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**Four aphid species (Hemiptera: Aphididae) new to Poland
from the Tatra National Park**

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ABSTRACT: The paper presents four aphid species new to the Polish fauna, collected from the Tatra National Park: *Eulachnus nigricola* (PAŠEK, 1953) (Lachninae); *Brachycaudus (Thuleaphis) sedi* (JACOB, 1964), *Hyadaphis bicincta* BÖRNER, 1942, *Macrosiphum atragenae* HOLMAN, 1980 (Aphidinae). Data on their distribution in Europe, collection localities and biology are presented together with the diagnostic features permitting their identification.

KEY WORDS: Aphids, fauna, Tatra National Park.

INTRODUCTION

SZELEGIEWICZ's catalogue (1968) provides a list of 43 aphid species present in the Tatra Mountains, whereas the most recent check-list of aphids (OSIADACZ & HAŁAJ 2009) lists 48 such species. This testifies to our insufficient knowledge of the fauna of this area and a serious gap in aphidofaunistic research. Since SZELEGIEWICZ's research (1962) there have been no systematic studies of aphids in the Tatra Mountains. This gap in our knowledge is all the more significant because the unique and endemic flora and vegetation of the Tatra Mountains may be the habitat of many rare species.

This paper presents four aphid species new to the Polish fauna recorded by the authors in this area.

All the specimens collected are deposited in the collection of the Department of Zoology of the University of Silesia.

RESULTS

Lachninae

Eulachnus nigricola (PAŠEK, 1953)**Material examined**

11.07.2006; collection locality: the terminal moraine in Kocioł Mułowy, alpine zone, 1800 m. The species feeds on needles of *Pinus nigra*, although solitary apterous females (Fig. 1) were found feeding singly between the needles of *Pinus mugo*.

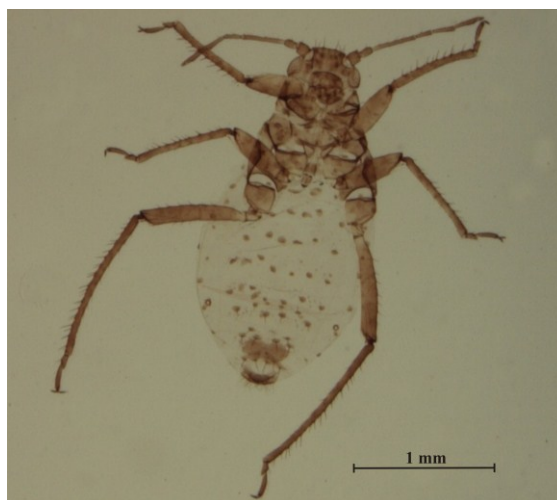


Fig. 1. Apterous viviparous female of *Eulachnus nigricola*.

Remarks

The diagnostic features of this species, distinguishing it from other Polish representatives of the genus, are the long, capitate hairs on the external edge of the hind tibiae; the length of the longest hair in the collected specimens was 1.25-1.57 times the diameter of the tibia in its middle part; the lack of capitate hairs on the III antennal segment; the presence of 8 ventral hairs on the first segment of the hind tarsus.

A Ponto-Mediterranean species, which SZELEGIEWICZ (1978) suggested ought to be present in Poland. In Europe known from Denmark (HEIE 1995), Bulgaria (TASHEV 1961, 1966, 1985), Hungary (HALMAGYI 1968), Moldova (GAVRILOVA & VERESHCHAGIN 1982), the Czech Republic (BINAZZI 1984), Switzerland (LAMPPEL 1988, 2001), Spain (NIETO et al. 1984), Italy (BINAZZI et al. 1995), the Netherlands (PONSEN 1981), Great Britain (BLACKMAN & EASTOP 1994) and Turkey (BINAZZI 1984).

Aphidinae

Brachycaudus (Thuleaphis) sedi (JACOB, 1964)

Material examined

22.08.2005; collection locality: Kamienne Tomanowe, scree on the western slope of the Ciemniak, subalpine zone, 1750 m. A monoecious and monofagous species feeding on *Rhodiola rosea*. Its apterae (Fig. 2) were found feeding on the undersides of the leaves and between the fruits of *R. rosea*. A montane species, it was recorded in Iceland (HEIE 1992).



Fig. 2. Apterous viviparous female of *Brachycaudus sedi*.

Remarks

Its diagnostic features, distinguishing it from other Polish species of the genus, are the spinal hairs and the hairs of antennal segment III longer than 0.5 times the basal diameter of antennal segment III – in the specimens collected this factor was 0.64-0.7 and 0.5-0.55 respectively.

In Europe it has been recorded only in Slovakia (HOLMAN, unpublished) and Norway (TAMBS-LYCHE 1994), and beyond Europe in Israel (JACOB 1964).

Hyadaphis bicincta BÖRNER, 1942

Material examined

16.07.2005; collection locality: the area around Lake Morskie Oko, within the montane zone, ca. 1400 m. It is monophagous on *Lonicera nigra*. The collected aphids, mainly nymphs with a few apterae (Fig. 3), were feeding on the undersides of the leaves of *Lonicera nigra*, in dispersed and not very abundant colonies.

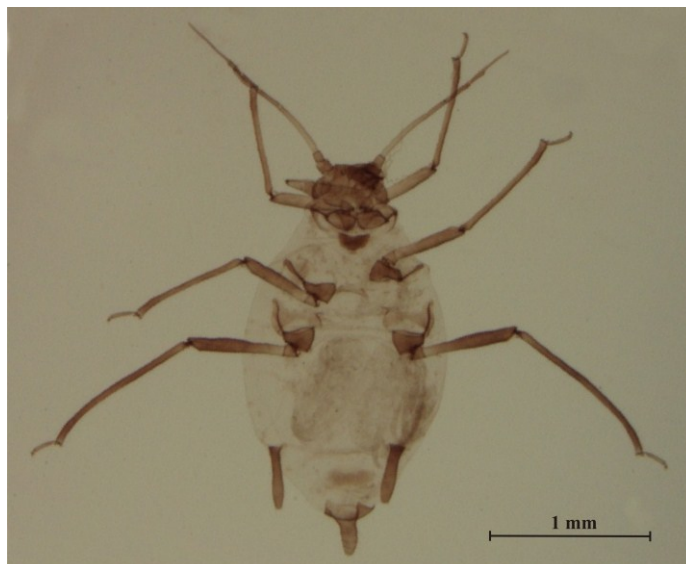


Fig. 3. Apterous viviparous female of *Hyadaphis bicincta*.

Remarks

The diagnostic features, distinguishing it from other Polish species of the genus, are the darkly pigmented, trapezoid prosternal plate; siphunculi pigmented, 0.13-0.14 times the body length, 2.44-2.48 times the length of the second segment of hind tarsus, slightly narrower in the first half (the diameter of the siphunculus at this point is 0.67-0.75 of its diameter at the base).

In Europe it is known only from Austria (BÖRNER 1942, 1952 and BÖRNER & FRANZ 1956), Slovakia (PAŠEK 1956) and the Czech Republic (HOLMAN, unpublished).

***Macrosiphum atragenae* HOLMAN, 1980**

Material examined

13.07.2006; collection locality: Uplaziński Wierszyk (1203 m). A monoecious and monophagous species feeding on *Clematis alpina*. It was found feeding on the undersides of leaves of *C. alpina* near the stem base, in montane mixed forest with willows. Aphids, alate females (Fig. 4) and nymphs, were bright green with a slightly sheen, undusted.

Remarks

Its diagnostic features, distinguishing it from other Polish species of the genus, are the relatively short, bright and pointed cauda, with almost parallel basal sides, 0.35 of the

siphunculi length; the length of the terminal rostral segment 0.9-1.05 of the second segment of the hind tarsus.

In Europe recorded only in the Carpathian Mountains in Romania and Slovakia (HOLMAN 1980, HOLMAN & PINTERA 1981). Beyond Europe it is known from Kazakhstan, where it was collected from *Clematis glauca* (KADYRBKOV 1993, 2002).



Fig. 4. Alate viviparous female of *Macrosiphum atragenae*.

REFERENCES

- BINAZZI A. 1984. Chiave per le specie afidiche piu note delle conifer in Europa. *Redia* **67**: 547-571.
- BLACKMAN R. L., EASTOP V. F. 1994. *Aphids of the Worlds Trees. An identification and information guide*. CAB International VIII, 1024 pp.
- BÖRNER C., FRANZ H. 1956. Die Blattläuse des Nordostalpengebietes und seines Vorlandes. *Österreichische Zoologische Zeitschrift* **6**: 297-411.
- BÖRNER C. 1942. Weitere neue Blattlausarten. *Veröffentlichungen Deutsches Kolonial-und Übersee-Museum* **3**: 259-276.
- BÖRNER C. 1952. *Europae centralis Aphides*. *Mitteilungen Thüringischen Botanischen Gesellschaft, Beiheft* **3(I-II)**: 1-484.
- HALMAGYI L. 1972. Angaben zur Kenntnis der Lachniden-Fauna von Ungarn (Hom., Lachnidae). *Folia Entomologica Hungarica* **25**: 253-261.

- HEIE O.E. 1992. The Aphidoidea (Hemiptera) of Fennoscandia and Denmark. IV. Fauna Entomologica Scandinavica **25**: 1-189.
- HEIE O.E. 1995. The Aphidoidea (Hemiptera) of Fennoscandia and Denmark. VI. Fauna Entomologica Scandinavica **31**: 1-217.
- HOLMAN J. 1980. *Macrosiphum atragenae* sp. n. on *Clematis (Atragena) alpina* from the Carpathias (Homoptera, Aphididae). Acta Entomologica Bohemoslovaca **77**: 20-24.
- HOLMAN J., PINTERA A. 1981. Übersicht der Blattläuse (Homoptera, Aphidoidea) der Rumanischen Sozialistischen Republik. Studie CSAV **15**: 1-125.
- JACOB F.H. 1964. A new species of *Thuleaphis* H.R.L. (Homoptera: Aphidoidea) from Wales, Scotland and Iceland. Proceedings of the Royal Entomological Society, London **33**: 111-116.
- KADYRBEKOV R. 2002. Ecology faunistic review of aphids (Homoptera: Aphidinea) in the Almaty Reserve. Tethys Entomological Research **6**: 77-86.
- KADYRBEKOV R. 1993. Eco-zoogeographic analysis of the aphid fauna (Homoptera, Aphidinea) of the Kazakhstan. Izvestiia Akademii Nauk Respubliki Kazakhskoi (Ser. Biol.) **1**: 15-21 (in Russian).
- LAMPEL G. 1988. *Nasonovia (Kakimia) werderi* n. sp. und weitere für die Schweiz neue Blattlaus-Arten (Homoptera, Aphidina) 4. Mitteilungen Schweizerischen Entomologischen Gesellschaft **61**: 253-294.
- NIETO NAFRIA J. M., DIAZ GONZALES T. E., MIER DURANTE M. P. 1984. Catalogo de los pulgones (Homoptera, Aphidoidea) de Espana y de sus plantas hospedadoras. Universidad de Leon, Leon, 174 pp.
- OSIADACZ B., HALAJ R. 2009. The aphids (Hemiptera: Sternorrhyncha: Aphidinea) of Poland. A distributional checklist. Polish Entomological Monographs **6**: 1-96.
- PAŠEK V. 1956. Die Blattläuse aus dem Polana-Gebiet in der Slowakei. Faunistisch-ökologische Übersicht VUYLH **8**: 117-141 (in Slovak).
- PATTI I., BARBAGALLO S. 1997. Recenti acquisizioni faunistiche sugli Afidi della Sicilia. Bollettino del Laboratorio di Entomologia agraria Filippo Silvestri **53**: 29-84.
- PONSEN M. B. 1981. The digestive system of *Eulachnus brevipilosus* Börner (Homoptera: Aphididae). Mededelingen Landbouwhogeschool Wageningen **3**: 1-14.
- SZELEGIEWICZ H. 1962. Materiały do znajomości mszyc (Homoptera, Aphidina) Tatr i Podhala. Acta Zoologica Cracoviensia **7**: 157-175.
- SZELEGIEWICZ H. 1968. Mszyce – *Aphidodea*. w: Katalog fauny Polski. Warszawa. T. XXI, **4**: 1-316.
- SZELEGIEWICZ H. 1978. *Homoptera – Aphidodea*. Klucze do oznaczania owadów Polski. XVII: 5a.
- TAMBS-LYCHE H. 1994. Studies on Norwegian aphids (Hom., Aphidoidea) III. Fauna Norvegica Ser. B, **41**: 65-83.
- TASHEV D. G. 1985. A catalogue of host plants of the Bulgarian aphids. Annals of the University of Sofia **76**: 85-124.
- TASHEV D.G. 1961. Die Blattläuse (Aphidodea, Homoptera) auf Baumen und Strauchern in Bulgarien. Annals of the University of Sofia **53**: 123-155 (in Bulgarian).
- TASHEV D.G. 1966. Aphids (Homoptera, Aphidodea) of Thrace. Fauna of Thrace **III**: 37-69 (in Bulgarian).
- THEOBALD F. V. 1929. The plant lice or Aphididae of Great Britain 3. Headley Bros., London, VI, 364 pp.
- VERESHCHAGIN B. V., ANDREEV A. V., VERESHCHAGINA A. B. 1985. Aphids of Moldavia. Kishinev, "Shtiintza", 158 pp (in Russian).

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