BIOGEOGRAPHICAL REMARKS ON GYAS TITANUS SIMON, 1879 (OPILIONES, PHALANGIIDAE) IN THE BALKANS

TONE NOVAK¹, SAŠA LIPOVŠEK¹ & LJUBA SLANA²

¹Department of Biology, University of Maribor, Koroška 160, SI–2000 Maribor, Slovenia
²Ozare 31, SI–2380 Slovenj Gradec, Slovenia


On the basis of 33 locality records of Gyas titanus Simon, 1879 (Opiliones, Phalangiidae) it is stated that the species more or less continuously inhabits the western and middle Balkans. Thus the Alpine-Balkans-Carpathian range of the species is continuous.

Key words: the Balkans, biogeography, Bosnia and Herzegovina, Croatia, Gyas titanus, Montenegro, Opiliones, Serbia

INTRODUCTION

Harvestmen of the European phalangiid genus Gyas are a montanous species. G. annulatus (OLIVIER, 1791) is an Alpine species while G. titanus Simon, 1879, has been known to inhabit disjunctively the mountains of the Iberian Peninsula, the Alps and the Carpathian Mts. (MARTENS, 1978). Generally, it has been thought the species does not cross the Karavanke/Karawanken mountain chain to the South, although a few separate finding-places have been known in the Apennines and the

Croatian Natural History Museum, Demetrova 1, Zagreb, Croatia
Balkan peninsula (ibid.). In Slovenia, there is a transitional region between the Alpine and the Balkan populations. The published (Novak et al., 1984; 1995; Lipovšek et al., 1995) and some further localities from Slovenia are included in Fig. 1, but not cited in the list; they will be published elsewhere. The provisional actual geographical distribution of G. titanus in the Balkans is based on literature data and on determined specimens from the following harvestman collections:

- BABIĆ Collection, deposited at the Croatian Natural History Museum, Zagreb; HPMZ
- collections of the Slovene Museum of Natural History, Ljubljana; PMSL
- Coll. of the Institute of Biology University of Ljubljana
- Biological coll. of the Karst Research Institute – Research Center of the Slovenian Academy of Sciences and Arts at Postojna
- (remains of) HADŽI Coll.; JH
- Biol. coll. of the Museum of Notranjska at Postojna
- some small private collections
- personal collection.

Except for the BABIĆ Collection, the material is partly deposited with the authors and partly in the PMSL.

**LIST OF THE AVAILABLE RECORDS OF Gyas titanus IN THE BALKANS**

Literature data and new records of G. titanus at the Balkans are catalogued in the List and zoogeographically presented in Fig. 1. The UTM codes (10 x 10 km) are given for localities.

**List of the available records of Gyas titanus Simon, 1879 in the Balkans**

**Croatia**

- **Golik, VL93**, Brod na Kupi, 22.04.1987, HORVAT, SIVEC leg.: 1 iuv. (det. TN 1175/1998; PMSL); **Kiclove jame, VL93**, Skrad, 700 m, 06.1914: 1 f (BABIĆ, 1916, sub G. annulatus); 22.07.1914: 1 f (TN 687/1984; HPMZ); **Kraljevi zdenac, WL77**, 529 m, Zagreb, 06.1915: 2 mm, 1 f (BABIĆ, 1916, sub G. annulatus); 13.05.1917: 1 iuv. (rev. TN 690/1984; BABIĆ det. sub G. annulatus juv.; HPMZ); **Sljeme, WL78**, 04.06.1903, 900 m: 1 m, 1 f (rev. TN 689/1984; BABIĆ, 1916, sub G. annulatus; HPMZ); **Slunj, WK49**, DEELEMAN leg. (MARTENS, 1978); **Lobor, WM81**, Ivančica, 02.05.1986, SIVEC leg.: 2 subad. (TN 1195/1998; PMSL); **Strmac, XL82**, Psunj, Nova Gradiška, 04.05.1985, SIVEC leg.: 1 subad. (TN 1193/1998; PMSL); **Kamengrad, XL94**, Papuk, Slavonska Požega, 03.05.1986, SIVEC leg.: 1 subad. (TN 1156/1998; PMSL); little **cave at Jankovac, YL03**, Velika, 657 m, 21.07.1916: 19 mm (BABIĆ, 1916, sub G. annulatus)
DISCUSSION AND CONCLUSIONS

Review of the BABIĆ and HADŽI collections has revealed that the published records of *G. annulatus* for Croatia (BABIĆ, 1916; HADŽI, 1973) and Serbia (HADŽI, 1973) relate to *G. titanus*. The same is true of ROEWER’s (1935) records for Dalmatia in an unknown locality is uncertain. The mistaken determinations were caused by the use of an invalid specific character: it used to be thought that the trochanters of *G. titanus* are black and those of *G. annulatus* white, but specimens of *G. titanus* with pale trochanters also occur (MARTENS, 1978).
In the vicinities of Zagreb (Croatia), Sarajevo (Bosnia) and Plav (Montenegro) harvestmen have been collected several times. For these regions a nearly continuous distribution of *G. titanus* can be established. It is reasonable to assume that the species also inhabits regions that have not been intensely investigated and from which only single findings are known. On the other hand, KRATOCHVÍL (1946) did not find *G. titanus* in spite of intensive searching for arachnids in caves of northern Dalmatia, Bosnia, Hercegovina and Montenegro, probably because he did not visit (water-)caves in winter (cf. NOVAK et al., 1999). In pre-alpine and montane regions the species occurs only by woodland stream banks. In addition, separate local populations occur, and this should be kept in mind where systematic mapping is to be carried out.

**Fig. 1.** The map of reliable records and presumed distribution of *Gyas titanus* in the Balkans
G. *titanus* has been recorded in Croatia, Bosnia and Herzegovina, Montenegro and Serbia. It is expected in northern parts of Albania (at least at Mt M. e Radohineš and Mt M. Hekurave) and probably in Macedonia (Mt Šar planina, Mt Korab) and some western Bulgarian mountains (e. g. Mt Stara planina), although it had not been found in Bulgaria before 1976 ([Starčević, 1976](#)). Along the border mountain chain between Albania and Macedonia (Mts Korab, Jablanica and Goličica) the range possibly extends just into the very north-western parts of Greece (e.g. Ayios Yermanós Mt.). In the southern countries it is expected to inhabit woodland stream banks above 800 m in altitude.

Considering the above findings it seems justified to conclude that *G. titanus* more or less continuously inhabits the western and middle Balkans. Except for some isolated mountains in the Pannonian lowland (Mt Ivančica, Mt Sljeme, Mt Papuk), populations of the species continuously extend throughout the Alps, along the mountains of the western and middle Balkans and in Transylvania. Thus the Alpine-Balkans-Carpathian range of the species is continuous.

**ACKNOWLEDGEMENTS**

We are very grateful to the staff of several institutions, who made possible the determination and the review of the material. We especially thank Dr. Nace Sivec and Bogdan Horvat (both Ljubljana), who collected the majority of the evaluated samples. Many thanks to Dr. Jürgen Gruber (Vienna) for his critical remarks on the manuscript and to Dr. Christian Komposch (Graz) and Dr. Plamen Mitov (Sofia) for their discussion of the geographical distribution of *G. titanus* in southern Austria and Bulgaria, respectively. We are indebted to Dr. Victor Kennedy (Maribor) for language improvement.

*Received April 4, 2000*

**REFERENCES**


