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THE DISTRIBUTION AND ECOLOGY OF PSEUDOSCORPIONES IN POLAND

Introduction

The study of pseudoscorpions began in 19th century, thanks to the activities of Antoni Waga and Anton Menge. Waga collected rich material from various parts of Poland as well as from other Europeans and African countries. This material was preserved as dried specimens, and only a small part of it has survived up to now. Unfortunately, Waga never worked out his material, so we have only little information about it. In 1855 Menge published his first paper on Pseudoscorpiones, mainly from the Gdańsk district, but it contained information on many sites in Poland and some records of amber fauna. He mentioned 7 species of pseudoscorpions. 20 years later Nowicki and Kulczyński published several papers about arachnids from Galicia with new data on the distribution and ecology of Pseudoscorpiones. Kulczyński collected very rich material of pseudoscorpions and was going to prepare a monograph of Pseudoscorpiones of Poland, but he never finished it. All of his material and his notes disappeared during the First World War. Before the Second World War the famous Polish arachnologist and acarologist, - Prof. J. Rafalski, has begun collecting pseudoscorpions from many parts of Poland. The results have been published in the *Catalogus faunae Poloniae* in 1967. Poland was divided into 21 faunistic regions and subregions. Based on literature and his own collection, Rafalski has given information on the distribution and tentative ecology of 38 species and subspecies of pseudoscorpions from Poland.

This paper is based on the literature and field investigations which have been carried out by the author in several regions of Poland (Jędrzykowski 1985, 1987, 1987a).

decayed wood and places under bark.

2. Mixed forest with pine and oak (*Pino-Quercetum*).

The mixed forests are a very common type of forest which cover most of Poland except the mountainous regions. In this environment there live six species. Those inhabiting leaf litter are *N. sylvaticum sylvaticum* (but only in the Świętokrzyskie Mts.), *N. erythroductylum* and *N. carcinoides*. *A. wideri* and *C. hahni* live under bark of oaks, in hollows and in decayed wood. *Mesochelifer ressl*i lives under bark of old pines in sunny places.

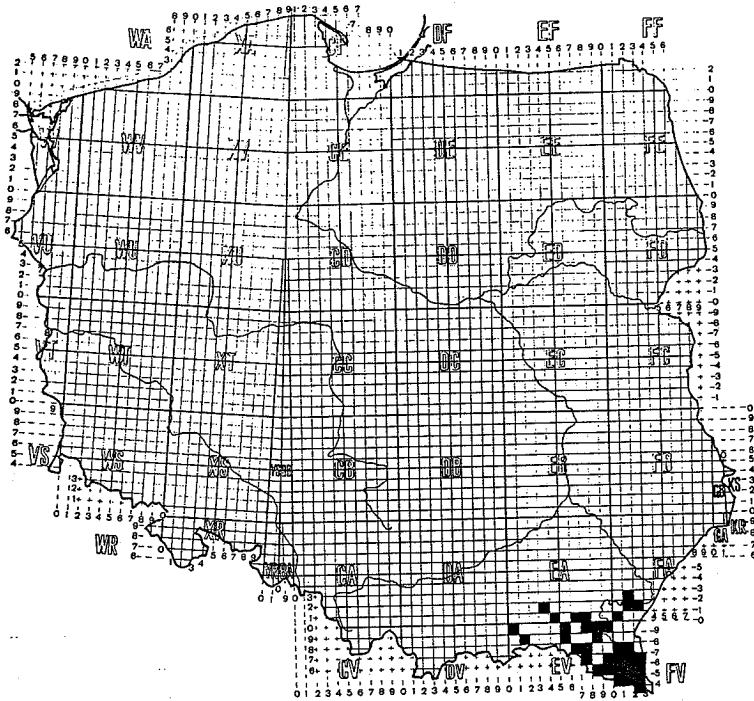


Figure 6. Distribution of the Carpathian element in Poland.

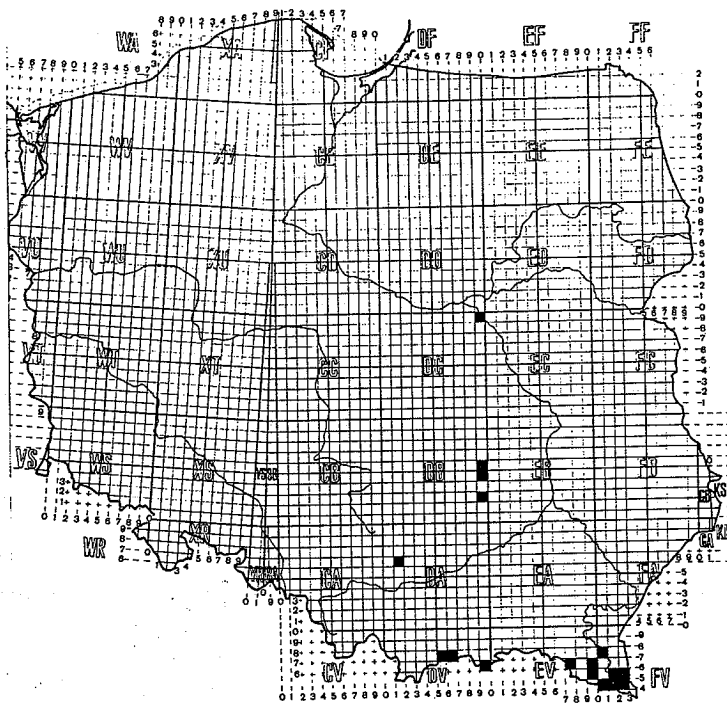


Figure 7. Distribution of the East Carpathian element in Poland.

3. Deciduous mountainous forest with beech (*Dentario glandulosae* - *Fagetum*).

This type of forest is typical of most mountains in Poland. It offers very good environmental conditions, so the pseudoscorpion fauna is very rich there. Fifteen species of Pseudoscorpiones have been recorded from there. The following species are characteristic of leaf litter: *M. carpathicus*, *Chthontius heterodactylus*, *N. sylvaticum sylvaticum*, *N. erythroductylum*, *N. carcinoides*, *N. brevidigitatum*, *N. carpathicum*, *N. polonicum*, *N. fuscimanum fuscimanum* and *Roncus transilvanicus*. The following species live in tree hollows, decayed wood and under bark: *A. wideri*, *D. panzeri*, *C. cimicoides*, *C. hahni* and *Dendrochernes cyrneus*.

4. Deciduous forest with oak and lime (*Tilio-Carpinetum*).

Since this type of forest occupies only rich soils, it is not frequent in Poland except in national parks and reservations. The forest floor is occupied by *M. carpaticus* and *N. sylvaticum sylvaticum* (in mountains only), *N. erythroductylum*, *N. carcinoides* and *Pselaphochernes scorpioides*. Under bark and in tree hollows there are *A. wideri*, *C. cimicoides*, *C. hahni* and *D. cyrneus*.

5. Bushes.

There is a large variety of bushes in Poland. In mountain localities they can be moisty especially along streams. Here occur *M. carpaticus*, *C. heterodactylus*, *N. sylvaticum sylvaticum*, *N. carpaticum*, *N. polonicum*, *N. fuscimanum fuscimanum* and *R. transsilvanicus*. In lowland bushes covering slopes and hills live *N. erythroductylum* and *N. carcinoides*.

6. Meadows.

A variety of meadows are inhabited by different groups of pseudoscorpions. In mountains, under stones at river banks live *N. polonicum*, *N. sylvaticum sylvaticum*, *N. fuscimanum fuscimanum* and *R. transsilvanicus*. In the northern part of Poland, where meadows are more steppe-like, live *N. erythroductylum* and *Microbistium suecicum*.

7. Peat-bogs.

The peat-bogs have the greatest variety and abundance in the northern part of Poland and in the Świętokrzyskie Mts. They are not very rich in pseudoscorpion fauna, but there is one species - *Microbistium brevifemuratum* which is typical for this environment. Apart from this species *N. sylvaticum sylvaticum*, *N. erythroductylum* and *N. carcinoides* occur.

8. Tree hollows and bird nests.

This is a very special sort of environment, which is inhabited by a peculiar fauna. Although much has been published on especially insect fauna, there is little information about Pseudoscorpiones. During the author's study the following species have been collected: *Cheiridium museorum*, *A. wideri*, *C. hahni*, *D. panzeri* and *C. cancrroides*.

9. Synanthropic environments (gardens, parks, houses etc.).

Five species of pseudoscorpions were recorded from these environments. Outdoors live *N. carcinoides* and *N. erythrodictylum* while inside, especially in barns and poultry-houses, *C. museorum*, *A. wideri* and *C. carcinoides* occur.

This analysis does not contain the complete material on all species of Pseudoscorpiones in Poland, but refers only to reliable data.

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