

**First records of *Badonnelia titei* Pearman, 1953
(Psocoptera: Sphaeropsocidae)
and *Mesopsocus helveticus* Lienhard, 1977
(Psocoptera: Mesopsocidae)
in the Czech Republic**

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Abstract

The psocid species *Badonnelia titei* was found in the territory of the Czech Republic for the first time, 1 larva was collected in a room of an old house in Kašperské Hory town [i.e. the Bohemian Forest (= the Šumava Mts.)] in South Bohemia. *Mecopsocus helveticus* was found at one place in foothills of the Bohemian Forest (Strašín village) and also in foothills of the Giant Mts. (Krkonoše Mts., Valteřice village). These are the first records in the Czech Republic.

Key words: *Badonnelia titei*, *Mesopsocus helveticus*, Psocoptera, faunistics, first records, Czech Republic

INTRODUCTION

A complex psocopterological research was initiated in the territory of the Czech Republic in 1997 (cf. HOLUŠA 2003a). In this research, which is situated mainly in the eastern territory of the Czech Republic, i.e. the Carpathians, the author started to study ecological problems of psocid taxocenoses composition dependence on geobiocenological units, i.e. vegetation tiers or groups of geobiocoene type (HOLUŠA 2001, 2003b, 2005). Moreover, MÜCKSTEIN & HOLUŠA (2003) studied the composition of psocid taxocenoses in different ecosystem types and its dependence on the naturalness level of forest ecosystems in the region of the Žďárské Vrchy hills.

Some psocid species are currently known only from the territories, where psocopterological survey have been done for a longer time period. For example a “new species” for the territory of the Czech Republic, *Badonnelia titei* is known from many countries of Western or Northern Europe (cf. LIENHARD 1998). It will become a member of psocid fauna probably also in the territory of Central and Eastern Europe. Nevertheless, it has still not been found there. Likewise *Badonnelia titei*, species *Mesopsocus helveticus*, which was described in 1977 in Switzerland (LIENHARD 1977), is supposed to be found in a larger area also in Central and Eastern Europe.

MATERIAL

Badonnelia titei Pearman, 1953

Kašperské Hory town, 49°08'38.70" N, 13°33'16.16" E; 6847; 741 m a.s.l., a room in an old house, 9 August 1998, 1 larva, leg. O. Holuša, det. C. Lienhard, coll. O. Holuša.

Mesopsocus helveticus Lienhard, 1977

Bohemia: Strašín village, 6847, 49°10'59.33" N, 13°37'45.58" E; 600 m a.s.l., branches of *Pinus sylvestris* in opening forest stands of *Pinus sylvestris*, 3 August 1998, 1 ♂, 1 ♀; Valteřice village, 5359, 50°37'32.54" N, 15°33'36.603" E; 500 m a.s.l.; 6 August 1999, 1 ♀, branches of *Alnus glutinosa* in a bank belt of *Alnus glutinosa* along a small river, leg. O. Holuša, det. et coll. O. Holuša, rev. C. Lienhard.

RESULTS AND DISCUSSION

Psocid species *Badonnelia titei* is a domicolous species (LIENHARD 1998). GÜNTHER (1974) noted, it is also a cavernicolous species which avoids the light. It has been found so far in cellars on old paper, or among potatoes. It occurs very often together with specimens of *Phyllipsocus ramburi* Sélys-Longchamps, 1872, *Dorypteryx domestica* (Smithers, 1958), and *Lepinotus patruelis* Pearman, 1931. *B. titei* was found also in caves in Switzerland, however, those specimens were probably transferred there by instruments, which were stored in museum cellar (LIENHARD 1977) and used for cave researches later.

Currently, the species is known in 10 European countries – Germany, Belgium, Finland, France, United Kingdom, Ireland, Luxembourg, Norway, Sweden and Switzerland (LIENHARD 1998). Its area probably will be larger in the whole territory of Europe or Palearctic region. It has not ever been found outdoor (GÜNTHER 1974). As well as other domicolous species, it will probably occur in the whole territory of the Czech Republic.

Mesopsocus helveticus was described by Lienhard in 1977. It is a very similar species to holarctic *Mesopsocus unipunctatus*, i.e. it is not possible to distinguish males. *M. helveticus* is also ecologically very similar to the above species. It is a corticolous montane species so far found at altitudes from 1100 up to 1630 m a.s.l. It inhabits dry or live branches of coniferous trees – *Pinus sylvestris*, *Larix decidua*, and *Picea abies*, rare it was also found on branches of *Fagus sylvatica*. It is a late summertime to autumnal species overwintering in the stage of eggs. First larvae appear at the end of July, first imagos appear in September. Both records fall into the beginning of the period of imagos' occurrence and also the localities lie in lower altitudes. The record of its occurrence on *Alnus glutinosa* tree extends the present knowledge of the species ecology.

The species has been found in 3 countries – Switzerland – the Alpes Grisonnes Mts. (LIENHARD 1977), the Alpes Valaisannes Mts. (LIENHARD 1980, 1985), in Austria (RESSL 1995) and Hungary – Bükk Mts. (LIENHARD 1986). Its area will probably involve the whole territory of Central and Eastern Europe. It is possible to expect its occurrence especially in mountain regions, e.g., the Carpathians in Eastern Europe. Due to difficult determination, this species can be overlooked.

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REFERENCES

- GÜNTHER K.K., 1974: Staubläuse, Psocoptera. *Tierwelt Deutschland*, 61: 1–314.
HOLUŠA O., 2001: Příspěvek k poznání fauny pisivek (Insecta: Psocoptera) Přírodní rezervace Smrk (Beskydský

- bioregion, Česká republika) [Contribution to the knowledge of psocids (Insecta: Psocoptera) in the Nature Reserve of Smrk Mt. (Beskydský bioregion, Czech Republic). *Práce a Studie Muzea Beskyd*, 11: 83–97 (in Czech, English abstract).
- HOLUŠA O., 2003a: Vegetační stupňovitost a její bioindikace pomocí řádu pisivek (Insecta: Psocoptera). Disertační práce, Mendelova zemědělská a lesnická univerzita, Lesnická a dřevařská fakulta, Brno, 258 pp. (in Czech).
- HOLUŠA O., 2003b: Fauna pisivek (Insecta: Psocoptera) Národní přírodní rezervace Mazák (Beskydský bioregion, Česká republika) [Fauna of the psocids (Insecta: Psocoptera) in the National Nature Reserve Mazák (Beskydský biogeographical region, Czech Republic)]. *Práce a Studie Muzea Beskyd (Přírodní Vědy)*, 13: 83–98 (in Czech, English abstract).
- HOLUŠA O., 2005: Fauna pisivek (Insecta: Psocoptera) Přírodní památky Kamenec v Podbeskydské pahorkatině (Podbeskydský bioregion, Česká republika) [Fauna pisivek (Insecta: Psocoptera) Přírodní památky Kamenec v Podbeskydské pahorkatině (Podbeskydský bioregion, Česká republika)]. *Práce a Studie Muzea Beskyd (Přírodní Vědy)*, 15: 75–89 (in Czech, English abstract).
- LIENHARD C., 1977: Die Psocopteren des Schweizerischen Nationalparks und seiner Umgebung (Insecta: Psocoptera). *Ergebnisse der wissenschaftlichen Untersuchungen im Schweizerischen Nationalpark*, 14 (75): 417–551.
- LIENHARD C., 1980: Oekologische Untersuchungen im Unterengadin. D2. Psocopteren (Insecta: psocoptera). *Ergebnisse der wissenschaftlichen Untersuchungen im Schweizerischen Nationalpark*, 12 (8):16–33.
- LIENHARD C., 1985: Sur quelques espèces intéressantes de Psocoptères du bassin lémanique et du Valais. *Bulletin Romand d'Entomologie*, 3: 73–79.
- LIENHARD C., 1986: Beitrag zur Kenntnis der Psocopteren-Fauna Ungarns. *Annales Historico-Naturales Musei Nationalis Hungarici*, 78: 73–78.
- LIENHARD C., 1998: *Psocoptères Euro-méditerranéens. Faune de France. Vol 83.* Fédération Française des Sociétés de Sciences naturelles, Paris, 517 pp.
- MÜCKSTEIN P. & HOLUŠA O., 2003: Composition of psocid taxocenoses (Insecta: Psocoptera) in dependence of level of naturalness of forest ecosystems in the Žďárské vrchy hills. *Journal of Forest Science*, 49: 208–219.
- RESSL X., 1995: *Naturkunde des Bezirkes Scheibbs*. Tierwelt (3). Linz 443 pp.

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