P. Beron & B. Petrov.

Lushnja District. Divjaka Natural Park, *Pinus halepensis* and *P. pinea* strand forest, under stones, 10.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS

This trans-holarctic species has long been reported from Albania (Attems 1929). The samples at hand seem to belong to the bisexual race (M. Nguyen Duy-Jacquemin, personal communication).

Order GLOMERIDA Leach, 1815
Family GLOMERIDAE Leach, 1815

Onychoglomeris herzogowinensis (Verhoeff, 1898) (Fig. 2A-G)

MATERIAL EXAMINED. — **Sarandë District.** Ionian Coast, Dhërmi, 16.IV.1994, 1 ♀ (NHMS), leg. S. Beshkov. — Between Dhërmi and Himarë, under stones, 3.V.1994, 2 ♂♂, 1 ♀ (NHMS); 2 ♂♂, 2 ♀♀ (ZMUM), leg. P. Stoev. — Himarë, 3-4.V.1994, 1 ♂ (NHMS), leg. P. Stoev.

Vlorë District. Near Dukati, 450 m, leaf litter and under stones, 11.V.1995, 2 ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Llogorasë Pass, S of Vlorë, 1025 m, under stones, 11.V.1995, 2 ♂♂ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

Gjirokaster District. Gjirokaster, castle, under stones, 6.V.1994, 2 ♂♂, 3 ♀♀ (NHMS); 2 ♂♂, 2 ♀♀ (MNHN, Collection Myriapodes CC 068), leg. P. Stoev.

REMARKS

The species name has been misspelt since its original proposal (see history in Attems 1935, sub *hercegovinensis*). This species has been split into three subspecies: *O. h. herzogowinensis* (Verhoeff, 1898), from Croatia, Bosnia, Hercegovina and Montenegro, *O. h. media* Attems, 1935, from Albania, and *O. h. australis* Attems, 1935, from Epirus, Greece (Attems 1935). The abundant material at hand permits us, however, to question this division and we refer to *herzogowinensis* as a single, quite widespread and rather variable W Balkan species.

Indeed, size variations range from 13-24 mm in length and from 7-11 mm in width, with female typically somewhat larger than male. Coloration of the terga is usually blackish (regardless of the usual pale lateral and caudal margins), only very seldom pale red-yellowish-brown, with faint marbled markings sometimes visible in places, mostly antero-sublaterally on each tergite to only a very few postcollar terga. The thoracic shield is crossed by 1-2 striae. The male pygidium is usually distinctly concave/impressed transversely, though in one male from Gjirokaster it is almost as convex as in the female. On the other hand, such characters as the single stria across the collum as well as the delicately and densely punctu-

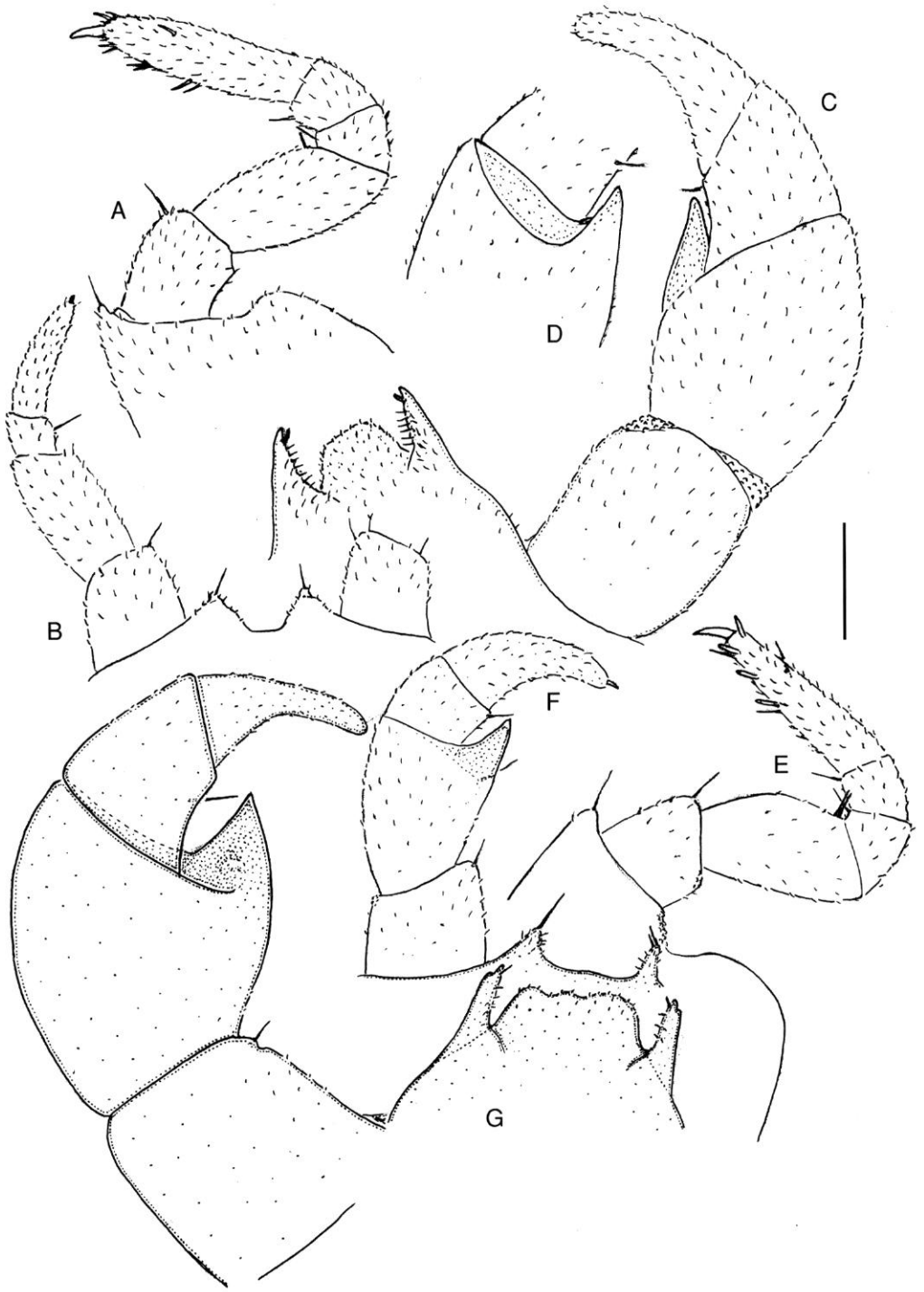


FIG. 2. — *Onychoglomeris herzogowinensis* (Verhoeff, 1898), ♂♂ from Dhërmi-Himarë (A-D) and Himarë (E-G): **A**, **E**, leg 17; **B**, **F**, leg 18; **C**, **G**, leg 19 (telopods), frontal view; **D**, femoral process of telopod, caudal view. Scale bar: 0.5 mm.

red pygidium appear stable, though pygidial punctuation is known to be missing in *h. herzogowinensis* (see Attems 1935).
The structure of the male legs 17 to 19 is also quite variable, *e.g.* the armature of tarsus 17 with spines and the outline of the external lobe of coxa 17 (though the latter is always low and inconspicuous) (Fig. 2A). The notch of syncoxite 18 ranges from broad (Fig. 2B) to very broad, sometimes even with a median knob. The median lobe of syncoxite 19 is more or less high and usually somewhat truncated (Fig. 2C), the inner femoral process is more or less prominent (Figs 2C, D).
The male from Himarë deserves special mention. Superficially, it represents an unquestioned *herzogowinensis*, yet its legpair 18 looks quite bizarre due to a conspicuous inner femoral process which strongly resembles that of the telopod proper (Fig. 2F). Both legpairs 17 and 19 look normal (Figs 2E, G). However, a closer examination of this specimen showed that its pygidium is abnormal, with an evident asymmetrical notch at the caudal margin. Moreover, the femoral processes on legpair 18 appear somewhat unequal, one of them being bifid. The median lobe of the telopod syncoxite is also slightly asymmetrical.
The coherent distribution pattern, the presence of only a single male exhibiting such a peculiar structure of legpair 18 (comparable among the Glomerida perhaps only with that of the Glomeridellidae) and, especially, the likely teratology, all this precludes us from creating a separate species for this specimen, regardless of its distinctive appearance.

Glomeris pulchra C. L. Koch, 1847

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1300 m, Maya Bridashit, 20.V.1993, 4 ♂♂, 5 ♀♀ (NHMS), 1 ♂, 1 ♀ (MNHN, Collection Myriapodes CC 095), 2 ♂♂, 1 ♀ (ZMUM), leg. P. Beron & B. Petrov. — Zogaj, artificial gallery, 13.IV.1994, 2 ♂♂, 1 ♀ (NHMS), leg. S. Beshkov.

REMARKS
All these samples display a colour pattern typical for the species concerned, with a pair of pale spots also on terga 5 to 7. This species (which includes numerous varieties - *e.g.* Attems 1929) has already been reported from Albania and the adjacent Balkan regions.

Glomeris pustulata Latreille, 1804

Glomeris norica vodnatensis (Verhoeff, 1926), syn. n.

MATERIAL EXAMINED. — **Rrëshen District.** Merkurth, under stones, 11.VI.1993, 1 ♂ (NHMS), leg. P. Beron & B. Petrov.

REMARKS
The identities both of the above sample and the name *vodnatensis* itself are quite obscure. The latter was introduced as based on a single holotype male from Wodnata Peschtera Cave, in the Tzerovo area (Isker-Defile), N Bulgaria. It was initially described as a variety of *Glomeris norica* Latzel, 1884, a species which in turn was originally established as only a variety of *pustulata*! Verhoeff (1926) also mentioned another male taken from the same cave together with the holotype of *vodnatensis*, which he referred to as an "almost typical" *norica*. *G. n. vodnatensis* was said to differ by the body being entirely black, with traces of pale spots on the thoracic shield, pygidium and tergum 7, as well as by the thoracic shield bearing 1 + 2 striae. This strict syntopy alone casts doubt on the validity of *vodnatensis*, which perhaps explains why Verhoeff treated it as only a variety.
Yet Strasser (1966) promoted *vodnatensis* to full species status and even regarded the Bulgarian *G. pustulata diminuta* Attems, 1951, as its junior synonym. Latzel (1884) characterized his var. *norica* as differing from *pustulata* by the often considerably larger transverse-oval tergal spots, two crossing striae on the thoracic shield and a small but evident tubercle on the pygidium of both sexes. This knob is sometimes known to be absent from *pustulata*, its presence being more characteristic of *norica* (see Latzel, 1884).
The Albanian specimen at hand displays a somewhat elevated number of striae on the thoracic shield: 1 very small anterior + 1 complete + 3 incomplete posterior. Also, it has small reddish spots on all terga, a well-expressed caudal concavity but no tubercule on the pygidium. Yet considering the quite pronounced variation range in the size, colour and presence of pale spots on certain terga as well as in the number of striae on the thoracic shield, the presence of a knob on the pygidium, etc. (Latzel 1884; Attems

1959), coupled with the vast distribution of *pustulata*, ranging from NW Africa, the Iberian Peninsula and France in the west to the Balkans, Alps and Carpathians (with the adjacent plains of Germany, Poland, Hungary and Rumania) in the east, it seems better to attribute the above male to *pustulata*. In addition, this species has already been recorded in nearby Croatia and Slovenia, as well as in Bulgaria thus being new to the Albanian list.

Order CALLIPODIDA Bollman, 1893
Family DORYPETALIDAE Verhoeff, 1900

Dorypetalum trispiculigerum Verhoeff, 1900

MATERIAL EXAMINED. — **Sarandë District.** Ionian Coast, Borsh, under stones, 5.V.1994, 1 ♂, 1 juv. ♀ (NHMS); leg. P. Stoev.

REMARKS
Described from Corfu (= Kyrkera) by Verhoeff (1900) as a subspecies of *degenerans* (Latzel, 1884), the nominate form of which is currently known from Bosnia and Hercegovina, Serbia, Macedonia, and Rumania, *D. trispiculigerum* has since become treated as a separate species restricted to Corfu and Epirus, NW Greece (Strasser 1976). Moreover, Strasser (1976) noted certain variability in its gonopod structure, so the question arises as to whether this taxon is a junior synonym of the Bosnian *degenerans bosniense* (Verhoeff, 1897). A direct comparison of the types is thus desirable to solve this question. Our sample from Borsh, some 30 km from the terra typica, agrees very well with the original description and represents the first formal record of *trispiculigerum* in Albania.

Family SCHIZOPETALIDAE Verhoeff, 1909

Callipodella fasciata (Latzel, 1882)
(Fig. 3A, B)

MATERIAL EXAMINED. — **Shkodër District.** Theth, 800-900 m, 28.V.1993, 2 ♂♂, 2 ♀♀ (NHMS), leg. P. Beron (No. 556). — Bogë, 1000-1100 m, 5-9.VI.1993, 1 ♂, 1 ♀ (ZMUM), leg. P. Beron & B. Petrov. — Bogë, Maya Tchardakut, 1200-1400 m, 1.VI.1993, 1 ♀ (NHMS), leg. P. Beron (No. 573). — Same locality, 1400-1800 m, 1.VI.1993, 1 ♀, 1 juv. ♀ (NHMS), leg. P. Beron (No. 562).

REMARKS
This Balkan (*s.l.*) species has already been reported from Albania (Attems 1929, 1959). New illustrations are presented here to depict its highly characteristic gonopod structure (Figs 3A, B).

Apfelbeckia wohlberedti Verhoeff, 1909
(Fig. 3C-E)

MATERIAL EXAMINED. — **Shkodër District.** Bogë, cave No. 25, 23.V.1993, 1 ♂, 2 ♀♀ (NHMS), leg. P. Beron & B. Petrov (No. 555). — Hot region, Daic, Cave Kravenices, 12.XI.1991, 1 ♀, 1 juv. (NHMS), leg. N. Lanjev. — Same locality, 5.VI.1992, 4 ♂♂ (NHMS), leg. S. Beshkov. — Hot region, near Shkodër, Limac, cave, 100 m, 4.VI.1992, 4 ♂♂ (NHMS), leg. S. Beshkov. — Same locality, 6.VI.1992, 1 ♂ (NHMS), leg. S. Beshkov. — Zogaj, artificial gallery, 13.IV.1994, 1 ♂, 1 ♀ (NHMS), 1 ♂, 1 ♀ (MNHN, Collection Myriapodes F 040), 1 ♂, 1 ♀ (ZMUM), leg. S. Beshkov.

REMARKS
This very large species has hitherto been reported only from the north of Albania. Because the original illustrations presented by Verhoeff (1909) show only separate details of gonopod structure, new drawings have been made from a typotype to display an entire gonopod (Fig. 3C-E). Like the type series taken at Reçi, most of the new specimens are from caves, though the general appearance of the creature is definitely troglotenic: it is darkly pigmented and with fully developed, black ocellaria.

Acanthopetalum* (*Acanthopelum*) *albidicolle
(Verhoeff, 1900)

MATERIAL EXAMINED. — **Sarandë District.** Ionian coast, Himarë, cave, middle part, 4.V.1994, 2 ♀♀, several juv. (NHMS), leg. P. Stoev.

REMARKS
Even with only male at hand, this species is easy to recognize, due to its characteristically pale col-

lum contrasting with the remaining dark body (Verhoeff 1900; Strasser 1970). Hitherto known only from Corfu, Greece, only some 40 km away from Himarë, this represents the first definite record of *albidicolle* in Albania. Strasser (1976) also reported it from Albania, but without mentioning any relevant material.

Acanthopetalum (*Petalysium*) *carinatum* (Brandt, 1840) (Fig. 3F-J)

Lysiopetalum comma Verhoeff, 1900, syn. n.
Lysiopetalum thessalorum Verhoeff, 1901, syn. n.
Lysiopetalum macedonicum Verhoeff, 1923, syn. n.
Lysiopetalum albanicum Verhoeff, 1932, syn. n.
Lysiopetalum comma janinense Verhoeff, 1932, syn. n.
Lysiopetalum thessalorum lychnitis Verhoeff, 1932, syn. n.

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1000-1100 m, 8-9.VI.1993, 1 ♀, 1 juv. ♀ (NHMS), leg. P. Beron & B. Petrov. — Same locality, Maya Tchardakut, 1400-1600 m, 1.VI.1993, 1 ♂ (NHMS), leg. P. Beron. — Theth, 800-900 m, 28.V.1993, 2 ♂♂ (NHMS), leg. P. Beron (No. 556).
Lushnja District. Divjaka Natural Park, *Pinus halepensis* and *P. pinea* strand forest, 10.V.1995, 2 ♂♂, 2 ♀♀, 4 juv. ♀♀, 1 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Rrëshen District. Merkurth, under stones, 11.VI.1993, 1 ♂ (ZMUM), leg. P. Beron & B. Petrov.
Vlorë District. Near Dukati, 450 m, under stones, 11.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Llogorasë Pass, S of Vlorë, 1025 m, strongly deteriorated *Pinus* stand, under stones, 11.V.1995, 1 ♀, 2 juv. ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Sarandë District. Ionian coast, Dhërmi, 2.V.1994, 1 ♂, 3 juv. ♀♀, 3 juv. (MNHN, Collection Myriapodes F 006), leg. P. Stoev. — Same locality, dry small cavern, 2-20 m in length, 3.V.1994, 2 ♀♀ (NHMS), leg. P. Stoev. — Between Dhërmi & Himarë, under stones, 30.V.1994, 1 ♀ (NHMS), leg. P. Stoev.
Gjirokaster District. Gjirokaster, castle, 6.V.1994, 1 ♂, 1 juv. ♀, 2 juv. (NHMS), leg. P. Stoev.
Korçë District. Pustec (Liqena), artificial gallery, 5.X.1994, 1 ♀, 1 juv. (NHMS), leg. P. Beron. — Same locality, Cave Gubilishteto (Sinkhole), 6.X.1994, 1 juv. ♀ (NHMS), leg. P. Beron & T. Ivanova. — Pustec 1 (Maligrad), 5.XI.1994, 1 ♀ (NHMS), leg. T. Ivanova. — Tren, Uikut Cave, 3.X.1994, 1 ♀, 5 juv. ♀ (NHMS), leg. P. Beron & T. Ivanova. — Lake Prespa, Maligradska peshtera Cave, 5.X.1994, 1 ♂ (NHMS), leg. P. Beron & T. Ivanova.
Tirana District. Tirana, Botanical Gardens, under stones, 8.V.1995, 1 ♂, 1 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Mt. Dajti, 20 km NE of Tirana, 1000 m, *Fagus, Acer*, etc. forest, leaf litter, 9.V.1995, 1 ♂, 1 ♀, 1 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Librazhd District. Above Prenjas, 750 m, scrub on slope, 7.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Permet District. Petrani, complex of artificial galleries, 300 m, 12.V.1995, 1 ♂ (NHMS), leg. P. Stoev & B. Petrov.

REMARKS

The taxa listed in the synonymy have hitherto been referred to either as the *carinatum*-group (*cf.* Hoffman 1972) or as *Petalysium* Strasser, 1976, the latter as an independent subgenus as opposed to the remaining *Acanthopetalum* s. str. (see Strasser 1974; designation of *carinatum* as the type species in Strasser 1976). Characterized first of all by the presence of a peculiar process (U in Fig. 3F-J) on the gonopod femorite, this group seems fairly homogeneous and is also easily distinguished by the gonocoxal processes crossing each other *in situ*, the gonopod prefemur and femur combined being much longer than the acropodite, and the sternal triangles between the male legpairs 8 and 9 strongly swollen (*cf.* Strasser 1974). Yet, this group has been plagued by nomenclatural problems ever since the description of *Lysiopetalum carinatum*.

Brandt (1840) described his *carinatum* very poorly from some unspecified material from Dalmatia. Later, Latzel (1884) provided not only a fine catalogue, a fine redescription and proper illustrations of gonopod morphology, based on topotypes, but he even indicated the exact provenance of Brandt's type samples. Verhoeff (1923) also studied a good number of additional topotypes (some of which, all females, are housed in the MNHN collection), providing further illustrations of gonopod structure and comparing it with those of some especially closely related taxa. As a result, the identity of *carinatum* can be considered as fixed with a fair degree of certainty. What strikes one immediately, when studying and comparing the relevant literature and drawings, is the fact that all above Verhoeffian taxa differ vir-

tually solely in the degree of expression of the gonofemoral uncus (U). In *albanicum* and *thessalorum*, U is almost straight, while in *carinatum*, *macedonicum* and, especially, *comma* it is strongly unciform (*cf.* Verhoeff 1932, sub *oncos*). At first, even Verhoeff (1899, 1909) lumped all his samples deriving from Bosnia, Hercegovina, Dalmatia and Albania under *carinatum*, as did

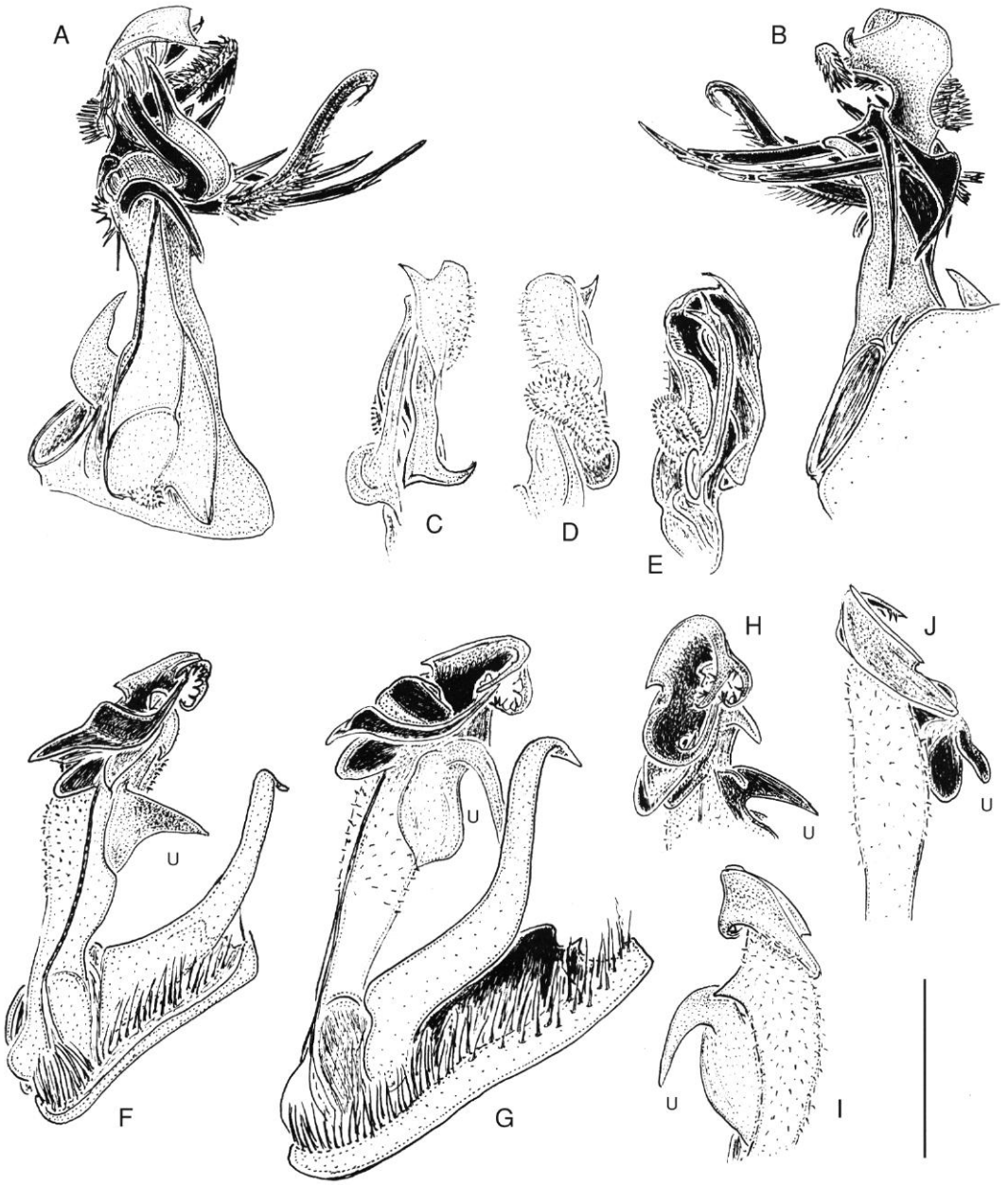


FIG. 3. — Gonopods of *Callipodella fasciata* (Latzel, 1882), ♂ from Theth (**A-B**); *Apfelbeckia wohlberedti* Verhoeff, 1909, ♂ from near Bogë (**C-E**), and *Acanthopetalum carinatum* (Brandt, 1840), ♂♂ from Merkurth (**F**, mesal view) and Dhërmi (**G-J**, various aspects). Scale bar: 1.0 mm (A, B, F-J) and 2.0 mm (C-E).

Manfredi (1945) for her few Albanian specimens of *Acanthopetalum* (also sub *Lysiopetalum*). Having revised most of the relevant types, Hoffman (1972) questioned the status of *albanicum*, thinking it might even represent the same population as *lychnitis*, stressing that both taxa scarcely differ from *thessalorum*. Besides, Strasser (1976) suggested that *janinense* would be better regarded as a variety, rather than as a subspecies of *comma*.

All available evidence, including the material at hand, leads to the conclusion that we in fact face only a single variable species, *carinatum* by priority. Hence the above new synonyms. Variations mainly concern body size and, especially, the shape of U, the latter ranging from relatively small and straight (*e.g.* var. *albanicum*) to particularly large and strongly curved (var. *comma*). Figure 3F-J shows almost the entire known variation range of U shapes.

Contrary to Hoffman (1972), who believed in a north-south gradient in size increase of the gonofemoral process, there seems to be no coherent pattern in the distribution of U shapes, except that they are relatively constant micro- rather than macrogeographically. This is evident from the Albanian samples alone. Thus, in the north (*e.g.* at Bogë), U resembles that depicted by Verhoeff (1932) for *thessalorum lychnitis* or *comma*, only a little longer and more strongly curved. At neighbouring Theth, U is even longer. On the other hand, at Merkurth (Fig. 3F), Divjaka and some other places, U is more or less simple and triangular, displaying a condition somewhat intermediate between *thessalorum*, which is known also from Valona (Vlorë), Albania, and Macedonia, and *albanicum*, which has also been reported from Albania and Macedonia. At Dhërmi (Figs 3G-J), U is S-shaped, much as in *comma*, which has hitherto been recorded only in Epirus and Corfu, and *macedonicum*, the latter known from Macedonia within both ex-Yugoslavia and Greece. In the south of Albania, at Gjirokaster or Petrani, U is again *thessalorum*-like.

Of course, to distinguish populational/microgeographical variability from the individual one, has more materials to be collected and considered throughout the *Petalysium/carinatum* range. This remains a challenge for future investigations.

Ecologically, this also seems to be a quite homogeneous group, which is not present in caves, except by chance (trogloxenic, see Strasser 1974). As regards the geographical distribution of *carinatum*, it is quite vast and coherent, being confined mainly to the western part of the Balkan region and ranging from the Rijeka Gulf, Slovenia, in the north down to Corfu and Epirus, Greece, in the south (see Strasser 1974), also being recorded in Macedonia as well as in Bulgaria (Ceuca 1973).

Acanthopetalum subpatens n.sp.
(Fig. 4)

MATERIAL EXAMINED. — **Leskoviku District.** Cave on the road Permet-Leskoviku, 5 km before Leskoviku, 900 m,12.V.1995, holotype ♂ (NHMS), leg. P. Stoev & B. Petrov; paratypes together with holotype: 2 ♂♂, 1 ♀ (NHMS); 1 ♂, 1 ♀ (MNHN, Collection Myriapodes F 015), 1 ♂, 1 ♀ (ZMUM). — Same locality, 1.VI.1994, 3 ♂♂, 1 juv. ♂ (NHMS), leg. T. Ivanova.

ETYMOLOGY. — Name emphasizes the especially close relationship with *patens*.

DIAGNOSIS

By its bifid solenomerite and the somewhat serrate outer margin of its tibiotarsus, *subpatens* approaches *furculigerum* Verhoeff, 1901, from Crete, with the very closely related species or even subspecies *patens* Strasser, 1973, described from Epirus, Greece, and *albidicolle* Verhoeff, 1900 (see above). However, it differs from these in the generally smaller body size (less than 45 mm in length, lesser number of body segments (45 *vs* 46), shape of the male coxa 7; as well as in the lack of gonopod process ha (*sensu* Strasser 1973, 1976), present in *furculigerum* s.l. (see review by Strasser 1976), and from *albidicolle* by the dark collum and some minor details of gonopod structure (see Verhoeff 1900).

DESCRIPTION

Length of adults 32-42 mm, width 2.0-3.0 mm, regardless of the sex; length of holotype *c.*42 mm, height of midbody somite 3.0 mm, width 2.8 mm. Most often forty-five body segments, only rarely forty-four (one female).

Coloration in alcohol pale to rather dark grey-brown-reddish, delicately marbled, with a rather indistinct, small, rounded, pale yellowish to reddish spot anteroventrad of ozopores, also with a similar but even smaller, subtriangular, dorsomedian spot at bottom of a shallow suture between pro- and metazona. Axial line poorly visible, sometimes slightly paler than background. Head and antennae darker, brown, vertex and genae especially strongly marbled; eye patches blackish. Both front and caudal ends a little darker than the rest of body. Sometimes caudal margin of metazona narrowly blackish. Legs yellowish to reddish. Juvenile particularly pale.

Ocelli rather poorly convex yet evident, arranged in rows of 7 + 7 + 7 + 6 + 5 + 4 + 3 + 2 + 1 in adults. Frons densely setose, very strongly flattened and even slightly concave (male) or faintly convex (female). Antennae long, slender, *in situ* surpassing somite 5 (male) or 4 (female). Body segments slightly compressed laterally. Collum and somite 2 costulate only laterally, virtually smooth dorsally. Subsequent somites typically densely costulate all over circumference, midbody metazona with forty-eight evident ribs, prozona distinctly striate/ribbed, only suture in between smooth. Surface dull. Tergal setae dorsal and dorsolateral in position, relatively short, *ca.* one third as long as metazonital length only on a few anteriormost and posteriormost terga, in-between even shorter, often abraded; pattern as 6 + 6 or 5 + 5 on collum and somites 2-4 in a single median row, alternatively 3 + 3 and 3 + 3 on somites 5 and 6 in two rows (one closer to suture, the other near caudal margin), thereafter 6-7 + 6-7 in a single caudal row. Ozopores small but evident, starting from somite 5, each opening behind a small knob.

Legs relatively long, about as long as midbody height, especially densely setose ventrally, with

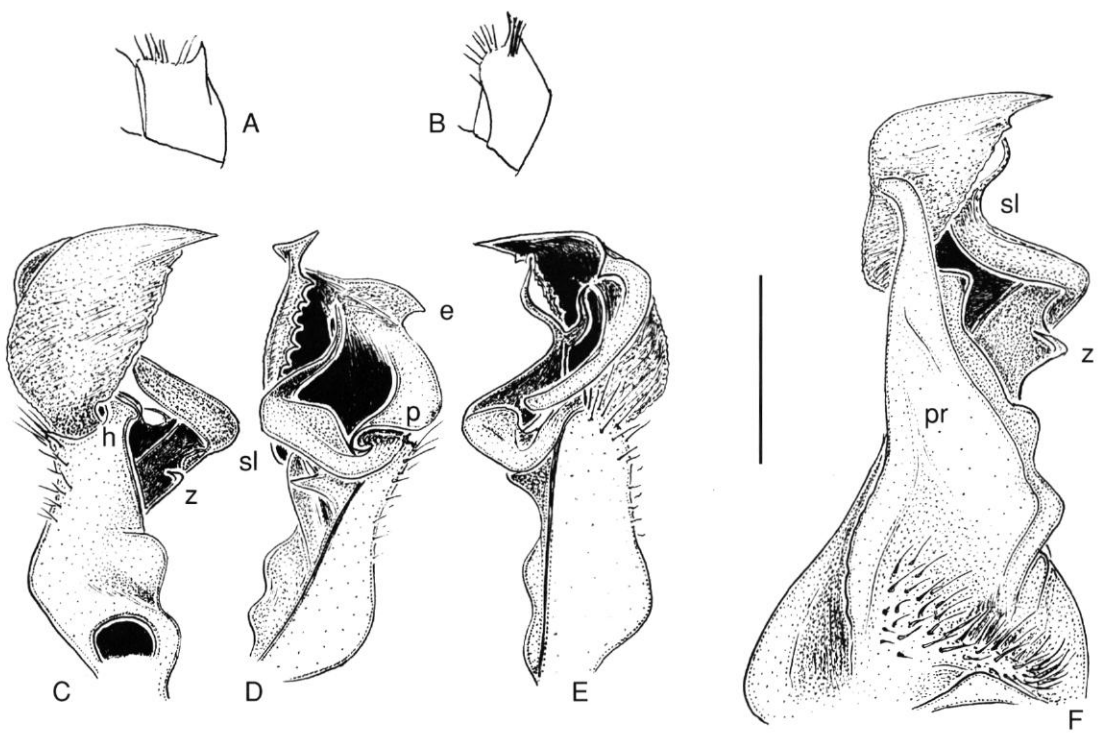


FIG. 4. — *Acanthopetalum subpatens* n.sp., ♂ paratype: **A**, coxa 6, caudal view (drawn not to scale); **B**, coxa 7, caudal view (drawn not to scale); **C-F**, gonopod, various aspects. Scale bar: C-F, 0.5 mm.

ventral brushes on male tibiae and pretarsi until about posterior 1/3 of the body, gradually thinning out thereafter; male coxae 3-6 each with a distinct ventromedian tooth (Fig. 4A), male coxa 7 with a very low, rounded lobe before a similar tooth (Fig. 4B); male postgonopodal prefemora each with a distinct laterobasal swelling.

Gonopods (Fig. 4C-F) typical for the genus, coxal process (pr) not acuminate, solenomerite (sl) bifid, tooth (z) at its base small, tibiotarsus slightly striate mesally and serrate at incurved outer margin, tooth (e) strong but short, process (h) short and blunt, fold (p) gently rounded.

Acanthopetalum sp. indet.

MATERIAL EXAMINED. — **Librazhd District.** Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 5 ♀♀, 1 juv. ♀, of two distinct colour patterns (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Above Prenjas, 750 m, scrub on slope, 7.V.1995, 1 ♀, 1 juv. ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Shkodër District. Alpet Mt. Rhadohimës, 1900-2200 m, 28.V.1995, 1 ♀ (NHMS), leg. P. Beron.

REMARKS
In the absence of adult male, these samples could not be identified to species.

Order CHORDEUMATIDA C. L. Koch, 1847
Family ANTHROLEUCOSOMATIDAE Verhoeff, 1899

Anamastigona albanensis n.sp.
(Figs 5, 6)

MATERIAL EXAMINED. — **Tirana District.** Petrela, *c.*15 km SE of Tirana, 350 m, scrub, ruins, under stones, 9.V.1995, holotype ♂ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov; paratypes together with holotype: 2 ♂♂, 1 ♀ (NHMS), 1 ♂ (MNHN, Collection Myriapodes DA 254), 1 ♂ (ZMUM).

ETYMOLOGY. — Name emphasizes the fact that this is the first species of this genus to be reported from Albania.

DIAGNOSIS
Differs from congeners mainly by particularities in the gonopods and paragonopods structure, especially the median piece of the former and the telopodite of the latter.

DESCRIPTION
Body with thirty segments in both sexes. Head, collum, telson and metazona brown, with a pair of somewhat paler small dorsal spots between macrochaetae; prozona grey; genae and distal halves of legs pale brown; basal halves of legs pale.

Measurements (in mm) and number of ocelli:

	Length	Horizontal diameter	Vertical diameter	Length of antenna	Ranks of ocelli
♂ holotype	11	0.95	0.85	1.6	7 (1234321)
♂ paratype	11.5		0.80	1.4	6 (123432)
♂ -	12		0.75	1.3	6 (223432)
♂ -	11		1	1.7	6 (123432)
♂ -	11.5		0.90	1.55	5 (12343)
♀ -	12.5		1.05	1.75	7 (1234321)

Vertex regularly convex in both sexes; antennae rather slender, antennomere 6 *c.*6 times as long as wide; gnathochilarium with a transversely divided mentum; cheeks globular. Eye patches black, triangular, each with a reduced number of ocelli (13-16) arranged in 5-7 rows.
Collum semi-lunar, with a moderately strongly concave posterior margin and 3 + 3 short macrochaetae (half as short as those on midbody segments). Dorsum slightly convex. Metaterga (Fig. 5) from each side with two little dorsolateral swellings neatly separated by a lateral longitudinal sulcus (q). Latter oblique, lying dorsad frontally and more ventrad caudally, separating lateralmost (and most convex) boss which supports on its dorsalmost part (adjacent to sulcus) both external macrochaetae, anterior and posterior, from medianmost boss. Latter poorly convex, subcircular in shape, lentiform, lying rather far from axial suture and supporting a median macrochaeta by its anteromedian part. Macrochaetae long and arched; median one a little longer than others, almost half as long as total width of metazonite. Distance between

median macrochaeta and axial line about twice as great as that between it and anterolateral macrochaeta, and almost 4 times as great as that between both external macrochaetae, angle being 110-120°. Telson without particulars. Walking legs a little longer than vertical diameter of a midbody somite.

Male

Male pregonopodal legs (pairs 3-7) clearly incrassate due to prefemora and femora as compared to others, tarsi particularly long and slender (Fig. 6A, C). Tarsal papillae absent. Coxal glands present on male pairs 10 and 11 (Fig. 6B, C), coxa 11 with a peculiar distoventral process.

Gonopods (Fig. 6D-G) rather strongly differing in structure from those observed in other fifteen congeners known to date: unpaired part (v) very strongly reduced to a small, simple, barbed, trapeziform lobe flanked by two robust, elongated and arched processes. Anterior process (a) a little longer, more external, bearing a basal spur (r), slightly denticulate in its distal one third on caudal side. Posterior process (b) arising laterobasally of (v), subdivided distally into arched spinulations. Both processes (a) and (b) apparently closely attached to each other normally, each with an apical hyaline lobe more or less serrate at margin. More basally, process a supplied with a laterobasal tooth (remnant of telopodite) (t), and process b, flanked by a large, well-visible, caudal lobe (u). All these elements placed on a large sternum, frontally carrying a pair of swellings (s) partly masking spurs r of process a.

Paragonopods (Fig. 6H) quite typical for the genus, having two paramedian, membranous processes and two long, arched, lateral arms, but strongly resembling *Bulgarosoma crucis* Strasser, 1960, in having no traces of a telopodital knob (only pigmented spots in its stead), and in the presence both of a hyaline rectangular lamella at its three quaters extent and denticulations on the internal side of its distal one quater extent.

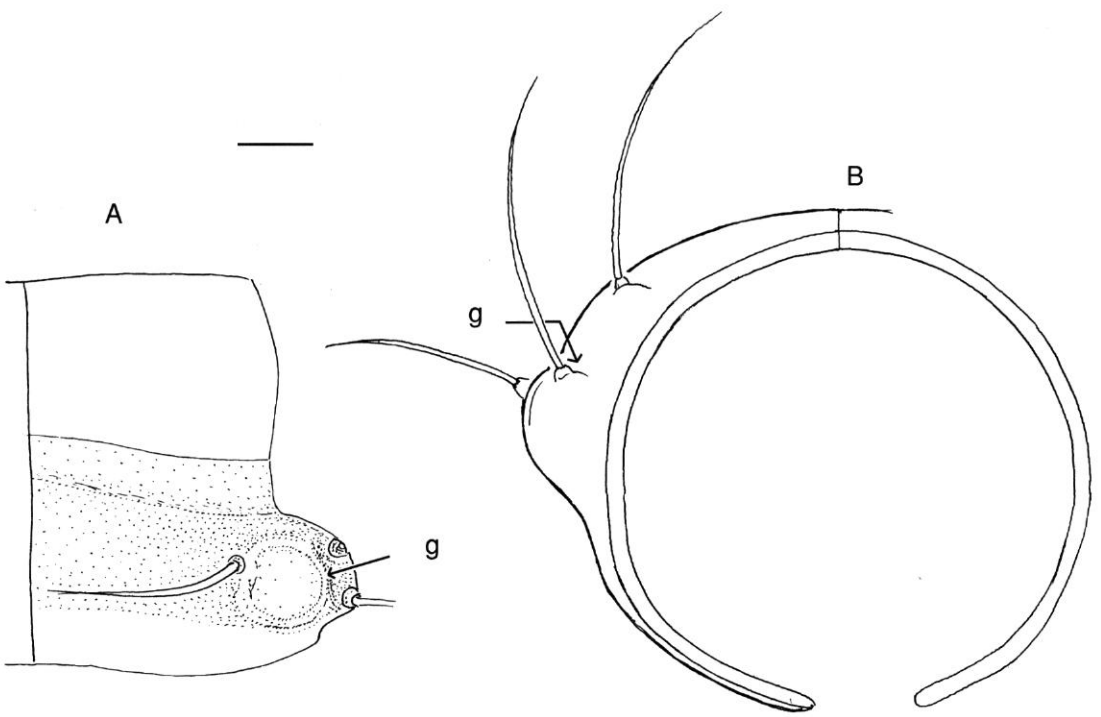
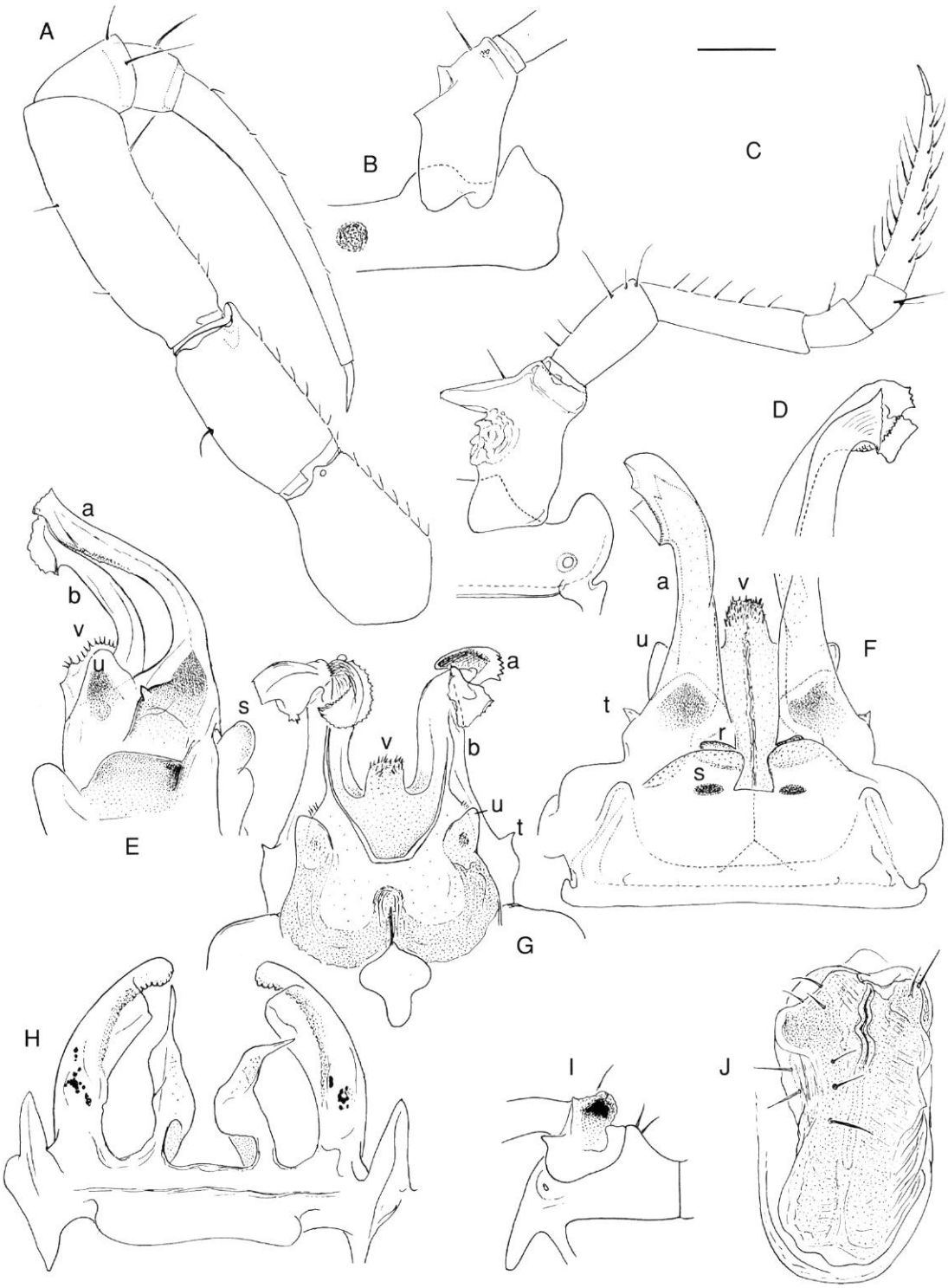


FIG. 5. — *Anamastigona albanensis* n.sp., ♂ holotype, somite 15, **A**, dorsal view; **B**, frontal view. Scale bar : 0.1 mm.


A
B
C
D
E
F
G
H
I
J
a
b
v
u
s
t
r

Female
Coxa 2 (Fig. 6I) with an evident glandular outgrowth distoventrally.
Vulvae of Anthroleucosomatidae *s.l.* have hitherto been illustrated only very seldom (*Persedicus martensi* Mauriès, 1982, from Iran and Talysh Mts, Azerbaijan, and *Haasia largescutatum* (Strasser, 1935), from Slovenia), and never in the genus *Anamastigona*. Figure 6J shows the right vulva of the sole female at hand. Bursa typical for Chordeumatida, *i.e.* strongly elongated, valves symmetrical, pilosity very strongly reduced, with only a few setae sparsely dispersed on external valve and, especially so, only retained anteriorly on internal valve. Ampulla and suture visible mostly anteriorly, outlined by sinuous lips/contours. Operculum poorly emarginate distally.

REMARKS
The Anthroleucosomatidae *s. str.* as we conceive of it, consists of three groups of genera, each group probably warranting the recognition of a separate subfamily. The first is composed of *Alloiopus* Attems, 1951, *Persedicus* Mauriès, 1982, and *Ghilarovia* Gulicka, 1972; the second of *Anthroleucosoma* Verhoeff, 1899, *Heteranthroleucosoma* Ceuca, 1964, and *Dacosoma* Tabacaru, 1968; and the third of *Anamastigona* Silvestri, 1898, *Bulgarosoma* Verhoeff, 1926, *Caucaseuma* Strasser, 1970, *Adshardicus* Golovatch, 1981, and *Ratcheuma* Golovatch, 1985. The latter two Caucasian genera may well prove to be junior synonyms of *Caucaseuma*, but this problem seems better deferred until the extremely rich anthroleucosomatid fauna of the Caucasus is more fully described. On the other hand, the allocation of *Bulgardicus* Strasser, 1960, to this family is doubtful (*cf.* Hoffman 1980).
We here interpret *Anamastigona* in a somewhat broader sense than Hoffman (1980), adding also *Paraprodicus* Verhoeff, 1940, a taxon heretofore considered as a separate genus, to the list of its synonyms or subgenera (together with *Antrodicus* Gulicka, 1967, *Balkandicus* Strasser, 1960, *Hellasdicus* Verhoeff, 1940 and *Osmandicus* Strasser, 1960).

FIG. 6. — *Anamastigona albanensis* n.sp., ♂ holotype (A-H) and ♀ paratype (I-J): **A**, leg 7; **B**, coxa 10, caudal view; **C**, leg 11, caudal view; **D-G**, gonopods (P.8), mesocaudal (of anterior and posterior processes), lateral, oral, caudal views, respectively; **H**, paragonopods (P.9), oral view; **I**, ♀ coxa 2; **J**, vulva, ventral view. Scale bar: 0.1 mm.

Anamastigona (?) sp.

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1000-1100 m, 5-9.VI.1993, 1 juv. ♀ (28 segm.) (NHMS), leg. P. Beron & B. Petrov (No. 581).
Tirana District. Mt. Dajti, *c.*20 km NE of Tirana, 1000 m, *Fagus*, *Acer*, etc. forest, leaf litter and under bark, 9.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS
In the absence of adult male, this material could not be identified to species. Even its generic attribution of the juvenile is doubtful, while the female seems to represent *albanensis*.

Melogona broelemanni Verhoeff, 1897

MATERIAL EXAMINED. — **Tirana District.** Mt. Dajti, *c.*20 km NE of Tirana, 1000 m, *Fagus*, *Acer*, etc. forest, leaf litter and under bark, 9.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS
This Balkan-Carpathian species has already been reported from Albania (Attems 1929).

Chordeumatida gen.sp.?

MATERIAL EXAMINED. — **Shkodër District.** Bogë, upper camp, 1900 m, 22.V.1993, 1 juv. ♂ (28 segm.) (NHMS), leg. P. Beron. — Same locality, cave No. 25, 23.V.1993, 8 ♀♀, 3 juv. (NHMS), leg. P. Beron & B. Petrov (No. 577).

REMARKS
In the absence of adult males, this large, depigmented, probably troglobitic species could not even be identified to family. Apparently, it represents a new anthroleucosomatid genus and species still to be described from already available males deriving from the same area (W. A. Shear, pers. comm.).

Order POLYDESMIDA Leach, 1815
Family POLYDESMIDAE Leach, 1815

Brachydesmus herzogowinensis Verhoeff, 1897

MATERIAL EXAMINED. — **Leskoviku District.** Cave on the road Permet-Leskoviku, 5 km before Leskoviku, 900 m, 12.V.1995, 1 ♂, 4 ♀♀, 40 juv. (NHMS), 1 ♂, 1 ♀, 10 juv. (MNHN, Collection Myriapodes JC 296), 1 ♂, 2 ♀♀, 10 juv. (ZMUM), leg. P. Stoev & B. Petrov.

REMARKS
Somewhat misspelt since its original description, either as *hercegovinensis* or as *herzegowinensis*, this species has hitherto been reported from Albania, Montenegro and Cherso (see Attems 1959). However, as the earlier record by Attems (1929) referred to Hercegovina and Montenegro (see also Strasser 1976), the above is the first confirmed discovery of *B. herzogowinensis* in Albania proper. Numerous "subspecies" of *herzogowinensis*, the validity of which is highly doubtful, have since been described, notably from Bulgaria, Serbia, Croatia and Slovenia. Hence the range of this species covers much of the Balkan Peninsula.

Brachydesmus (?) sp.

MATERIAL EXAMINED. — **Sarandë District.** Ionian coast, Borsh, under stones, 5.V.1994, 3 juv. ♂♂ (subadults, 18 segm.) (NHMS), leg. P. Stoev.
Shkodër District. Bogë, 1000-1100 m, 5-9.VI.1993, 1 juv. ♂ (18 segm.) (NHMS), leg. P. Beron & B. Petrov (No. 581). — Alpet Mt. Rhadohimës, 2200-2400 m, 29.V.1993, 2 ♀♀ (19 segm.) (NHMS), leg. P. Beron (No. 599).

REMARKS
In the absence of adult male, no closer identification could be possible.

Polydesmus herzogowinensis Verhoeff, 1897

MATERIAL EXAMINED. — **Shkodër District.** Bogë, Maya Tchardakut, 1200-1400 m, 1.VI.1993, 1 ♀ (NHMS), leg. P. Beron.
Leskoviku District. 5 km from Leskoviku, 1.VI.1994, 1 ♂ (NHMS), leg. P. Tenchev.

REMARKS
This Balkan species has already been recorded in Albania (Attems 1929), yet almost always misspelt since the original description (Verhoeff 1897), mostly either as *hercegovinensis* or *herzegowinensis*. Also, there might be a nomenclatorial problem if *Brachydesmus* is formally treated as a subgenus of *Polydesmus* (*e.g.* Hoffman 1980), because in the same paper, Verhoeff (1897) also described a *Brachydesmus herzogowinensis* (see above). If merged under a single genus, one of these species would have to be renamed to avoid homonymy and conform to the rules of priority. For the time being, however, we prefer to keep both names concerned in separate genera.

Polydesmus mediterraneus oertzeni Verhoeff, 1901

MATERIAL EXAMINED. — **Tirana District.** Tirana, Botanical Gardens, 8.V.1995, 1 ♂ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS
This east Mediterranean subspecies ranges from the Balkan Peninsula in the west to the Crimea, W Caucasus and W Anatolia in the east, and seems to have already been recorded in Albania sub *mediterraneus* Daday, 1890 (Manfredi 1945).

Polydesmus (?) sp.

MATERIAL EXAMINED. — **Shkodër District.** Above Bogë, 1500 m, 18.VI.1994, 1 juv. ♀ (NHMS), leg. T. Troanski.
Sarandë District. Ionian coast, Dhërmi, under stones, 2.V.1994, 2 juv. (NHMS), leg. P. Stoev.

REMARKS
In the absence of adults, it has been impossible to determine these samples to species.

POLYDESMIDAE gen. sp.

MATERIAL EXAMINED. — **Sarandë District.** Ionian coast, Dhërmi, 100 m, leaf litter, 11.V.1995, 5 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Librazhd District. Between Hotolisht and Librazdh, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 1 ♀ (20 segm.) (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS
In the absence of adult males, it has been impossible to identify these samples to species or even genus.

Family PARADOXOSOMATIDAE Daday, 1889

Metonomastus petrelensis n.sp.
(Fig. 7)

MATERIAL EXAMINED. — **Tirana District.** Petrela, *c.*15 km SE of Tirana, 300 m, artificial galleries near road, 9.V.1995, holotype ♂ (NHMS), leg. P. Stoev & B. Petrov; paratypes together with holotype: 6 ♀♀ (NHMS), 1 ♂, 2 ♀♀ (MNHN, Collection Myriapodes JA 123), 1 ♂, 2 ♀♀ (ZMUM).

ETYMOLOGY. — Name derived from Petrela, the type locality.

DIAGNOSIS
Differs from congeners by the gonopods consisting of two long, slender, subequal branches, of which the solenomerite is unciform apically, and the tibiotarsus is particularly simple (see also key below).

DESCRIPTION
Body with nineteen segments in both sexes. Female considerably larger than male. Length of male 5.65 mm (holotype), of females 6.90-7.85 mm; female dimensions as follows: length 7.80 mm, width of head 0.70 mm, length of antennae 1.25 mm, width of collum 0.52 mm, width of somite 10 0.70 mm on metazonite, 0.65 mm on prozonite.

Habitus usual for the genus, body pallid throughout, slender and moniliform. Pore formula normal (5.7.9.10.12.13-17).

Head globular, a little broader than metaterga (0.60 mm in holotype), covered with sparse, unequal setae. Antennae medium-sized (1.2 mm in holotype), length ratios of antennomeres 3 > 2 = 6 > 5 = 4 < 7 > > 8, the sixth being widest, subcylindrical and 1.5 times as long as

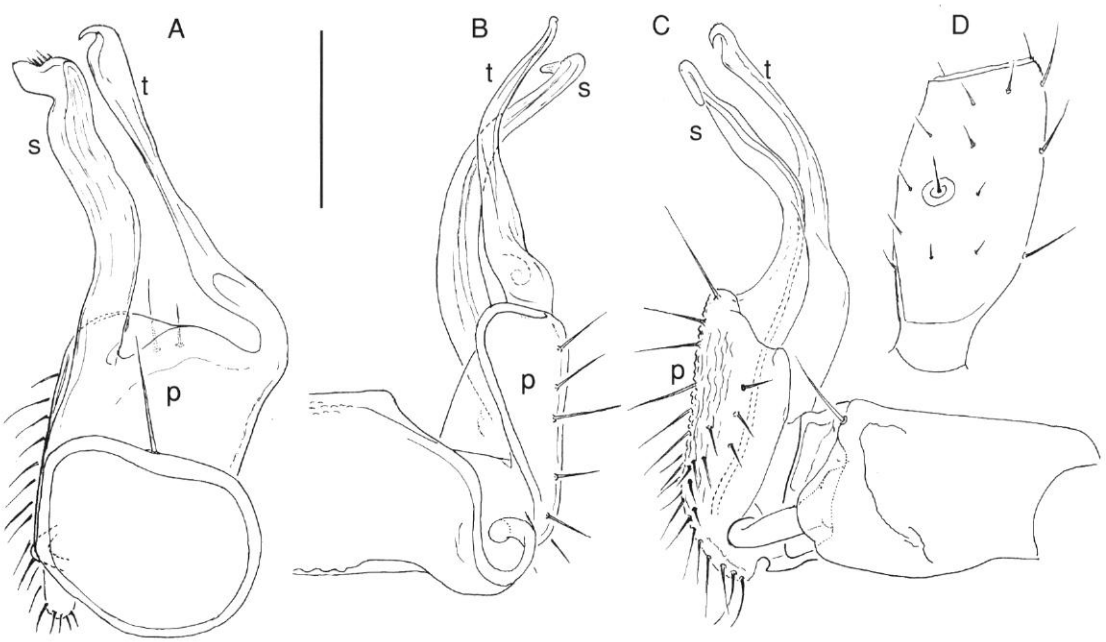


FIG. 7. — *Metonomastus petrelensis* n.sp., ♂ holotype: **A-C**, right gonopod, oral, lateral, and mesal views, respectively; **D**, femur 4, ventral view. Scale bar: 0.1 mm.

wide; antennomeres 2, 3 and 4 distinctly claviform. Collum a little narrower, 0.45 mm in width.

Metaterga (width 0.55 mm in holotype) with surface very delicately shagreened. Paraterga poorly developed, lateral margin regularly arched in dorsal view, always with three setae; dorsal surface convex, with moderate pilosity arranged in two rows, both consisting of 4 + 4 thin and short setae (paratergal setae included). An incomplete row, comprising 1 + 1 or 2 + 2 similar setae laterally, also located a little in front of marginal row. Ozopores placed at posterior angle of paraterga. Telson as usual for the genus.

Pregonopodal legs without particulars, except femur 4 with a trichobothrium-like seta on ventral side (Fig. 7D).

Gonopods (Fig. 7A-C) relatively slender, suberect. Prefemur a subquadrate plate (in oral or caudal view), flattened, oral surface setose. Postfemoral region consisting of only two branches, both simple, slender and arched: solenomerite (s), mesal in position, indistinctly sinuous and spinulose distally, a little more robust and shorter than the particularly slender, apically unciform tibiotarsal branch (t) proper.

REMARKS

The genus *Metonomastus* Attems, 1937 (= *Microdesmus* Verhoeff, 1901, *nom. praeoccup.*, see Jeekel 1970), has hitherto been known to comprise nine species or subspecies scattered from (mainly) Italy in the west to Anatolia in the east. Only a few appear to be cavernicolous, *petrelensis* obviously being one of these. Long reported also from Bosnia and Hercegovina, as well as from Greece, this genus is here recorded in Albania for the first time.

GONOPOD-BASED KEY TO DISTINGUISH *petrelensis* FROM ITS RELATIVES

1. Gonopod prefemur suboval and considerably shorter than postfemoral elements ..... *M. albus* (Verhoeff, 1901): Bosnia and Hercegovina

— Prefemur subquadrate and about as long as postfemoral elements 2

2. Three postfemoral elements ..... *M. strasseri* Hoffman *et* Lohmander, 1968: Turkey
..... *M. strasseri atticus* Strasser, 1974: Greece

— Two postfemoral elements 3

3. Postfemoral elements of two subequal, slender and sinuate branches .....
..... *M. petrelensis*: cave in Albania

— Postfemoral elements stouter, not equal in length/width .....
..... *M. hirtellus* (Silvestri, 1903): Umbria (Italy)
..... *M. capreae* (Verhoeff, 1942): Capri (Italy)
..... *M. patrizii* Manfredi, 1950: cave in Umbria (Italy)
..... *M. romanus* (Verhoeff, 1951): Latium (Italy)
..... *M. mariae* (Strasser, 1965): cave in Abbruzzi Mts (Italy)

The male of *M. bosniensis* (Verhoeff, 1901), is unknown.

Microdesminus saetosus Strasser, 1960, from Italy, differs readily from *Metonomastus* by its abundant tergal pilosity and gonopod structure, the latter, due to two unequal branches of the tibiotarsus, resembling certain *Polydesmus*.

Order JULIDA Leach, 1815
Family BLANIULIDAE C. L. Koch, 1847

Nopoiulus kochii (Gervais, 1847)

MATERIAL EXAMINED. — **Lushnja District.** Divjaka Natural Park, *Pinus halepensis* and *P. pinea* strand forest, litter and under stones, 10.V.1995, 4 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS
This ubiquitous anthropochore has long been reported from Albania (Attems 1959), though without exact provenance.

Family JULIDAE Leach, 1815

Leptoiulus macedonicus (Attems, 1927)

MATERIAL EXAMINED. — **Shkodër District.** Above Bogë, Alpet Mt. Rhadohimës, 2400-2550 m, 29.V.1993, 1 ♂ (NHMS), leg. P. Beron.
Tirana District. Mt. Dajti, *c.*20 km NE of Tirana, 1000 m, *Fagus, Acer*, etc. forest, litter and under stones, 9.V.1995, 1 ♂ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS
This species has hitherto been known only from Macedonia (Attems 1927, 1929), the above being the first definite record of *macedonicus* in Albania. Strasser (1976) also reported it from Albania, yet mentioning no relevant material.

Leptoiulus trilineatus (C. L. Koch, 1847)

MATERIAL EXAMINED. — **Librazhd District.** Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 2 juv. ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Above Prenjas, 750 m, scrub on slope, 7.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Tirana District. Mt. Dajti, *c.*20 km NE of Tirana, 1000 m, *Fagus, Acer,* etc. forest, leaf litter and under stones, 8.V.1995, 1 ♂, 2 juv. ♂♂, 1 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Lushnja District. Divjaka Natural Park, *Pinus halepensis* and *P. pinea* strand forest, 10.V.1995, 24 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Vlorë District. Near Dukati, 450 m, leaf litter, 11.V.1995, 2 ♂♂, 14 ♀♀, 34 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Sarandë District. Ionian coast, Dhërmi, under stones, 2.V.1994, 1 ♀ (NHMS), leg. P. Stoev. — Same locality, 100 m, leaf litter, 11.V.1995, 1 ♀, 1 juv. ♂, 21 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Leskovik District. 5 km from Leskovik, 1.VI.1994, 1 ♂ (NHMS), leg. P. Tenchev.

REMARKS
This Alpine-Balkan-Carpathian (*s.l.*) species has long been reported from Albania (Attems 1929), where it appears to be quite common.

Leptoiulus sp.

MATERIAL EXAMINED. — **Shkodër District.** Bogë, Maya Tchardakut, 1200-1600 m, 1.VI.1993, 2 ♀♀, 2 juv. ♂♂, 3 juv. ♀♀ (NHMS), leg. P. Beron. — Above Bogë, Alpet Mt. Rhadohimës, 2400-2550 m, 29.V.1993, 1 ♀ (NHMS), leg. P. Beron (No. 578).

REMARKS
In the absence of adult males, these samples could not be identified to species.

Typhloiulus beroni n.sp.
(Fig. 8)

MATERIAL EXAMINED. — **Korçë District.** Pustec (Liqena), artificial gallery, 5.X.1994, holotype ♂ (NHMS), leg. P. Beron; paratypes together with holotype: 2 ♂♂, 2 ♀♀, 1 juv. ♀, 1 juv. (NHMS), 2 ♂♂ (MNHN, Collection Myriapodes EB 070), 2 ♂♂ (ZMUM).

ETYMOLOGY. — Name honours Dr. Petar Beron, who collected this (and many other) species.

DIAGNOSIS
Differs from congeners by a peculiar combination of non-modified mouthparts, unciform epiproct, and certain details of gonopod structure (see also remarks below).

DESCRIPTION
Body of adults with forty-five (four apodous) to fifty-five (two apodous) segments, excluding telson, in male, and fifty-two (two apodous) and fifty-five (two apodous) segments, excluding telson, in females. The largest juvenile female with forty-six (five apodous) segments, excluding telson. Holotype with fifty-three (three apodous) segments, excluding telson. Length usually 25-26 mm regardless of the sex, rarely from

*c.*20 mm (male with forty-five segments) up to *c.*29 mm (male with fifty-five segments). Midbody width usually 1.0 mm, height 1.5 mm in males (including holotype), 1.3 and 1.7 mm, respectively, in females; body therefore slender and considerably compressed laterally. Coloration in alcohol from pallid grey-yellow-pinkish to dark brownish-bronzed.

Head without particulars except for eye patches pallid and scarcely discernible due to faint rugosity, labrum with usual three large median teeth, vertigial setae 1 + 1, supralabral ones 2 + 2, labral ones 8 + 8. Antennae (Fig. 8A) always pallid, slender, rather long, *in situ* almost reaching the end of somite 4 (male) or 3 (female, juv.), antennomeres 5-6 each with a terminal corolla of more (fifth) or less (sixth) large, bacilliform sensillae. Gnathochilarium (Fig. 8B) without peculiarities, male cheeks not enlarged.

Collum with large, rounded, striated flaps laterally, bare dorsally, with 5 + 5 long setae near caudal margin. Postcollar constriction very poorly developed, subsequent segments with equally long tergal setae tending to increase in length dorsally (*c.*1/8-1/9 as long as midbody height) and in number caudally, first also 5 + 5 and then gradually up to 15-16 + 15-16 on caudalmost somites. Body surface almost dull; prozona very delicately, sparsely and obliquely striate laterally, bare dorsally; metazona strongly, rather regularly and relatively densely striate longitudinally all over their circumference, *ca.* four striae in a conventional square with side equal to metazonital length just below ozopore. Suture between prozona and metazona thin but evident, constriction weak. Ozopores rather distinct, lying behind, quite close to yet not touching the suture. Telson especially densely setose, epiproct characteristically unciform distoventrad (Fig. 8C), anal valves very faintly margined caudally, subanal scale subtriangular.

Male pleurotergum 7 (Fig. 8D) with a distinct, almost pointed, distomarginal tooth directed somewhat obliquely caudally. Legs long, slender, a little over one half as long as midbody height; claws characteristically long, slightly curved, with a minute ventrobasal tooth. Male legpair 1 (Fig. 8E) as usual reduced, unciform, setose; pair 2 (Fig. 8F) with fused coxae and peculiar ventral pads on postfemora and tibiae; pads on subsequent male postfemora tending to rapidly disappear already toward several postgonopodal legpairs; pads on male tibiae gradually disappearing only towards caudal one third of body. Penes behind male legpair 2 without peculiarities, slender, clearly bifid.

Gonopods (Fig. 8G) relatively slender, with both meso- and, especially, promerite only slightly shorter than opisthomerite. Promerite (pr) spatulate, about 4 times as long as broad, slightly concave and tuberculate-rugose in distal two thirds for accomodation of an anterodistally convex and similarly tuberculate-rugose mesomerite (m), with a long, normal flagellum at base; parabasal internal lobe (i) well-expressed, with three strong setae; parabasal external lobe (= remnant of telopodite) (e) subovoid, somewhat smaller in size than i. Opisthomerite (op) with subequal, relatively small, velum (ve) and solenomerite, former supplied with a frontal, subapical, flagellar outgrowth, which is delicately barbed apically and carries an additional, anterodistal, hyaline, median lamella.

REMARKS

The type series contains a peculiar, obviously abnormal male (now in MNHN) which has not one but two pairs of gonopods placed - judged from the typically shaped pleuroterga - inside two, superficially normal, somites 7 and 8. The specimen was left intact, non-dissected, and not examined for further teratological details.

The prolific "tribe" Typhloiulini is currently divided into two main subgroups, one possessing a flagellum on the promerite (male P.8), and the other one lacking it. The former subgroup encompasses *Typhloiulus* Latzel, 1884 (with a good number of subgenera), *Leptotyphloiulus* Verhoeff, 1899, *Alpityphlus* Strasser, 1967, *Buchneria* Verhoeff, 1941, and *Mesoporoiulus* Verhoeff, 1905, while the latter group the genera *Trogloiulus* Manfredi, 1931, and *Serboiulus* Strasser, 1962. Generally, they range from the Maritime Alps, SE France and Italy in the west to the Carpathian Mts in the east, centering in and slightly north of the Balkan Peninsula.

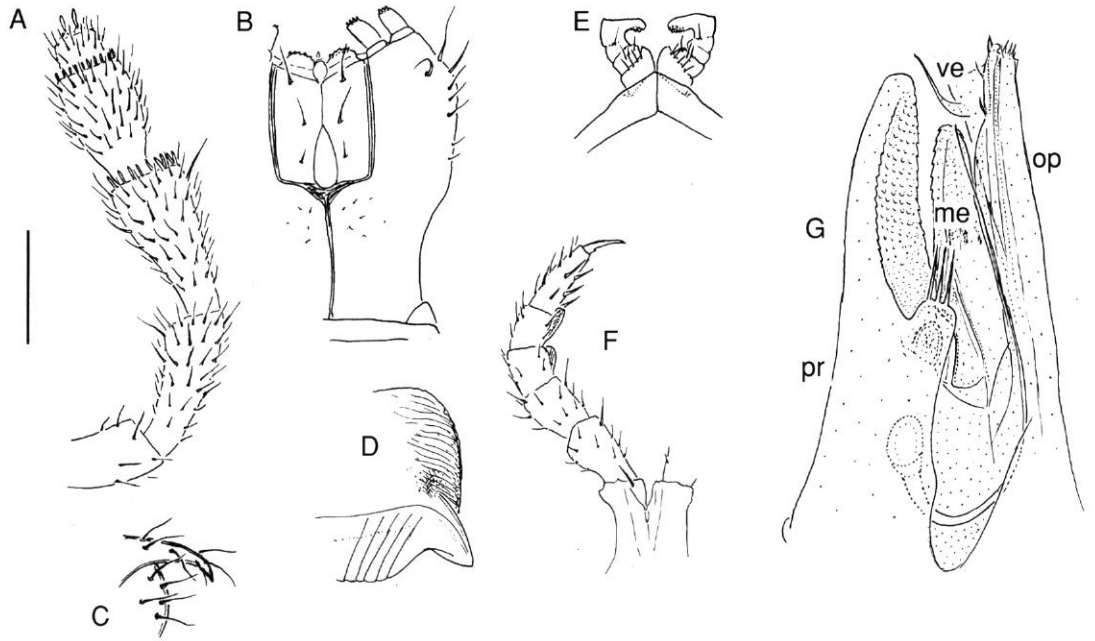


FIG. 8. — *Typhloiulus beroni* n.sp., ♂ paratype: **A**, antenna; **B**, gnathochilarium; **C**, epiproct, lateral view (drawn not to scale); **D**, pleurotergite 7; **E**, legpair 1, oral view; **F**, leg 2, oral view; **G**, gonopod complex, mesal view. Scale bar: 0.2 mm (A-F) and 0.1 mm (G).

Several typhloiuline species are troglobionts, others are largely presumed petro- and/or geophiles, hence virtually all are eyeless, mostly more or less strongly pallid, often long-legged, and sometimes have strongly modified mouthparts. However, all these characters are basically highly adaptive, reflecting the mode of life rather than common ancestry. For this reason alone, the Typhloiulini is highly suspicious as a taxon, this fact having long been acknowledged in the literature (*e.g.* Strasser 1962; Hoffman 1980).

As usual in diplopod systematics, it is gonopod structure that appears most instructive in unravelling the real phylogenetic relations between the consituent typhoiuline species and genera as well as of the Typhloiulini as a whole with other tribes. Basically, there are no apomorphies whatever in typhloiulines which would distinguish them from the sympatric yet somewhat more widely distributed, Euro-Mediterranean tribe Leptoiulini. Indeed, the entire variation range of typhloiuline gonopod structure (presence/absence of a flagellum, promerite shorter/longer vis-à-vis meso- and/or opisthomerite, degree of development of a velum, etc.) definitely lies within that of the leptoiulines. So we must simply admit the existence within the single (very large, but really natural) tribe Leptoiulini of rather numerous, often apparently polyphyletic representatives displaying clear-cut adaptations to troglo-, petro- and/or geophily. In other words, we are inclined to formally abandon the Typhloiulini and to suppress it under the Leptoiulini (*cf.* Strasser 1962; Hoffman 1980).

The genus *Typhloiulus* Latzel, 1884, has hitherto been known to comprise thirty-four described (and a few still undescribed) species or subspecies (several based solely on females) ranging from Italy in the west to Rumania and Bulgaria in the east. Its subgenera *Typhloiulus* s. str. (= *Xestotyphloiulus* Verhoeff, 1899, = *Smeringolophus* Attems, 1959), *Stygiiulus* Verhoeff, 1929, *Attemsotyphlus* Strasser, 1962, *Haploprotopus* Verhoeff, 1899, *Spelaeoblaniulus* Ceuca, 1956 (= *Spelaeoiulus* Strasser, 1962), *Inversotyphlus* Strasser, 1962, as well as the particularly closely

allied *Leptotyphloiulus*, *Alpityphlus*, *Buchneria* and *Mesoporoiulus* are distinguished almost solely by some relatively minor details of gonopod structure: length of pro- or mesomerite in relation to opisthomerite, degree of development of a velum and a few other outgrowths on the opisthomerite, degree of curvature of the opisthomerite, etc. Unique non-gonopodal or gonopod characters are very few (*e.g.*, the leg-like male P.1 in *Haploprotopus*, or the particularly slender meso- and opisthomerite in *Buchneria*), and each such case has resulted in mono- to oligotypy. The borders between all these taxa are almost always far from clear-cut, being likely to disappear with the description of next new typhloiuline species based on males. That many species await discovery/description is beyond doubt.

This statement appears well justified by the above new Albanian *Typhloiulus*. This form comes closest to a whole number of species, many of which have hitherto been allocated in different (sub)genera. Indeed, due to its relatively slender pro- and mesomerite, *T. beroni* approaches certain *Stygiiulus* (e.g. *Typhoiulus ausugi* Manfredi, 1953 and *T. maximus* Verhoeff, 1930), *Attemsotyphlus* (e.g. *T. edentulus* Attems, 1959), *Haploprotopus* (e.g. *T. ganglbaueri* (Verhoeff, 1898)), *Spelaeoblaniulus* (e.g. *T. serbani unilineatus* Ceuca, 1961), *Inversotyphlus* (e.g. *T. longipes* Strasser, 1974), *Alpityphlus* (e.g. *T. seewaldi* Strasser, 1967), as well as *Buchneria cornuta* Verhoeff, 1941, *B. sicula* Strasser, 1959, etc. However, it differs readily by a peculiar combination of the non-modified mouthparts, unciform epiproct, large and setose inner lobe of the straight promerite, small but evident velum supporting a front flagelliform outgrowth, distally barbed, caudally unarmed opisthomerite, etc.

In other words, the entire (sub)generic classification of typhloiuline Leptoiulini seems completely out of date (*cf.* Strasser 1962), requiring a thorough revision. However, such a challenge is best left for the future, when (presumably numerous) new and still poorly known species become adequately documented. Some species assemblages may well prove natural, monophyletic (e.g. *Trogloiulus*, see Enghoff 1985), but most others seem highly heterogeneous at present (*cf.* Hoffman 1980).

Cylindroiulus boleti (C. L. Koch, 1847)

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1000-1100 m, 5-9.VI.1993, 1 ♂ (NHMS), 1 ♂, 1 ♀ (MNHN, Collection Myriapodes EB 036), leg. P. Beron & B. Petrov.
Librazhd District. Between Hotolisht and Librazhd, 100 m, scrub, gravel, under stones and bark, 7.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS
This species has hitherto been known mainly from the Alps, Balkans, and Carpathians, with the adjacent foothills and plains of Italy, Austria, Hungary, Rumania, Bulgaria and Moldavia. It has already been recorded in Albania (Attems 1927, 1929), which probably represents the southern range limit.

Brachyiulus apfelbeckii Verhoeff, 1898

MATERIAL EXAMINED. — **Tirana District.** Tirana, Botanical Gardens, under stones, 8.V.1995, 1 ♂ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Vlorë District. Vlorë, *Olea europaea* forest, under stones, 1.V.1994, 1 ♂ (MNHN, Collection Myriapodes EB 300), leg. P. Stoev & D. Zaprianova.

REMARKS
This Balkan species has hitherto been reported only from Bosnia and Hercegovina, Montenegro, N Greece and Bulgaria, so this new record in Albania is hardly surprising.

Brachyiulus varibolinus Attems, 1904

Brachyiulus beratinus Manfredi, 1945, syn. n.

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1008 m, 3-4.VI.1993, 1 ♂, 1 ♀ (NHMS), 1 ♂ (MNHN, Collection Myriapodes EB 326), 1 ♂ (ZMUM), leg. P. Beron & B. Petrov.

REMARKS
With the material at hand, a direct comparison between the very crude drawings of gonopod structure presented by Manfredi (1945) for her *B. beratinus* (described from Berati, S Albania) and the good illustration of a topotype of *B. varibolinus* given by Strasser (1976), leaves no doubt that we face the same creature, hence the

new synonymy. Although *varibolinus* has been reported only from Epirus, N Greece and Albania, the record from Bogë, in the extreme north of Albania, might be evidence of a wider distribution in the Balkan region. It seems opportune to recall that most *Brachyiulus* species are currently quite widespread to ubiquitous, partly through human agency.

Brachyiulus sp. indet.

MATERIAL EXAMINED. — **Librazhd District.** Above Prenjas, 750 m, scrub on slope, under stones and bark, 7.V.1995, 2 ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS

Regrettably, in the absence of male, these specimens could not be identified to species, although, judging from their relatively large size, they all probably belong to *apfelbeckii*.

Megaphyllum bosniense (Verhoeff, 1897)

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1000-1100 m, 5-9.VI.1993, 1 ♂, 12 ♀♀, 1 juv. ♂, 2 juv. (NHMS), leg. P. Beron & B. Petrov. — Bogë, Maya Tchardakut, 1200-1400 m, 1.VI.1993, 2 ♂♂, 1 ♀ (NHMS), leg. P. Beron. — Above Bogë, 1800-1900 m, pitfall trapping, 20-23.V.1993, 2 ♂♂ (NHMS), leg. P. Beron & B. Petrov. — Theth, 800-900 m, 28.V.1993, 1 ♀ (NHMS), 1 ♂, 1 ♀ (ZMUM), leg. P. Beron.
Librazhd District. Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones & bark, 7.05.1995, 2 ♀♀, 29 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Above Prenjas, 750 m, scrub on slope, 7.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Cafa-San at border of Macedonia, 1150 m, under stones, 13.V.1993, 1 ♀ (NHMS), leg. P. Stoev.
Tirana District. Mt. Dajti, *c.*20 km NE of Tirana, 1000 m, *Fagus, Acer*, etc. forest, leaf litter, under stones and bark, 9.V.1995, 1 ♂, 1 ♀ (MNHN, Collection Myriapodes EB 037), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS

This Balkan (*s.l.*) species seems rather common in Albania, whence it has long been recorded (Attems 1927, 1929).

Megaphyllum hercules (Verhoeff, 1901)

MATERIAL EXAMINED. — **Vlorë District.** 4 km S of Vlorë, under stones, 1.V.1994, 1 juv. ♂ (NHMS), leg. P. Stoev. — Pass Llogorasë, 1025 m, badly deteriorated *Pinus* stand, under stones, 12.V.1995, 1 ♂, 1 ♀, 13 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Librazhd District. Above Prenjas, 750 m, scrub on slope, 7.V.1995, 1 ♀ (MNHN, Collection Myriapodes EB 122), 4 juv. ♂♂, 2 juv. ♀♀, 1 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Leskovik District. 1 ♀ (NHMS), 13 km N of Ersekë, near road, leaf litter, 12.V.1995, leg. S. Golovatch, P. Stoev & B. Petrov.
Korçë District. Komnik (= Kamenice), under stones, 7.V.1994, 1 ♀, 1 juv. (NHMS), leg. P. Stoev.

REMARKS

This Balkan (*s.l.*) species also seems to be rather common in Albania, whence it has long been recorded (Attems 1929; Manfredi 1945).

Megaphyllum imbecillum (Latzel, 1884)

MATERIAL EXAMINED. — **Leskovik District.** *c.*13 km N of Ersekë, near road, leaf litter, 12.V.1995, 1 ♂, 1 ♀ (NHMS), 1 ♂ (MNHN, Collection Myriapodes EB 131), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS

Several varieties of this species are known (Strasser 1976), all confined to Epirus, N Greece. New to Albania.

Megaphyllum karschi (Verhoeff, 1901)

MATERIAL EXAMINED. — **Vlorë District.** Albania, near Dukati, 450 m, leaf litter, 11.V.1995, 1 ♂ (NHMS), 1 ♂ (MNHN, Collection Myriapodes EB 341), leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS

As far as we are aware, this obviously rare Albanian endemic species has never been recovered since its original description (Verhoeff 1901). The new sample at hand can be regarded as topotypic, as it too originates from the vicinity of Vlorë (= Aulona, = Valona).

Megaphyllum sp.

MATERIAL EXAMINED. — **Shkodër District.** Bogë, Maya Tchardakut, 1600-1800 m, 1.VI.1993, 1 ♀, 1 juv. (NHMS), leg. P. Beron. — Same locality, 1800-1900, pitfall trapping, 20-23.V.1993, 1 ♀, 2 juv. ♀♀ (NHMS), leg. P. Beron & P. Stoev.
Tirana District. Tirana, Botanical Gardens, under stones, 8.V.1995, 2 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Gjirokaster District. Gjirokaster, castle, under stones, 6.V.1994, 2 ♀♀, 2 juv. ♀ (NHMS), leg. P. Stoev.

REMARKS
In the absence of adult male, these samples could not be identified to species.

Acanthoiulus fuscipes (C. L. Koch, 1847) (Fig. 9)

Julus idriensis C. L. Koch, 1847,
Julus dalmaticus C. L. Koch, 1847,
Iulus fuscipes var. *leuconotus* Latzel, 1884,
Iulus fuscipes var. *subcrassus* Latzel, 1884,
Pachyiulus bosniensis Verhoeff, 1895, syn. n.
Pachyiulus fuscipes var. *krohnii* Verhoeff, 1898,
Pachyiulus fuscipes altivagus Verhoeff, 1899, syn. n.
Pachyiulus fuscipes plasensis Verhoeff, 1910, syn. n.
Pachyiulus fuscipes simplex Verhoeff, 1910, syn. n.

MATERIAL EXAMINED. — **Shkodër District.** Theth, 800-900 m, 28.V.1993, 1 ♂(α), 1 ♀ (NHMS), leg. P. Beron (No. 561). — Above Bogë, Maya Tchardakut, 1600-1800 m, 2.VI.1993, 1 ♂(β) (NHMS), leg. P. Beron. — Same locality, 1.VI.1993, 2 ♂♂(β), 1 ♀ (NHMS), leg. P. Beron. — Bogë, 1000-1100 m, 3-9.VI.1993, 1 ♂(α), 6 ♀♀ (NHMS), 1 ♂(α) (MNHN, Collection Myriapodes EB 103), 1 ♂(α) (ZMUM), leg. P. Beron & B. Petrov (No. 569). — Above Bogë, 1800-1900 m, 20-23.V.1993, 1 juv. (NHMS), leg. P. Beron & B. Petrov. — Same locality, 1300 m, Maya Bridashit, 20.V.1993, 1 juv. ♂, 1 ♀ (NHMS), leg. P. Beron & B. Petrov (No. 593). — Same data, 5-9.VI.1993, 1 ♂(α) (NHMS), leg. P. Beron & B. Petrov (No. 566), 2 ♂♂(1α, 1β), 3 ♀♀, 1 juv. (NHMS), leg. P. Beron (NB: these males display somewhat different gonopods, and especially striking differences lie in coloration, one with pale legs and somites, the other with bichromous somites - pale dorsally, dark ventrally - and dark legs). — Same locality, upper camp, 1800-1900 m, 20-23.VI.1993, 5 ♂♂(β), 1 ♀ (NHMS), 1 ♂(β) (MNHN, Collection Myriapodes EB 103), 1 ♂(β) (ZMUM), leg. P. Beron & B. Petrov (No. 558). — Same data, pitfall trapping, 20-23.VI.1993, 3 ♂♂ (NHMS), leg. P. Beron & B. Petrov (NB: mesomerite not pointed, promerite with a rounded distal margin carrying a simple tooth). — Alpet Mt. Rhadohimës, 2200-2400 m, 29.V.1993, 2 ♂♂(2α,1β), 1 ♀ (NHMS), leg. P. Beron (No. 594) (NB: the male β is paler than others).
Librazhd District. Near Librazhd, 1.X.1994, 1 ♂(α), 1 ♀, 3 juv. (NHMS), P. Stoev. — Above Prenjas, 750 m, scrub on slope, 7.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 1 ♂, 1 ♀, 2 juv. ♂♂, 6 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Tirana District. Petrela, 15 km SE of Tirana, 350 m, under stones, ruins, scrub, 9.V.1995, 5 ♂♂(γ), 7 ♀♀, 2 juv. ♀, 10 juv. (NHMS), 1 ♂(γ) (MNHN, Collection Myriapodes EB 103), 1 ♂(γ) (ZMUM), leg. S. Golovatch, P. Stoev & B. Petrov. — Same locality, 300 m, artificial galleries near road, 9.V.1995, 1 ♀ (NHMS), leg. P. Stoev & B. Petrov.
Lushnja District. Divjaka Natural Park, *Pinus halepensis* and *P. pinea* strand forest, 10.V.1995, 8 ♀♀, 2 juv. ♂♂ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Rrëshen District. Kurbnesh, cave with ladder, 11.VI.1993, 1 ♀ (NHMS), leg. P. Beron & B. Petrov (No. 570). — Merkurth, under stones, 11.VI.1993, 1 ♀ (NHMS), leg. P. Beron & B. Petrov.

REMARKS
This is obviously the most common and abundant member of the tribe Pachyiulini in the material at hand. Almost all samples are from the north of Albania, and all are more or less grey in colour, sometimes with the middle of the dorsum paler, sometimes with the metazona more strongly brown. In contrast, the legs vary considerably in colour, from pale yellowish to dark brown via red-brown. The epiproct is always present, but its length varies, being mostly a little longer in males than in females.
Two samples from two different, but adjacent, localities deserve special mention. Both contain particularly pale male in which the gonopod structure also appears to be somewhat different from the remaining samples. What seems especially important in this context is that the differences concern the shape of the promerite (P.8), notably of the distomesal outgrowth (Fig. 9C, D, H, I, K-P, d), which has hitherto been considered as one of the basic characters for the discrimination of pachyiuline genera and species. Superficially, using the traditional approaches of

Verhoeff (1901, 1910, 1923), Attems (1902, 1940), Manfredi (1945) or Strasser (1976), such a prominent (d) as in figure 9I or 9P, coupled with certain other distinct features (less strongly rounded lobes on the male cheeks, shorter epiproct, a differently-shaped apex of the meso-

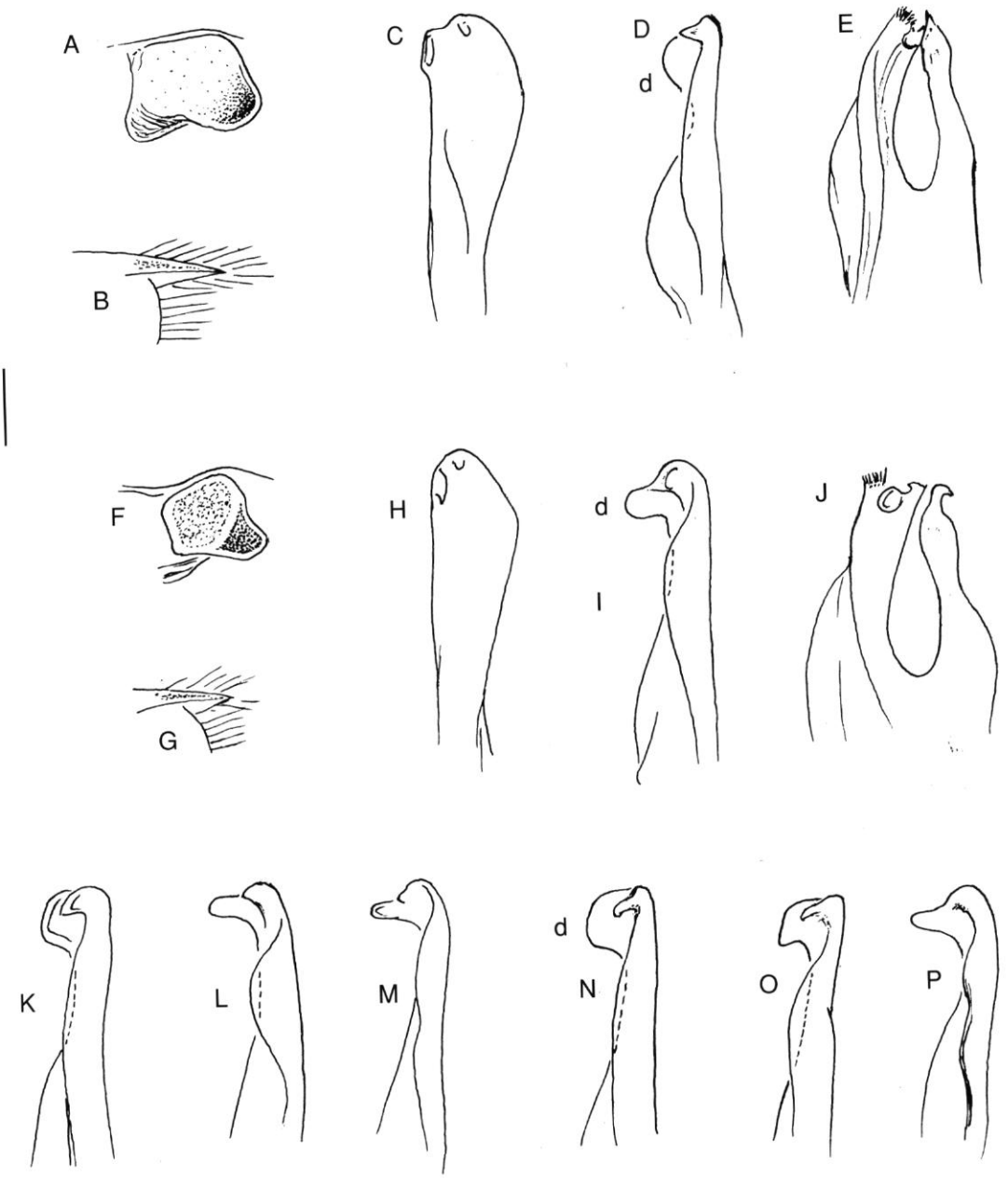


FIG. 9. — *Acanthoiulus fuscipes* (C. L. Koch, 1847), ♂♂ from Rhadohimës (var. α, dark, A-E; var. ß, pale, F-J), Bogë (var. α, K, N; var. ß, L, P), Maya Tchardakut (var. ß, M), and Petrela (var. γ, both body and legs dark, 44 and 49 body segm., O): **A**, **F**, right mandibular stipes, lateral view; **B**, **G**, epiproct, lateral view; **C**, **H**, promerite (= peltogonopod), caudal view; **D**, **I**, **K-P**, promerite, lateral view; **J**, **K**, gonopod (= opisthomerite), lateral view. Scale bar: 0.1 mm.

merite, see figure 9F, G), would immediately warrant a new taxon, at least a new subspecies.

In fact, no less than a dozen subspecies, varieties or synonyms of *fuscipes* are known: (1) *altivagus* (Verhoeff, 1899), first proposed and ever since treated as a subspecies of *fuscipes* (see Verhoeff, 1903, 1910; Attems 1929); (2) *arcadicus* (Verhoeff, 1900), described as a variety of *fuscipes*, but later transferred to *Brachyiulus* (now in *Megaphyllum*) (see Verhoeff, 1903, 1910); (3) *bosniensis* (Verhoeff, 1895), described as an independent species (see also Verhoeff, 1899), but later downgraded to the status of a subspecies of *fuscipes* (see Verhoeff, 1903, 1910; Attems 1929, 1959); (4) *idriensis* (C. L. Koch, 1847), and (5) *dalmaticus* (C. L. Koch, 1847), both originally described as independent species, but later referred to either as a synonym (*cf.* Latzel 1884) or a variety/subspecies, respectively, of *fuscipes* (see Latzel 1884; Verhoeff 1910; Attems 1929, 1959; Manfredi 1932, respectively); (6) *krohnii* (Verhoeff, 1898) and (7) *leuconotus* (Latzel, 1884), both first treated as varieties of *fuscipes* (see Latzel 1884; Verhoeff 1898, 1910; Attems 1929), but later elevated to subspecies (see Attems 1959); (8) *montanus* Verhoeff, *nomen nudum* (?), mentioned as a junior synonym of *idriensis* (see Verhoeff 1910); (9) *plasensis* (Verhoeff, 1910), described and since treated as a subspecies of *fuscipes* (see Verhoeff 1910; Attems 1929, 1959); (10) *simplex* (Verhoeff, 1910), described and since considered as a subspecies of *fuscipes* (see Verhoeff 1910; Attems 1929, 1959); (11) *steinii* (Karsch, 1881), described as an independent species, but later synonymized with *fuscipes* (see Latzel 1884); and (12) *subcrassus* (Latzel, 1884), first established as a variety of *fuscipes* (see Latzel 1884), but later synonymized under *fuscipes fuscipes* (see Verhoeff 1910). Four of those names have been reported from or closely enough to Albania (see Checklist below), while *simplex* has heretofore been recorded solely in N Albania, where our questionable males were found.

The variability in (d) shapes of the N Albanian samples at hand seems to center around two types, α and β, apparently without correlation with any other important character such as coloration, length of the epiproct, shape of the lobe on the male mandibular stipes, etc. (see Fig. 9A-J). We seem to face here a bimodal pattern of infrapopulational variation, which might be evidence of a species in the course of active speciation. Interestingly, whereas both these morphs, α and β, coexist at numerous localities of the Shkodër District, N Albania, further south, at Petrela and Librazhd, a third morph, γ, is observed which is closer to morph α and somewhat bridges the extremes (see Fig. 9O).

Similar observations have been made by Verhoeff (1898, 1899, 1910) in Bosnia, Hercegovina and Dalmatia, where intermediates between *krohnii*, *leuconotus* and *fuscipes fuscipes* (Grundform), but not between *idriensis* and *fuscipes fuscipes*, have been found. Moreover, *plasensis* and *altivagus* appear sympatric (Plasa near Jablanica, Hercegovina, *i.e.* very close to the Albanian border), if not syntopic (Verhoeff 1910). Only with a very modest degree in accuracy, using available descriptions, illustrations and keys (*e.g.* Verhoeff 1910), each of our three *fuscipes* morphs from Albania could be attributed to a definite variety or "subspecies", *e.g.* morph α perhaps to *fuscipes* var. *fuscipes*, morph β probably to *fuscipes* var. *bosniensis*, and morph γ apparently to *fuscipes* var. *idriensis*. However, such determinations hardly make any sense in the light of what is presumably only an infrasubspecific, micropopulational status of these varieties. In addition, the drawings available, if any, in the literature are far too often deficient, further adding to the uncertainty and confusion concerning the present-day level of pachyiuline systematics. To study variation in the shape of the promerite, for instance, not only the conventional caudal, but also a lateral view appears most instructive (see Fig. 9C, D, H, K-P).

Like in *Acanthopetalum carinatum* (see above), the above evidence seems sufficient not only to formally synonymize all currently established subspecies of *Acanthoiulus fuscipes* and downgrade them to the rank of varieties/morphs at best (see Latzel, 1884), but also to question the status of most if not all other pachyiuline "subspecies" as well as of a good number of species, particularly within the prolific, most closely-related, but taxonomically no less badly confused, genus *Pachyiulus* Berlese, 1883 (see also below).

To sum up, *Acanthoiulus fuscipes* can be stated to

represent a highly common and polymorphic Balkan (*s.l.*) species, ranging from NE Italy in the west to Serbia and Macedonia (including the Greek part) in the east and south-east.

The reason we use the name *Acanthoiulus* deserves special attention. Until now (*e.g.* Ceuca 1992), with only a few exceptions (*e.g.* Attems 1959), most authors referred all larger pachyiulines to a single genus, *Pachyiulus* Berlese, 1883, sometimes presenting a subgeneric division. For example, Hoffman (1980) regards no fewer than six names (two invalid) as synonyms or subgenera of *Pachyiulus*, including both *Diploiulus* Berlese, 1883, and *Acanthoiulus* Verhoeff, 1894.

It is important to mention in this connection that Jeekel (1970) considers the name *Diploiulus* by Berlese (1883) as invalidly proposed, without strict typification. The same concerns *Pachyiulus*, which was first erected without strict typification. Only later did Berlese (1886) explicitly designate type species for both genera, namely *Julus rufifrons* C. L. Koch, 1847, for *Diploiulus*, and *Iulus varius* Fabricius, 1781, for *Pachyiulus*. We fully agree with Jeekel (1970) that the later choice of *rufifrons* as the type species of *Diploiulus* was invalid, having been based on a species not mentioned in the original description. Had it been otherwise, the status of the large genus *Cylindroiulus* Verhoeff, 1894, would have again been endangered (see Read 1992). However, we disagree that both generic-level names concerned were proposed invalidly, for reading Berlese (1883) carefully leaves one convinced that the mention of only *Iulus varius* at the end of the original diagnosis of *Pachyiulus*, and of only *Iulus terrestris* Linnaeus, 1758, at the end of the original definition of *Diploiulus*, is sufficient to regard both generic names as typified by monotypy. In other words, both *Pachyiulus* and *Diploiulus* must be considered as properly typified by monotypy, while all subsequent type redesignations and doubts are to be ignored.

Fortunately for *Pachyiulus*, its type species has never been reconsidered since. No less luckily for present-day diplopod taxonomy, the original, valid, designation of *terrestris* for *Diploiulus* automatically makes the latter taxon a junior objective synonym of *Julus* Linnaeus, 1758, a genus based on the same *terrestris*. Hence, *Acanthoiulus* Verhoeff, 1894, becomes the first in the list of subjective synonyms or subgenera of *Pachyiulus*. Applicability of *Acanthoiulus* (= *Oxyiulus* Verhoeff, 1896), as opposed to the remaining *Pachyiulus* s. str., seems to us fully justified for larger pachyiulines displaying a very evident epiproct and (almost) no pseudoflagellum on the solenomerite. There are only two such forms, *fuscipes* and *cassinensis* Verhoeff, 1910, the latter species endemic to S Italy.

Pachyiulus dentiger Verhoeff, 1901
(Fig. 10A, B)

MATERIAL EXAMINED. — **Sarandë District.** Butrinti, 16.IV.1994, 1 ♂ (NHMS), leg. S. Beshkov.

REMARKS

As far as we are aware, this is a second record of *dentiger*, the first since its original description from Vlorë (= Valona), Albania (see Verhoeff 1901). As the opisthomerite has hitherto never been depicted, we present new illustrations of gonopod structure (Fig. 10A, B). The agreement between our sample (length only 25 mm, width 1.8 mm, fifty-two body segments, coloration dark, tarsal soles absent, promerite characteristically shaped and armed, etc.) and the original description seems quite convincing.

P. dentiger appears to be especially closely related to the sympatric *P. valonensis* Verhoeff, 1901, being distinguishable solely by the paler body coloration and larger size of both the distomesal tooth on the promerite and the tooth on the mesomerite.

Pachyiulus cattarensis (Latzel, 1884)

MATERIAL EXAMINED. — **Durrës District.** 4 km N of Durrës, under stones, 25.V.1993, 1 juv. ♂, 1 ♀ (NHMS), leg. P. Stoev & D. Zaprianova. — Same locality, 26.V.1993, 2 ♂♂ (ZMUM), leg. P. Stoev. **Sarandë District.** Himarë, 100 m, under stones, 3-4.V.1994, 1 ♂, 1 ♀ (NHMS), leg. P. Stoev. — Ionian coast, Dhërmi, under stones, 2.V.1994, 1 juv. ♂, 1 ♀, (NHMS), leg. P. Stoev. — Ionian coast, between Dhërmi & Himarë, small niche, 3.V.1994, 1 ♂ (NHMS), leg. P. Stoev. — Between Dhërmi and Himarë, 30.V.1994, 1 ♂, 1 ♀ (NHMS), leg. P. Stoev.

Vlorë District. Vlorë, under stones and soil, 1.V.1994, 1 ♂, 4 ♀♀ (NHMS), leg. P. Stoev & D. Zaprianova. — Vlorë, *Olea europaea* forest, 1.V.1994, 1 ♀, 2 juv. ♂♂, 2 juv. (NHMS), leg. P. Stoev & D. Zaprianova. — Near Dukati, 450 m, 11.V.1995, 2 ♂♂, 2 ♀♀, 1 juv. ♂ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — 10 km N of Fier, under bark, 10.V.1995, 2 ♂♂, 2 ♀♀ (NHMS), leg. S. Golovatch. — Llogorasë Pass, alt. 1025 m, under stones, 11.V.1995, 3 ♀♀, leg. S. Golovatch, P. Stoev & B. Petrov.

Librazhd District. Above Prenjas, 750 m, shrub on slope, 7.V.1995, 13 ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 1 ♂, 4 ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.

Tirana District. Tirana, Botanical Gardens, under stones, 8.V.1995, 7 ♂♂, 6 ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Petrela, 15 km SE of Tirana, 350 m, ruins, scrubs, under stones, 9.V.1995, 3 ♀♀, leg. S. Golovatch, P. Stoev & B. Petrov.

REMARKS

This common Balkan species has long been known from Albania (Verhoeff 1901; Attems 1929; Manfredi 1932, 1945). Only the males from Fier differ by the slightly more faintly oblique distal margin of the promerite, which is evidence of certain variability of this congener as well.

Due to its unusually slender promerites (= peltogonopods) (P.8) and gonopods (P.9), *cattarensis* is actually perhaps among the most readily recognizable *Pachyiulus* species in the entire Balkan region. Unfortunately, the situation is far less clear as regards the other, very numerous, species, subspecies or varieties encountered in the peri-Adriatic zone (Italy, Greece, Albania, ex-Yugoslavia), e.g. *hungaricus, varius, flavipes, oenologus, apfelbecki*, etc. In some of these and other taxa, all three main distal parts of the gonopod - *i.e.* the pseudoflagellum (Pf) (together with the fovea), the fringed lamella (L), and the seminal branch, or solenomerite (S) - in spite of minor variations, display relatively constant length ratios (*cf.* Attems 1940), allowing for a rather confident species identification. The main combinations are as follows:

Pf = S = L: *P. asiaeminoris* Verhoeff, 1898; *P. lobifer* Attems, 1940 (Pf enlarged);

{Pf = S >> L: *P. oenologus* Berlese, 1885, as depicted by Berlese (1885), which may well be a mistake (see also just below)};

Pf >> S = or a little > L: there are two distinct groups differing in mesomerital structure:

(a) mesomerite enlarged and rounded apically: *P. hungaricus* (Karsch, 1881); *P. hungaricus gracilis* Verhoeff, 1928; *P. asiaeminoris* sensu Attems, 1940;

(b) mesomerite acuminate: *P. oenologus* Berlese (det. A. Berlese, unpublished figures taken from a syntype by H. W. Brolemann, reproduced here in figure 10E, F); *P. flavipes* (C. L. Koch, 1847), *sensu* Attems, 1902; *P. oenologus* sensu Attems, 1902, 1940; *P. oenologus prominens* Attems, 1940; *P. asiaeminoris* sensu Strasser, 1974; *P. cattarensis pluto* Verhoeff, 1910, *sensu* Attems, 1940); *P. krivolutskyi* Golovatch, 1977 (= *Iulus foetidissimus* Muralewicz, 1907, non *Iulus foetidissimus* Savi, 1819, herewith the subjective junior synonym *krivolutskyi* becomes available as a replacement name to avoid homonymy, syn. n.); *P. varius* (Fabricius, 1781), *sensu* Latzel, 1884, and Attems, 1902, 1940; *P. dentiger*.

Numerous taxa, in which gonopods (P.9) have never been figured, seem also to belong to this "*varius/oenologus*" group: *brussensis* Verhoeff, 1941; *brussensis obscurus* Verhoeff, 1941; *cephalonicus* Attems, 1902; *flavipes bosporanum* Verhoeff, 1941; *flavipes insularum* Verhoeff, 1940; *flavipes rufas* Verhoeff, 1900: *humicolus* Verhoeff, 1910; *silvestrii* Verhoeff, 1923; *unicolor aprutianus* Verhoeff, 1930; *unicolor ciminensis* Verhoeff, 1930; *unicolor olivarum* Verhoeff, 1951; *varius pallipes* Manfredi, 1945 (see also below).

Pf >> S >> L: *P. cattarensis*; may be also *P. longelobulatus* Attems, 1902, and *P. cattarensis pseudounicolor* Verhoeff, 1902;

Pf > S > L: *Pachyiulus varius* sensu Berlese, 1885; *P. apfelbecki* Verhoeff, 1901, *sensu* Attems, 1940;

Pf = L > S: *P. speciosus* Verhoeff, 1901 (Pf acuminate);
Pf > S >> L: *P. unicolor milesius* Verhoeff, 1923; *P. flavipes* sensu Lignau, 1903.

Pf > L > S: *P. marmoratus* Verhoeff, 1901.

Some of these taxa differ from each other only in external characters, mainly size and, especially, coloration. Of course their gonopod structure does display minor variations too, but it seems highly homogeneous. Only (Pf) surpasses both distal branches and the mesomerite of P.9, while

in P.8 there is a distomesal tooth of slightly varying shapes. So we consider some further names as actually based on a single, evidently variable species, hence the new synonymy just below.

Pachyiulus varius (Fabricius, 1781) (Fig. 10C-K)

Julus flavipes C. L. Koch, 1847, syn. n.
Julus nigripes C. L. Koch, 1847
Julus unicolor C. L. Koch, 1847
Iulus oenologus Berlese, 1885, syn. n.
Pachyiulus apfelbecki Verhoeff, 1901, syn. n.
Pachyiulus varius var. *pallipes* Manfredi, 1945, syn. n.

MATERIAL EXAMINED. — **Shkodër District.** Bogë, Maya Bridashit, 1300 m, 20.V.1993, 1 ♀, 1 juv. ♂ (NHMS), leg. P. Beron.
Tirana District. Mt. Dajti, *c.*20 km NE of Tirana, 1000 m, *Fagus*, *Acer*, etc. forest, leaf litter and under bark, 9.V.1995, 1 ♂, 2 ♀♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Sarandë District. Dhërmi, 16.IV.1994, 1 ♀, 4 juv. ♂♂, 5 juv. ♀♀ (NHMS), leg. S. Beshkov.
Vlorë District. Vlorë, *Olea europaea* forest, under stones, 1.V.1994, 1 ♂ (NHMS), leg. P. Stoev & D. Zaprianova.

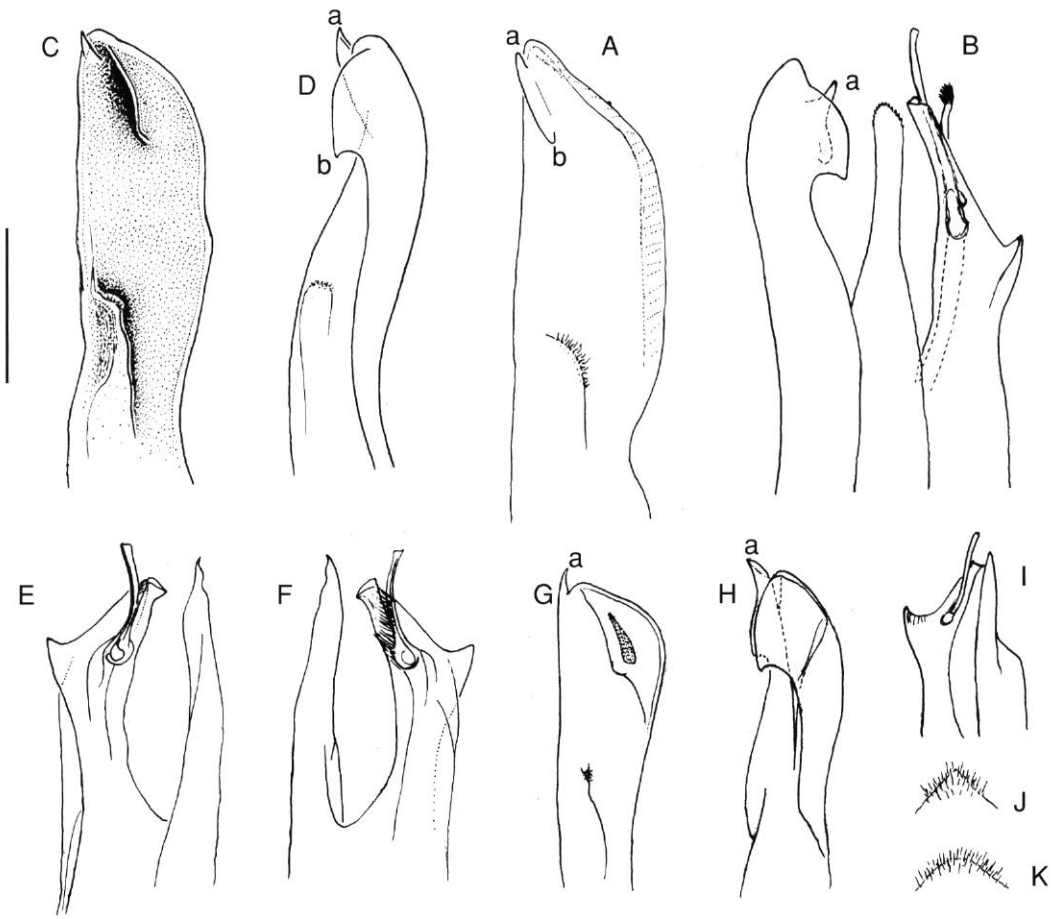


FIG. 10. — *Pachyiulus dentiger* Verhoeff, 1901, ♂♂ from Butrinti (A, B), and *Pachyiulus varius* (Fabricius, 1781), ♂ syntype of *Iulus oenologus* Berlese, 1885, from Firenze (Etruria) (C-F), and ♂♂ from Vlorë (G-J) and Dhërmi (K) : **A**, **C**, **G**, promerite, caudal view; **B**, entire gonopod complex, lateral view; **D**, **H**, promerite, lateral view; **E**, **F**, **I**, opisthomerite, lateral, mesal and lateral views, respectively (E and F, de l. H. W. Brolemann); **J**, **K**, epiproct, dorsal view. Scale bar: 0.5 mm.

REMARKS

Although this species is represented in our Albanian samples by only a few adult males, they allow additional light to be shed on its highly confused taxonomy. Already Latzel (1884) recognized the first two junior synonyms of *varius* (*terra typica*: Italy), namely *nigripes* and *unicolor*. However, since then, no serious attempt has been performed to reassess the indeed highly variable *varius*. Instead, numerous new *Pachyiulus* species, subspecies and varieties have been established throughout the Mediterranean, many of them displaying no significant differences, whether it would be between each other or from *varius*, or both. Moreover, one such species, *flavipes* (*locus typicus*: Pola, N Croatia), has been left untouched since Latzel (1884), although he in fact noted its great overall similarity to *varius*, with the differences lying solely in coloration (paler yellowish-brown *vs* brownish-black, respectively). *P. oenologus* was originally described by Berlese (1885) from Etruria, and only a year later did he (1886) report it, as a "new" species, from most of Italy. Hence the first introduction of the name *oenologus* dates fom 1885, not 1886, as currently accepted by mistake. *P. varius, flavipes, oenologus* and some of their "subspecies" or varieties (some even under *unicolor*) have since been reported from south of France in the west to the Crimea and W Anatolia in the east, but in the Balkan region (*s.l.*) none shows a coherent pattern, being dispersed in a random, mosaic-like way.

P. apfelbecki was described from N Greece (Verhoeff 1901), and *varius* var. *pallipes* from Albania (Manfredi 1945); neither seems to have been recorded since.

Fortunately, the MNHN collections contain published and unpublished material of *varius, flavipes* and *oenologus*, allowing direct comparisons to be made. Moreover, one of the *oenologus* samples appears to contain several syntypes (three males and one female), of which one male had previously been revised and even drawn by H. W. Brolemann. We take this opportunity to publish these illustrations for the first time and complement them with our own figures of promerital structure (Fig. 10C-F). These syntypes are in good condition, though perhaps a little faded due to long preservation in alcohol, being gray with brown annulations (metazona); legs pale brownish, collum and telson brown; latter without real epiproct, terminally slightly obtuse, angle *c.*120°; body length *c.*45 (male) to 50 mm (female), diameter 3 (male) to 3.5 mm (female); males with 59(-3), 61(-3) and 63(-3), female with 63(-3) body segments.

As a result, despite pronounced variation in habitus and gonopod structure, a direct comparison of the new Albanian samples (Fig. 10G-K), older material of *flavipes* (from Sicily), *varius* (from Bergamo and Romagna-Meldola, Italy, as well as from Zara, Dalmatia) and *oenologus*, with descriptions and drawings [including several unpublished sketches of *varius* and *flavipes* gonopods, all executed by H. W. Brolemann (iconographic file, MNHN)], along with the available descriptions of *apfelbecki* and *varius* var. *pallipes*, reveals that they all belong to a single, highly variable and widespread (trans-Mediterranean) species, *varius* by priority. There could hardly have been a better name chosen for such a species!

Variation mostly concerns size (our Albanian adults are a little smaller than the above *oenologus* syntypes), coloration (the Albanian samples are blackish throughout), shape of the epiproct (slightly different even within the Albanian samples, *cf.* Fig. 10J, K), outlines of the promerite (the Albanian material is similar to *flavipes bosporanus* Verhoeff, 1941, except that the distal margin is as sinuose as that of *cattarensis*), shape of the distal teeth and lobes on the promerite (the Albanian samples display a large distomedial lobe, rather than a tooth) as well as the form of the caudal tooth on the opisthomerite (from pronounced to almost missing, as noted even for *apfelbecki* by Verhoeff (1901)), etc. What remains quite stable, is the opisthomerite possessing subequally long and very slender (Pf) and (S), both as long as the mesomerite and clearly surpassing (L), *i.e.* as depicted by Berlese (1885).

Pachyiulus hungaricus (Karsch, 1881)

MATERIAL EXAMINED. — **Librazhd District.** Above Prenjas, 750 m, scrub on slope, 7.V.1995, 1 ♂, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Vlorë District. 4 km S of Vlorë, under stones, 2.V.1994, 1 ♀, 1 juv. ♂ (NHMS), leg. P. Stoev.
Sarandë District. Ionian coast, Dhërmi, under

stones, 2.V.1994, 3 ♀♀ (NHMS), leg. P. Stoev. — Ionian coast, Himarë, under stones, 3.IV.1994, 3 ♀♀ (NHMS), leg. P. Stoev.

REMARK

This very large and easily recognizable Balkan-Carpathian species has long been known from Albania (Attems 1929).

Pachyiulus sp.

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1000-1100 m, 5-9.VI.1993, 3 ♀♀ (NHMS), leg. P. Beron & B. Petrov. — Above Bogë, Alpet Mt. Rhadohimës, 2200-2400 m, 29.V.1993, 3 ♀♀ (NHMS), leg. P. Beron.
Rrëshen District. Kurbnesh, cave with ladder, 11.VI.1993, 1 ♀ (NHMS), leg. P. Beron & B. Petrov (No. 570).
Durrës District. 2 km N of Durrës, under stones, 24.V.1993, 1 juv. (NHMS), leg. P. Stoev & D. Zaprianova. — 4 km N of Durrës, under stones, 16.V.1993, 1 juv. ♂ (NHMS), leg. P. Stoev.
Librazhd District. Between Hotolisht and Librazhd, 300 m, scrub, gravel, under stones and bark, 7.V.1995, 1 juv. ♂, 3 juv. ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov. — Above Prenjas, 750 m, scrub on slope, 7.V.1995, 2 juv. ♂, 1 juv. (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Vlorë District. Levan, 14.IV.1994; 1 ♀ (NHMS), leg. S. Beshkov.

REMARKS

In the absence of adult male, it has been impossible to identify these samples to species, although most adult female seem to belong to *varius*.

Chromatoiulus podabrus bosniensis (Latzel, 1888)

MATERIAL EXAMINED. — **Shkodër District.** Bogë, 1000-1100 m, 3-9.VI.1993, 1 ♂, 2 juv. (NHMS), 1 ♂, 1 ♀ (MNHN, Collection Myriapodes EB 038); leg. P. Beron & B. Petrov. — Same locality, 1800-1900 m, pitfall trapping, 20-23.V.1993, 1 juv. ♂, 1 juv. (NHMS), leg. P. Beron & B. Petrov.

REMARKS

This W Balkan species or subspecies ranges from N Italy in the north(west) down to N Greece in the south. It has already been recorded from Albania (Attems 1929).

Chromatoiulus sp.

MATERIAL EXAMINED. — **Lushnja District.** Divjaka Natural Park, *Pinus halepensis* and *P. pinea* strand forest, litter and under stones, 10.V.1995, 1 ♀ (NHMS), leg. S. Golovatch, P. Stoev & B. Petrov.
Rrëshen District. Kurbnesh, cave with ladder, 11.VI.1993, 1 ♀ (NHMS), leg. P. Beron & B. Petrov.

REMARKS

In the absence of adult male, this material could not be identified closer to (sub)species, although they seem to belong to *bosniensis*.

Order POLYZONIDA Gervais, 1844
Family POLYZONIDAE Gervais, 1844

Polyzonium germanicum Brandt, 1831

MATERIAL EXAMINED. — **Shkodër District.** Bogë, pitfall trapping, IV.1993, 2 ♂♂ (NHMS), leg. B. Petrov & P. Beron. — Same locality, Maya Tchardakut, 1400-1600 m, 2.VI.1993, 1 ♀ (NHMS), leg. P. Beron (No. 595).

REMARKS

This pan-European species has already been reported from Albania (Attems 1929).

Acknowledgements

Our cordial thanks are due to all collectors who entrusted us their materials for treatment, in particular to Dr. Petar Beron, currently Director of the NHMS. Two of us (SG and PS) are most grateful to Dr. Beron again for arranging their participation in the 1995 collecting trip to Albania, during which Dr. C. Misja and Mr. M. Qirjo (both from Tirana) rendered us their warm hospitality. One of us (SG) is greatly obliged to Prof. Yves Coineau (MNHN Paris) for awarding him a month-long scholarship at the Laboratoire de Zoologie (Arthropodes) of the Paris Muséum. Dr. M. Nguyen Duy-Jacquemin (MNHN Paris) very helpfully identified for us both Albanian samples of Polyxenida, and Prof. W. A. Shear (Hampden-Sydney, Virginia, USA) kindly shared with us certain information on the status of an Albanian chordeumatidan in his hands. Last but not least, Dr. M. Judson (MNHN Paris) very generously corrected the

English of the final draft, and Dr. Henrik Enghoff (Copenhagen, Denmark) provided a review of the manuscript.

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Submitted for publication on 28 August 1996;
accepted on 3 October 1996.

CHECKLIST OF DIPLOPODA OF ALBANIA AND ADJACENT LANDS

A Taxa cited from Albania by Ceuca (1992) and our new species/records;
Mo from Montenegro (Cerna Gora) by Attems (1959) and/or Strasser (1971);
Ma from Macedonia (ex-yugoslav) by Strasser (1971);
nG from Epirus (including Corfu) and/or Greek Macedonia (also unpublished data);
(*) junior synonyms; (?) doubtful taxa.

Taxa	Cited by
POLYXENIDA	
POLYXENIDAE	
Polyxenus lagurus Linnaeus, 1758	Attems 1929, 1959 (Ma)
Polyxenus macedonicus Verhoeff, 1952	(Ma)
GLOMERIDA	
GLOMERIDELLIDAE	
Albanoglomus ljubetensis Attems, 1929	auct., Attems 1959 (Ma)
Typhloglomeris coeca Verhoeff, 1898	Mo)
GLOMERIDAE	
Glomerini	
Glomeris balcanica Verhoeff, 1906	(nG)
Glomeris conspersa porphyrea C. L. Koch, 1847	(Mo)
Glomeris hexasticha Brandt, 1833	Verhoeff 1932; Attems 1929, 1949; (A, Ma, Mo)
var. *ambigua* (Haase, 1886)	Attems 1929
var. *vallicola* Verhoeff, 1906	Attems 1929
Glomeris pulchra pulchra C. L. Koch, 1847	Attems 1929, 1959 (Mo)
var. *conjuncta* Attems, 1927	Attems 1929
var. *wohlberedti* Verhoeff, 1909	auct.
var. *verhoeffi* Attems, 1927	auct.
var. *discreta* Attems, 1927	Manfredi 1945
Glomeris pustulata Latreille, 1804	(A)
Haploglomerini	
Haploglomeris multistriata (C. L. Koch, 1844)	(Mo)
Onychoglomerini	
Onychoglomeris herzogowinensis (Verhoeff, 1898)	auct., Attems 1929, 1959 (A) (Mo) (nG)
? = *Onychoglomeris herzogowinensis media* Attems, 1935	auct., Attems 1959 (A)

Taxa	Cited by
Trachysphaerini	
Hyleoglomeris epirotica (Mauriès, 1966)	(nG)
Trachysphaera acutula (Latzel, 1884)	(nG)
Trachysphaera corcyrea Verhoeff, 1900)	(nG)
Trachysphaera costata (Waga, 1858)	Attems 1929, 1959 (Ma) (nG)
? = *Trachysphaera rotundata* (Lignau, 1911)	(nG)
Trachysphaera schmidtii (Heller, 1858)	
= *nodulifera* (*) (Verhoeff, 1906)	auct., Attems 1929, 1949, 1959 (A)
Tribus incertae sedis	
Epiromeris aelleni Strasser, 1976	(nG)
POLYDESMIDA	
PARADOXOSOMATIDAE	
Metonomastus petrelensis n.sp.	(A)
Stosatea simoni (Daday, 1889)	(A) (Mo) (nG)
(?) *Stosatea cretica* (Verhoeff, 1901)	? (A)
Stosatea granulata Daday, 1889	(nG)
Stosatea minima Strasser, 1976	(nG)
Stosatea sp., aff. *iadrense* (Pregl, 1883)	Strasser 1974 (nG)
Strongylosoma stigmatosum (Eichwald, 1830), non *pallipes* (Olivier, 1792)	auct., Attems 1929, 1949, 1959; Verhoeff 1932 (A, Ma)
XYSTODESMIDAE	
Melaphe vestita (C. L. Koch, 1847)	Attems 1929, 1959
Ochridaphe albanica Verhoeff, 1932	auct. (A) (Ma)
POLYDESMIDAE	
Brachydesmus cernagoranus Attems, 1912	(Mo)
Brachydesmus cornutus Attems, 1903	(Mo)
Brachydesmus dalmaticus Latzel, 1884	(Mo)
Brachydesmus herzogowinensis Verhoeff, 1897	(Ma) (A)
Brachydesmus lapidivagus Verhoeff, 1897	(Mo)
Brachydesmus ljubetensis Attems, 1912	auct., Attems 1929 (Ma)
Brachydesmus lobifer Verhoeff, 1897	(Mo)
Brachydesmus peristerensis Verhoeff, 1932	(Ma)
Brachydesmus stygivagus Verhoeff, 1899	(Mo)
Brachydesmus subterraneus Heller, 1858	Attems 1929, 1949 (A) (Mo)
Brachydesmus vermosanus Attems, 1929	auct., Attems 1959 (Mo)
Brachydesmus zawalanus Attems, 1912	(Mo)
Polydesmus collaris C.L. Koch, 1847	Attems, 1929, 1949 (A) (Ma, Mo)
Polydesmus collaris tussilaginis Verhoeff, 1897	Attems 1959
Polydesmus complanatus (Linnaeus, 1758)	
= *Polydesmus complanatus illyricus* (*) Verhoeff, 1895	Attems 1929, 1949, 1959 (A) (Mo, Ma) (nG)
Polydesmus herzogowinensis Verhoeff, 1897	Attems 1929, 59; Manfredi 1945 (A) (Ma, Mo) (nG)
Polydesmus mediterraneus Daday, 1889	Verhoeff 1901; Attems 1929, 1959; Manfredi 1945 (A) (Mo)
Polydesmus mediterraneus oertzeni Verhoeff, 1901	auct. (nG)
Polydesmus mediterraneus martensi Strasser, 1967	(nG)
Polydesmus varians Strasser, 1976	(nG)
Polydesmus wardaranus Verhoeff, 1937	Attems 1959 (Ma)
CHORDEUMATIDA	
ANTHROLEUCOSOMATIDAE *s.l.*	
Anamastigona albanensis n.sp.	(A)
Paeonisoma faucium Verhoeff, 1932	auct. (A) (Ma)
CHORDEUMATIDAE	
Melogona broelemanni (Verhoeff, 1897)	Attems 1929, 1949, 1959 (A) (Ma) (nG)

Taxa	Cited by
Melogona broelemanni albanica (Verhoeff, 1901)	auct., Attems 1929, 1959 (A)
Melogona broelemanni banatica (Verhoeff, 1899)	Attems 1959
HAASEIDAE	
Haasea lacusnigri Gulicka, 1968	(Mo)
HETEROLATZELIIDAE	
Heterolatzelia cornuta Gulicka, 1968	(Mo)
Heterolatzelia durmitorensis Gulicka, 1968	(Mo)
Heterolatzelia nivalis absoloni Attems, 1951	(Mo)
NEOATRACTOSOMATIDAE	
Neoatractosoma herzegowinense Verhoeff, 1901	(Mo)
FAMILIA INCERTAE SEDIS	
Epirosomella loebli Strasser, 1976	(nG)
CALLIPODIDA	
DORYPETALIDAE	
Dorypetalum degenerans (Latzel, 1884)	Attems 1929, 1959 (Ma)
Dorypetalum degenerans bosniense (Verhoeff, 1897)	Attems 1959
? = *Dorypetalum trispiculigerum* Verhoeff, 1900	(nG)
SCHIZOPETALIDAE	
Schizopetalini	
Callipodella fasciata (Latzel, 1882)	Attems 1929, 1959
? = *C. trifasciata* (Daday, 1899), ? = *C. dorsovittata* (Verhoeff, 1900)	(A, Ma, Mo, nG)
Callipodella mostarensis (Verhoeff, 1901)	Attems 1929, 1959 (A, Mo)
Callipodella mostarensis kerkana Verhoeff, 1929	Attems 1959 (Mo)
Dischizopetalum illyricum (Latzel, 1884)	Attems 1959
Apfelbeckiini	
Apfelbeckia albanica Verhoeff, 1941	auct., Attems 1959 (A, Mo)
Apfelbeckia albosignata Verhoeff, 1901	Attems 1929, 1959 (Mo)
Apfelbeckia lendenfeldi Verhoeff, 1901	auct. (Mo)
Apfelbeckia lendenfeldi miraculosa Attems, 1951	(Mo)
Apfelbeckia lendenfeldi flavipes Attems, 1929	auct. (A)
Apfelbeckia hessei Verhoeff, 1929, var. *boldorii*	Manfredi 1945, auct. (A)
Apfelbeckia wohlberedti Verhoeff, 1909	auct., Attems 1959 (A) (Mo)
Himatiopetalum ictericum (C. L. Koch, 1867)	(nG)
Prolysiopetalini	
Prolysiopetalum scabratum (C. L. Koch, 1867)	(nG)
Acanthopetalini	
Acanthopetalum (*A.*) *albidicolle* Verhoeff, 1900	(A) (nG)
Acanthopetalum (*A.*) *sicanum* (Berlese, 1883)	(nG)
Acanthopetalum (*A.*) *sicanum epiroticum* Attems, 1935	(nG)
Acanthopetalum (*A.*) *furculigerum patens* Strasser, 1973	(nG)
Acanthopetalum (*A.*) *furculigerum transitionis* Strasser, 1976	(nG)
Acanthopetalum (*A.*) *subpatens* n.sp.	(A)
Acanthopetalum (*Petalysium*) *carinatum* (Brandt, 1840)	Attems 1929, 1959; Manfredi 1945 (A, Mo, Ma)
= *Acanthopetalum* (*P.*) *albanicum* (*) (Verhoeff, 1932)	auct., Attems 1959 (A) (Ma)
= *Acanthopetalum* (*P.*) *comma* (*)(Verhoeff, 1900)	(nG)
= *Acanthopetalum* (*P.*) *macedonicum* (*)Verhoeff, 1923	Attems 1929, 1959 (Ma)
= *Acanthopetalum* (*P.*) *thessalorum* (*)(Verhoeff, 1901)	Attems 1929, 1959 (A)
= *Acanthopetalum* (*P.*) *thessalorum lychnitis* (*) (Verhoeff, 1932)	(A) (Ma)
JULIDA	
NEMASOMATIDAE	
Nemasoma varicorne C. L. Koch, 1847	Attems 1929, 1949 (Ma)
BLANIULIDAE	
Nopoiulus kochii (Gervais, 1847) = *pulchellus* (*) (C. L. Koch, 1838) = *venustus* (*)(Meinert, 1868)	(Ma, nG)

Taxa	Cited by
= *armatus* (*) (Nemec, 1895) = *atticus* (*)Verhoeff, 1925	Attems 1959
JULIDAE	
Brachyiulini	
Brachyiulus apfelbeckii Verhoeff, 1898	Attems 1929, 1959 (A, Mo, nG)
= *Brachyiulus apfelbeckii uncilobus* (*) Attems, *nom. nud.*	Attems 1959 (Mo)
Brachyiulus lusitanus Verhoeff, 1898	(nG) (Ma)
Brachyiulus pusillus (Leach, 1814)	Verhoeff 1901; Attems 1929,
= *Brachyiulus littoralis* (*) Verhoeff, 1898	1949, 1959 (A, Mo)
Brachyiulus stuxbergi (Fanzago, 1875)	(nG)
Brachyiulus varibolinus Attems, 1904	(A, nG)
= *Brachyiulus beratinus* (*) Manfredi, 1945	auct.
Megaphyllum austriacum (Latzel, 1884)	(Mo)
Megaphyllum bosniense (Verhoeff, 1897)	Attems 1927, 1929, 1959 (A, Mo, Ma)
Megaphyllum bosniense flavopictum (Attems, 1929)	auct.
Megaphyllum carniolense (Verhoeff, 1896)	Attems 1949 (Mo)
Megaphyllum crassum (Attems, 1929)	auct., Attems 1959 (Ma)
Megaphyllum dentatum (Verhoeff, 1898)	Attems 1927, 1929, 1959 (A, Ma)
Megaphyllum hercules (Verhoeff, 1901)	auct., Attems 1929, 1959; Manfredi 1945; (A, Ma, nG)
Megaphyllum imbecillum (Latzel, 1884)	Attems 1949 (nG) (A)
Megaphyllum karschi (Verhoeff, 1901)	auct., Attems 1929, 1959 (nG)
Megaphyllum macedonicum (Strasser, 1976)	(nG)
Megaphyllum margaritatum epiroticum (Strasser, 1976)	(nG)
Megaphyllum metsovoni (Strasser, 1976)	(nG)
Megaphyllum monticola (Verhoeff, 1898)	Attems 1929, 1959 (A, Mo)
Megaphyllum recticauda (Attems, 1903)	(nG)
Megaphyllum recticauda discrepans (Strasser, 1976)	(nG)
Megaphyllum rubidicolle (Verhoeff, 1901)	(nG)
Megaphyllum unilineatum (C. L. Koch, 1838)	Attems 1929, 1949, 1959
Pachyiulini	
Acanthoiulus fuscipes (C. L. Koch, 1847)	Attems 1929, 1959 (A, Mo, Ma, nG)
= *Acanthoiulus fuscipes bosniensis* (*) (Verhoeff, 1895)	Attems 1929, 1959; Manfredi 1945
= *Acanthoiulus fuscipes idriensis* (*) (C. L. Koch, 1847)	Manfredi 1932
= *Acanthoiulus fuscipes simplex* (*) (Verhoeff, 1910)	auct., Attems 1929, 1959
var. *krohnii* (Verhoeff, 1898)	Attems 1929, 1959 (Mo)
var. *leuconotus* (Latzel, 1884)	Attems 1929, 1959 (Mo)
Pachyiulus apfelbecki Verhoeff, 1901	(nG)
Pachyiulus cattarensis (Latzel, 1884)	Verhoeff 1901; Attems 1929, 1959; Manfredi 1932, 1945 (A, Mo, Ma, nG)
var. *pseudounicolor* Verhoeff, 1923	Attems 1959 (Ma)
? = *Pachyiulus longelobulatus* (*) Attems, 1904	(A) (nG)
Pachyiulus dentiger Verhoeff, 1901	auct., Attems 1929, 1959
Pachyiulus marmoratus Verhoeff, 1901	(nG)
Pachyiulus varius (Fabricius, 1781)	Attems 1929, 1949, 1959; Manfredi 1945 (A, Mo, nG)
= var. *pallipes* (*)Manfredi, 1945	auct.
= *Pachyiulus apfelbecki* (*) Verhoeff, 1901	(nG)
= *Pachyiulus flavipes* (*)(C. L. Koch, 1847)	Attems 1929, 1959 (A) (nG)
= *Pachyiulus oenologus* (*) Berlese, 1885	
Pachyiulus hungaricus (Karsch, 1881)	Attems 1929, 1959 (A, Mo, Ma, nG)
Pachyiulus venetus Verhoeff, 1926	Manfredi 1945; Attems 1949
Pachyiulus valonensis Verhoeff, 1901	Attems 1929, 1959 (nG)
Ommatoiulini	
Ommatoiulus sabulosus (Linnaeus, 1758)	Attems 1929, 1949, 1959 (A, M)

Taxa	Cited by
Leptoiulini + Typhloiulini	
Leptoiulus (*Proleptoiulus*) *trilineatus* (C. L. Koch, 1847)	Attems 1929, 1949, 1959 (A, Ma, Mo)
Leptoiulus (*P.*) *trilineatus plasensis* Verhoeff, 1908	Attems 1959 (Mo)
Leptoiulus (*Oroiulus*) *cernagoranus* (Attems, 1927)	(Mo)
Leptoiulus (*Oroiulus*?) *discophorus* (Attems, 1927)	auct., Attems 1929, 1959 (A, Mo)
Leptoiulus (*O.*) *durmitorius* (Attems, 1927)	(Mo)
Leptoiulus (*O.*) *hauseri* Strasser, 1976	(nG)
Leptoiulus (*O.*) *jaroslavi* **nom. nov.**[1]	auct., Attems 1959 (A, nG)
Leptoiulus (*O.*) *laetedorsalis* (Verhoeff, 1898)	(Mo)
Leptoiulus (*O.*) *macedonicus* (Attems, 1927)	Attems 1929, 1959 (Ma, A)
Leptoiulus (*O.*) *matulicii* (Verhoeff, 1901)	(Mo)
Leptoiulus (*O.*) *pentheri* (Attems, 1927)	auct., Attems 1929, 1959
Leptoiulus (*O.*) *sarajevensis* Verhoeff, 1898	Attems 1927, 1929, 1959 (Ma, Mo)
= *Macedoiulus storkani* (*) Verhoeff, 1932, **syn. n.**[1]	Attems 1959 (Ma)
Leptotyphloiulus coeruleoalbus Verhoeff, 1899	auct. (A)
Typhloiulus albanicus Attems, 1929	auct., Attems 1959 (Ma)
Typhloiulus beroni n.sp.	(A)
Typhloiulus ganglbaueri Verhoeff, 1899	(Mo)
Typhloiulus psilonotus Latzel, 1884	(Mo)
Cylindroiulini	
Cylindroiulus boleti (C. L. Koch, 1847)	Attems 1927, 1929, 1949, 1959 (Ma, Mo)
Cylindroiulus (?) *luridus* (C. L. Koch, 1847)	Attems 1949
Enantiulus nanus acutus (Attems, 1929)	auct., Attems 1959
Oncoiulini	
Chromatoiulus podabrus podabrus (Latzel, 1884)	Attems 1929, 1959 (A, Mo, Ma, nG)
Chromatoiulus podabrus bosniensis (Latzel, 1888)	Attems 1929, 1959 (A, Mo, Ma)
Chromatoiulus (?) *hamuligerus* (Verhoeff, 1932) ♀	Attems 1959 (A, Ma)
Telsonius nycteridonis Strasser, 1976	(nG)
Unciger foetidus (C. L. Koch, 1838)	Attems 1949, 1959
Unciger transsilvanicus (Verhoeff, 1899)	Attems 1949, 1959
Paectophyllini	
Macheirioiulus compressicauda Verhoeff, 1901	Attems 1959 (nG)
POLYZONIDA	
POLYZONIIDAE	
Polyzonium germanicum Brandt, 1831	Attems 1929, 1949, 1959 (A, Ma)
= *Polyzonium germanicum albanicum* (*) Verhoeff, 1932	auct., Attems 1959
HIRUDISOMATIDAE	
Hirudisoma hirsutum Verhoeff, 1901	(nG)
PLATYDESMIDA	
ANDROGNATHIDAE	
Dolistenus savii Fanzago, 1874	(nG)
Fioria mediterranea (Daday, 1889)	(nG)
Plutodesmus typhlus (Daday, 1889)	(nG)

1. Even a superficial comparison of the available descriptions and illustrations of *Leptoiulus sarajevensis* (see Verhoeff 1898; Attems 1927) and *Macedoiulus storkani* (see Verhoeff 1932) leaves no doubt whatever that we face the same creature. Hence the above new synonymy, analogous to that of *Macedoiulus* Verhoeff, 1932, under *Leptoiulus* Verhoeff, 1894, syn. n. Indeed, the only real autapomorphy of *Macedoiulus* vis-à-vis *Leptoiulus* appears the somewhat reduced flagellum of the peltogonopods (male P.8), a highly unstable character which often tends to be lost independently in various julid (and not other) lineages, being at most species-specific. The missing velum on the gonopods proper (male P.9) as well as some other features claimed by Verhoeff (1932) to distinguish his *Macedoiulus* from *Leptoiulus* do not really hold, being shared with some other assumed congeners (see also dicussion above). Unfortunately, the above synonymy requires a new

name to be chosen for *Leptoiulus storkani*, a species proposed by Verhoeff (1932) just two pages following the description of *Macedoiulus storkani*. To avoid homonymy, and still honour Dr. Jaroslav Storkan, the replacement name *Leptoiulus jaroslavi*, nom. nov., is herewith proposed. Interestingly, Strasser (1976) has reported both *sarajevensis* (sub *Macedoiulus storkani*) and *jaroslavi* (sub *Leptoiulus storkani*) from Albania, without mentioning any pertinent material. Hence he seems to have corrected Attems (1929, 1959), who had erroneously placed some neighbouring ex-yugoslav localities in Albania, and introduced some more of his own errors...

Addendum

Only a short time after the redaction of our text, we realize that some recent and interessant works of Mrsic 1987, 1988 and 1993, concerning Macedonia, was remained unknown of us. The last gives the list and chorology of Millipedes of Macedonia, sixty species, of which seventeen are new for Science and Macedonia: *Glomeris pulchra* C. L. Koch, 1847; *Glomeris balcanica* Verhoeff, 1906; *Oxidus gracilis* C. L. Koch, 1847; *Brachydesmus henrikenghoffi* Mrsic, 1993; *Brachydesmus macedonicus* Mrsic, 1988; *Polydesmus collaris tussilaginis* Verhoeff, 1929; *Polydesmus jawlowskii* Strasser, 1966; *Polydesmus juergengruberi* Mrsic, 1993; *Polydesmus mediterraneus oertzeni* Verhoeff, 1901; *Polydesmus renschi* Schubart, 1934; *Schizmohetera sketi* Mrsic, 1987; *Megaphyllum transsilvanicum* (Verhoeff, 1897); *Megaphyllum unilineatum* (C. L. Koch, 1847); *Rhodopiella beroni* Strasser, 1966; *Cylindroiulus arborum* (Verhoeff, 1928); *Cylindroiulus luridus* (C. L. Koch, 1847); *Unciger foetidus* (C. L. Koch, 1838).