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Parviapiciella balcanica (REMY, 1943) (Myriapoda: Symphyla: Scolopendrellidae) – first record from Austria

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Abstract

Parviapiciella balcanica is reported for the first time from Austria. The validity of the genus *Parviapiciella* is discussed and the distribution of *P. balcanica* reviewed.

Key words: Symphyla, *Parviapiciella balcanica*, *Symphylellopsis*, *Scolopendrellopsis*, distribution, first record, Austria.

Zusammenfassung

Parviapiciella balcanica wird erstmals aus Österreich gemeldet. Die Validität der Gattung *Parviapiciella* wird diskutiert und die Verbreitung von *P. balcanica* dargestellt.

Introduction

Recently one of us (E.C.) collected *Parviapiciella balcanica* (REMY, 1943) for the first time in Austria. Because the taxonomy of *P. balcanica* is incompletely known and the records are scattered, we discuss the status and review the general distribution of this rare species.

Parviapiciella balcanica (REMY, 1943)

Symphylellopsis balcanica REMY 1943: 4, figs 1-2.
Scolopendrellopsis (*Symphylellopsis*) *balcanica* SCHELLER 1971: 172

Generic characters of *Parviapiciella*: In his valuable survey of the European Symphyla, REMY (1943) described a new *Symphylellopsis* species from Yugoslavia and Greece, *S. balcanica*. He found specific differential characters in the median apodeme of the head, in the tergites and the cerci, but most of them matched his concept of the genus *Symphylellopsis*.

The rank of the genus *Symphylellopsis*, established by RIBAUT (1931), was changed by SCHELLER (1971) to a subgenus of *Scolopendrellopsis* BAGNALL (1913). Later, MAS & SERRA (1993) created a new monotypic genus, *Parviapiciella*, for *S. balcanica*. According to these authors, the genus is characterized by 11 pairs of fingerlike projections on the tergites and by a well-developed first pair of legs, with a tarsus almost as long as the tarsus of the second pair.

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In Symphyla, characters of the tergites are most significant for the distinction of both genera and species. The shape of the tergites (rounded, with/without posterior indentation or projections) has often been used, as well as the chaetotaxy of the tergites. It is well known, however, that symphylans show considerable intraspecific variation in these characters and that the stability of tergal characters diminishes backwards. Posterior tergites often grow more rounded, and projections, if present, become smaller. The projections of the last tergites are frequently asymmetrical – one long and the other short – and sometimes one of a pair is lacking. Hence, the taxonomic significance of characters on the posterior part of the trunk is limited and their use might be a source of confusion.

The subadult specimen from Austria (body length 2.15 mm) has distinct projections on 11 tergites and a very short, asymmetrical projection behind the last pair. The projections of pairs 3, 6 and 9 are considerably shorter than the other paired projections (Fig. 1). In the adult female from the Peloponnese studied by one of us (U.S.) there are 10 pairs of projections, the 3rd and 10th being very short and thin, about one third of the length of the preceding pair. Moreover, they have neither the dilatation observed in the basal halves of the other projections, nor any seta. In the Austrian specimen dilatations and setae are lacking on the short projections and on the last long pair. Thus, the shape of the projections of the posterior tergites seems to be a doubtful character in *Parviapiciella*. Furthermore, in *Symphylellopsis* the 16 tergites are subdivided differently in different species (RIBAUT 1931, JUBERTHIE-JUPEAU 1962, DOMINGUEZ 1984).

The second generic character proposed by MAS & SERRA (1993) is of morphometric nature. In *Parviapiciella*, the tarsi of leg 1 are "almost as long" as the tarsi of leg 2, while in *Scolopendrellopsis* the first tarsi are "not more than one-half the length of the following pair" (cf. BAGNALL 1913). This difference is difficult to evaluate and to compare with other species, and not distinct enough to separate genera.

In our opinion, *P. balcanica* is only weakly differentiated from species of the genus *Scolopendrellopsis*. The strongest reason for a generic separation is the scaly cuticular pattern of the cerci, which has never been observed in *Scolopendrellopsis* species. In *Hanseniella* (Scutigerellidae), however, either cercus type is realized in different species of the same genus: non-pubescent cerci with scaly cuticular ridges and pubescent cerci without a scaly pattern.

We raise the question whether the differences in the structure of tergites, legs and cerci are necessarily of generic significance. For the time being we prefer to maintain the genus *Parviapiciella*, being aware that a thorough re-examination of the *Scolopendrellopsis* species may shift it to a lower status. The geographic range of *Parviapiciella* lies within the *Scolopendrellopsis* area.

Record of *P. balcanica* in Austria: Lower Austria, Perchtoldsdorf (immediately south of Vienna), valley Kardinalgraben: 48°06' N / 16°14' E, 360 m a.s.l. One subadult specimen (11 pairs of legs), Macfadyen-extracted from 2000 cm³ of topsoil (0-5 cm), leg. E. Christian, 25 July 1998. The specimen (mounted in Marc André II medium) is kept in the Myriapoda Collection of the Naturhistorisches Museum Wien, NHMW 3041.

Distribution of *P. balcanica*: The locality numbers in the following list refer to the numbers in the map (Fig. 2). ad. = adult specimen with 12 pairs of legs; subad. = subadult specimen with 11 pairs of legs; juv. = juvenile specimen with the number of leg pairs indicated.

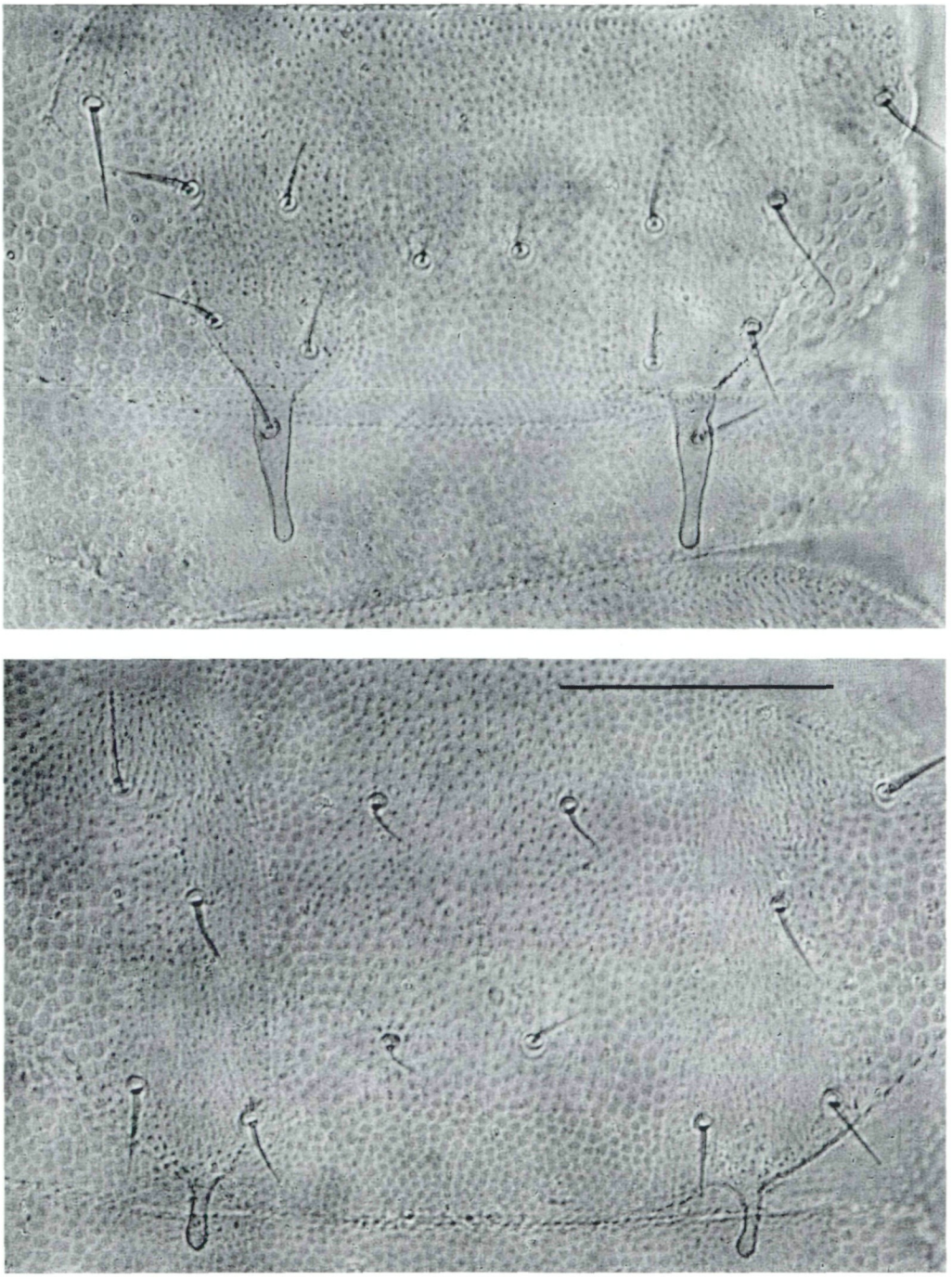

Fig. 1: *Parviapiciella balcanica*: First (above) and third (below) pair of tergite projections of the Austrian specimen. Scalebar 50 µm.

Spain, Canary Islands – 3 specimens (SCHELLER & BAEZ 1989)
1 Tenerife, Realejo Alto, 400 m: 1 subad. ♀, 1 juv. 8
2 Tenerife, Montana Chamuscada, 800 m: 1 juv. 9

Morocco – 4 specimens (SCHELLER 1990)
3 Rif Atlas, El-Gouzat, 1050 m: 1 juv. 10, 3 juv. 8

Algeria – 3 specimens (AUBRY & MASSON 1952)
4 Ourdja, near Summeur, 1050 m: 1 damaged specimen, 1 ad.
5 Akfadou forest, near Aberkane, 1350-1400 m: 1 juv. 8

Spain, Catalonia – 19 specimens (MAS & SERRA 1993)
6 l'Alt Urgell, Bescaran: 1 juv. 9
7 el Berguedà, Gironella: 1 ad. ♂
8 el Berguedà, Vallcebre: 1 ad. ♂
9 el Berguedà, Saldes: 1 subad., 1 juv. 10
10 el Berguedà, Castellar de N´Hug: 4 ad. ♀, 1 juv. 9
11 el Ripollès, Pardines: 2 ad., 1 juv. 10
12 el Ripollès, Gombren: 1 ad. ♀, 1 ad.
13 l'Alt Empordà, Agullana: 1 ad ♀
14 Osona, La Castanya, Montseny: 1 juv. 8

Spain, Balearic Islands – 2 specimens (JUBERTHIE-JUPEAU 1961)
15 Menorca, Mahon, route d'Alayor: 1 juv. 8
16 Menorca, Mercadal: 1 ad.

France – 2 specimens (CHARDARD 1947)
17 Hérault, Lattes, 7 m: 1 ad. ♂
18 Gard, Le Vigan, 240-290 m: 1 juv. 8

Switzerland – 1 specimen (SCHELLER 1978)
19 Ticino, Monte Generoso, Cragno, 940 m: 1 juv. 10

Austria – 1 specimen (present paper)
20 Lower Austria, Perchtoldsdorf south of Vienna, 360 m: 1 subad.

Romania – 6 specimens (JUBERTHIE-JUPEAU & TABACARU 1968)
21 Bihar Mountains, Lunca Ampoitei: 1 juv. 10, 1 juv. 9, 1 juv. 8
22 South Carpathians, Vîrtoape Massif, Obîrsia-Closani: 1 ad. ♂
23 South Carpathians, Rudareasa valley, Ciungetu: 1 ad. ♀
24 South Carpathians, upper Olăneşti valley: 1 ad. ♀

Croatia – Total number of specimens unknown
25 Krk, Rudine, Vitezićeva cave (= Biserujka), 20 m (CHRISTIAN & POTOČNIK 1985): 1 ad. ♀
26 Imotsko polje, 200-220 m (DIZDAREVIĆ 1972): ?

Bosnia and Herzegovina – Total number of specimens unknown (DIZDAREVIĆ 1972)
27 Livanjsko polje, Čelebić, 720 m: ?
28 Livanjsko polje, Jasenovi, 720 m: ?
29 Livanjsko polje, road to Glamoč, 900 m: ?
30 Kupreško polje, 1110-1150 m: ?
(Records from Bosnia and Herzegovina without indication of the localities are not mapped: DIZDAREVIĆ 1970; ŽIVADINOVIĆ, MILUTIN & DIZDAREVIĆ 1967)

Yugoslavia – 2 specimens (REMY 1943)
31 Montenegro, Rabitlje near Pljevlja: 1 ad., 1 juv. 8

Greece – 9 specimens
32 Corfu, west of Kassiopi (SCHELLER 1968): 1 ad., 2 juv. 9, 4 juv. 8
33 Thessalia, Kalabaka (REMY 1943): 1 juv. 8
34 Peloponnese, Garzeniko cave near Kandila, 1080 m (SCHELLER 1990): 1 ad. ♀

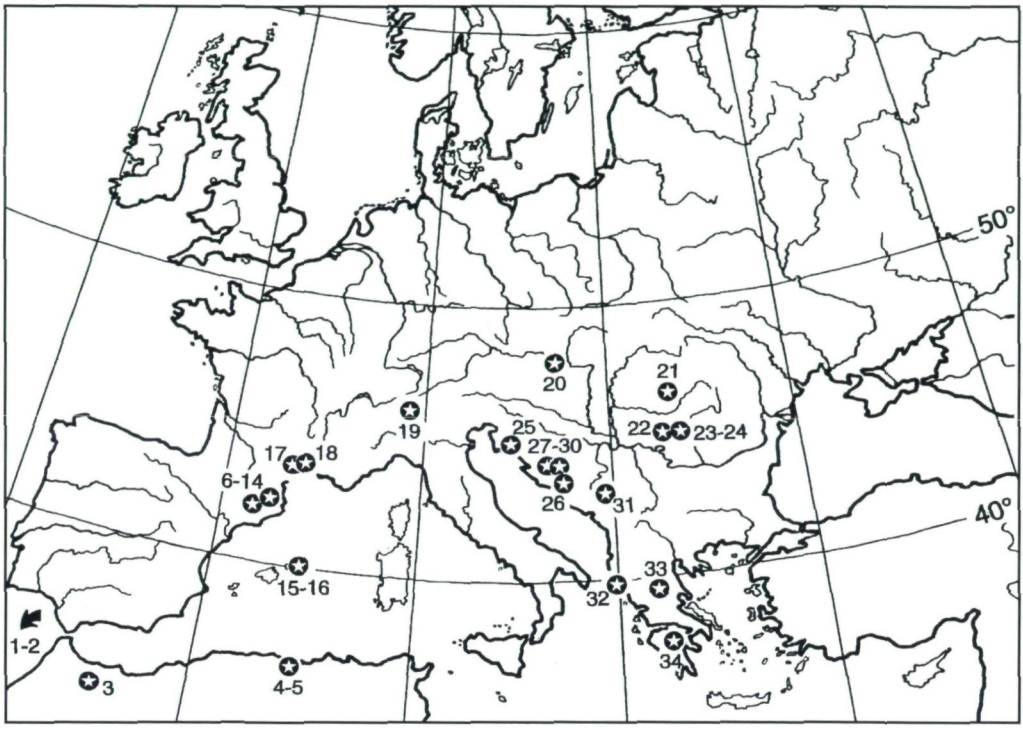

Fig. 2: Distribution of *Parviapiciella balcanica* (REMY, 1943). The numbers in the map correspond with the numbers in the locality list.

The records of *P. balcanica* suggest a (Sub-)Mediterranean area with outposts in Macaronesia and in the Pannonian and Carpathian regions. The species has not been reported from the Iberian Peninsula except its northeastern part, from Italy and the big Mediterranean islands, from Bulgaria, Turkey, the East Mediterranean countries, and North Africa east of Algeria (Fig. 2). Since *P. balcanica* is a rare species (as suggested by the numbers of specimens in the list above), these blanks may partly be filled by records to come. The species does not occur in the north and northwestern part of Europe. The new Austrian locality is the northernmost record at present.

Ecology of *P. balcanica*: Only one or a few specimens of *P. balcanica* have been collected at most sites. DIZDAREVIĆ (1971), however, found the species "everywhere in Bosnia and Herzegovina" in habitats from 50 to 1900 m a.s.l., most frequently in forests with *Fagus*, *Quercus* and *Carpinus*. This author reports a preference for acidic soils on silicate bedrock versus alkaline soils on carbonate rock, and a nearly constant population density within the top 20 cm of soil. *Parviapiciella balcanica* occurred in 11 of 30 different plant communities in Bosnia and Herzegovina (DIZDAREVIĆ 1970).

The Austrian site is a deciduous forest with *Fagus sylvatica*, *Quercus cerris*, *Acer pseudoplatanus*, *Carpinus betulus*, *Tilia cordata* and single *Fraxinus excelsior*, *Acer platanoides* and *Pinus nigra*. Mild climatic conditions are indicated by *Quercus cerris* and *Staphylea pinnata*. The annual precipitation is about 700 mm, and the soil is a brown loam over

dolomite, pH = 6.5. *Parviapiciella balcanica* clearly inhabits this site in low density, as subsequent samples of various litter and soil strata – in all seasons but winter – yielded no further specimens.

Parviapiciella balcanica is probably a thermophilous species. The northern border of its range approximates the 20°C July isotherm.

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