

Notes on some aphids with nomenclatorial change proposal (Hemiptera, Sternorrhyncha, Aphidomorpha)

by Jacek SZWEDO* & Barbara OSIADACZ**

*Museum and Institute of Zoology, Polish Academy of Sciences, 64 Wilcza Street, PL – 00-679 Warsaw, Poland
<szwedo@miiz.waw.pl>

**Department of Environmental Protection, Poznań University of Life Sciences, 159 Dąbrowskiego Street,
PL – 60-594 Poznań, Poland <barosa@poczta.onet.pl>

Summary. – A new name for the extant aphid genus, *Neomariaella* nom. nov., is proposed to replace praeoccupied name *Szelegiewiczia* Özdikmen & Demir, 2007. The nomenclatorial problems of this name are discussed. An overview of the generic name *Shaposhnikovia* Kononova, 1976, is given, and the content of the extinct families Shaposhnikoviidae and Szelegiewicziidae is briefly discussed.

Résumé. – **Note sur des Aphidiens et proposition de changements nomenclatoraux (Hemiptera, Sternorrhyncha, Aphidomorpha).** Un nouveau nom pour un genre actuel d'aphidien, *Neomariaella* nom. nov., est proposé pour remplacer le genre préoccupé *Szelegiewiczia* Özdikmen & Demir, 2007. Les problèmes nomenclatoraux posés par ce nom sont discutés. Une vue d'ensemble du nom de genre *Shaposhnikovia* Kononova, 1976, est donnée, et le contenu des familles Shaposhnikoviidae et Szelegiewicziidae est brièvement discuté.

Keywords. – Hemiptera, Shaposhnikoviidae, Szelegiewicziidae, Aphididae, *Neomariaella*, new name, *Szelegiewiczia*, *Shaposhnikovia*, homonymy, synonymy.

The classification of aphids is still under debate. The most recent proposal was given by HEIE & WEGIEREK (2009a, b), with number of superfamilies and families, both extinct and extant. Nomenclatorial clarifications have been recently presented by NIETO NAFRÍA *et al.* (2007, 2009). Two aphid generic names call for additional comments and proposal of a new name for one of them is given below. First problem concerns the generic names *Szelegiewiczia* Shaposhnikov, 1985, and *Szelegiewiczia* Özdikmen & Demir, 2007.

Superfamily **Aphidoidea** Latreille, 1802
Family **Aphididae** Latreille, 1802
Subfamily **Macrosiphinae** Wilson, 1910
Genus ***Neomariaella* nom. nov.**

Mariaella Szelegiewicz, 1961: 191; recent (non *Mariaella* Gray, 1855: 51, 62). Type-species: *Mariaella lambersi* Szelegiewicz, 1961, by original designation.

Szelegiewiczia Özdikmen & Demir, 2007: 437, 436; recent (non *Szelegiewiczia* Shaposhnikov, 1985: 44; extinct). *Szelegiewicziana* [sic!]: ÖZDIKMEN & DEMIR, 2007: 437.

The genus name *Szelegiewiczia* Özdikmen & Demir, 2007, was proposed to replace the recent genus name *Mariaella* Szelegiewicz, 1961 (Hemiptera, Sternorrhyncha, Aphidoidea, Aphididae), which is preoccupied by *Mariaella* Gray, 1855 (Mollusca, Gastropoda, Pulmonata, Stylommatophora, Helicarionoidea, Ariophantidae, Girasiinae). However, this name is also praeoccupied by the name *Szelegiewiczia* Shaposhnikov, 1985 (Hemiptera, Sternorrhyncha, Aphidoidea, Szelegiewicziidae; extinct, Lower Cretaceous).

In the note of ÖZDIKMEN & DEMIR (2007: 437) another name, "*Szelegiewicziana* nom. nov." as a "new replacement name" (clearly misspelling) is mentioned by the same authors, with *Szelegiewicziana lambersi* (Szelegiewicz, 1961) as new combination for *Mariaella* Szelegiewicz, 1961. To avoid further confusion and being in accordance with article 60 of the International Code of Zoological Nomenclature, fourth edition (1999), we propose the

name *Neomariaella* **nom. nov.** for the genus *Mariaella* Szelegiewicz, 1961, and its synonymic names. Therefore the specific chresonymy is as follow.

Neomariaella lambersi (Szelegiewicz, 1961)

Mariaella lambersi Szelegiewicz, 1961: 191

Szelegiewiczia lambersi (Szelegiewicz, 1961): ÖZDIKMEN & DEMIR, 2007: 437.

Szelegiewicziana [sic!] *lambersi* (Szelegiewicz, 1961): ÖZDIKMEN & DEMIR, 2007: 437.

The original description of the genus presented by SZELEGIEWICZ (1961) was based on a single sample containing apterous viviparous females and alatae collected in southern Poland, Tatra Mts. (Zakopane – *locus typicus*). Later *Neomariaella lambersi* was given from Tylawa, Eastern Beskidy Mts. (SZELEGIEWICZ, 1967), and Upper Silesia (CZYŁOK *et al.*, 1991) on *Myricaria germanica* (L.) Desv. (Tamaricaceae). It was also recorded from Mongolia: Arkhangai Aimag (HOLMAN & SZELEGIEWICZ, 1972), Slovakia (HOLMAN & PINTERA, 1977), France: Hautes-Alpes (LECLANT, 1978), Romania: Breaza (HOLMAN & PINTERA, 1981), Ukraine: Ukrainian Carpathians (CHUMAK, 1999), Iran: Elburz Range (STARÝ *et al.*, 2001), Kazakhstan: Kirghizskii Khrebet, Western Tian-Shan Mts., Zailiskii Alatau, Northern Tian-Shan Mts. (KADYRBEBKOV, 2002a, b) and Turkey (REMAUDIÈRE *et al.*, 2006).

Neomariaella lambersi (Szelegiewicz, 1961) is a holocyclic species, monoecious, feeding on *Myricaria* spp. According to KADYRBEBKOV (2002a, b), *N. lambersi* is an East Eurasian montane species. In Europe, *N. lambersi* was recorded on *M. germanica*, while in Mongolia on *M. dahurica* DC. and in Kazakhstan on *M. bracteata* Royle. REMAUDIÈRE *et al.* (2006) presented for the first time descriptions of sexual morphs: male and oviparous female, and also viviparous apterae and viviparous alatae, based on the specimens collected in Iran, Turkey and France.

The plant genus *Myricaria* Desv. belongs to the family Tamaricaceae and comprises thirteen species. *Myricaria* species are riparian or lake-side shrubs and naturally occur in eastern Asia, extending to central Asia and Europe, with a suggested center of origin and diversity in the Himalayan region. The general pattern of distribution is patchy rather than continuous. Most of the species are threatened by increasing habitat fragmentation and anthropogenic disturbances like dam and highway construction and over-grazing (WANG *et al.*, 2009). In Europe *Myricaria* is a pioneer shrub of gravel heaps of mountain streams and rivers (foothills and lower subalpine forest). As ephemeral component, *Myricaria germanica* was found in anthropogenic habitats: coal mine and ironwork dumps, and sand-pits. In Polish Carpathians, it is a threatened plant species, vulnerable due to habitat fragmentation and increasing anthropogenic activities. These changes could have negative impact on the *Neomariaella* populations.

The other names calling for some comments concern the generic name *Shaposhnikovia* Kononova, 1976, and extinct families Shaposhnikoviidae and Szelegiewiczziidae, elevated to this classification level by HEIE & WEGIEREK (2009a, b).

Superfamily **Palaeoaphidoidea** Richards, 1966

Family **Shaposhnikoviidae** Kononova, 1976

Genus ***Shaposhnikovia*** Kononova, 1976

Shaposhnikovia Kononova, 1976: 122. Type species: *Shaposhnikovia electri* Kononova, 1976: 122, by original designation and monotypy.

Shaposhnikovia: AIZENBERG, 1954: 9 (*nomen nudum*); EASTOP & HILLE RIS LAMBERS, 1976: 395; REMAUDIÈRE & REMAUDIÈRE, 1997: 263.

The name "*Shaposhnikovia*" was used by AIZENBERG (1954), however it is a *nomen nudum* as stated by EASTOP & HILLE RIS LAMBERS (1976) and REMAUDIÈRE & REMAUDIÈRE (1997);

this paper was printed (and distributed) as a manuscript – summary of doctoral (candidate in Russian nomenclature) thesis (NIETO NAFRÍA *et al.*, 2009). The genus *Shaposhnikovia* Kononova, 1976, was described to comprise extinct species *Shaposhnikovia electri* Kononova, 1976, from the Upper Cretaceous Tajmyrian amber. This genus was placed in a newly described family Shaposhnikoviidae Kononova, 1976 (KONONOVA 1976). WEGIEREK (1989) described the subfamily Szelegiewiczziinae Wegierek, 1989, to comprise genus *Szelegiewiczzia* Shaposhnikov, 1985, and some other extinct genera of aphids in this group. Recently, HEIE & WEGIEREK (2009a, b) elevated rank of these subfamilies to familial level. According to HEIE & WEGIEREK (1998) the family Shaposhnikoviidae comprises only the genus *Shaposhnikovia*. The family Szelegiewiczziidae comprises extinct genera: *Brimaphis* Wegierek, 1989, *Sepiaphis* Wegierek, 1989, *Szelegiewiczzia* Shaposhnikov, 1985, *Tinaphis* Wegierek, 1989 and *Xenoaphis* Wegierek, 1989.

REFERENCES

- AIZENBERG E. E., 1954. – Novye dannye po sistematike i faune tleï. [New data on systematics and fauna of aphids.] *Avtoreferat dissertatsii na soiskanie uchenoi stepeni kandidata biologicheskikh nauk. Moskovskii Gosudarstvennyi Universitet imeni M.V. Lomonosova, Biologo-pochvennyi fakul'tet*, Moskva. 10 p. [In Russian].
- CHUMAK V. O., 1999. – Popelytsi (Homoptera, Aphidinea) Ukraïnskikh Karpat. [Aphids (Homoptera, Aphidinea) of the Ukrainian Carpathians.] *Avtoreferat dissertatsii na zdobyttya naukovogo stupenya kandidata biologichnykh nauk. Natsional'na Akademiya Nauk Ukraïny, Institut Zoologii im. Shmal'gauzena NAN Ukraïny*. Kyïv. 18 p. [In Ukrainian].
- CZYLOK A., GORCZYCA J., HAŁAJ R., KLIMASZEWSKI S. M. & WOJCIECHOWSKI W., 1991. – Fauna mszyc (Homoptera, Aphidodea) zwałowisk odpadów węglowych i cynkowych województwa katowickiego. *Acta Biologica Silesiana*, **18** (35) : 108-117. [The fauna of aphids (Homoptera, Aphidodea) of coal and zinc waste dumps in the province of Katowice] [In Polish with English abstract].
- EASTOP V. F. & HILLE RIS LAMBERS D., 1976. – *Survey of the World's Aphids*. Dr. W. Junk b.v., Publishers, The Hague, 573 p.
- GRAY J. E., 1855. – *Catalogue of Pulmonate or Air-breathing Mollusca in the Collection of the British Museum*. London: British Museum, 192 p.
- HEIE O. E. & WEGIEREK P., 1998. – A list of fossil aphids (Homoptera: Aphidinea). *Annals of the Upper Silesian Museum in Bytom*, **8-9**: 159-192.
- 2009a. – A classification of the Aphidomorpha (Hemiptera: Sternorrhyncha) under consideration of the fossil taxa. *Redia*, **92**: 69-77.
- 2009b. – Diagnoses of the higher taxa of Aphidomorpha (Hemiptera Sternorrhyncha). *Redia*, **92**: 261-269.
- HOLMAN J. & PINTERA A., 1977. – Aphidodea. Check List Enumeratio Insectorum Bohemoslovakiae. *Acta Faunistica Entomologica Musei Nationalis Pragae*, **15** (Supplementum 4): 100-116. [In German].
- 1981. – *Übersicht der Blattläuse (Homoptera, Aphidoidea) der Rumänischen Sozialistischen Republik*. Studie Československé Akademie Věd, Prague, 125 p.
- HOLMAN J. & SZELEGIEWICZ H., 1972. – Weitere Blattläuse (Homoptera, Aphidodea) aus der Mongolei. *Fragmenta Faunistica*, **18** (1): 1-22. [In German with Polish and Russian abstracts].
- INTERNATIONAL COMMISSION OF ZOOLOGICAL NOMENCLATURE, 1999. – *International Code of Zoological Nomenclature*. Fourth Edition. The International Trust for Zoological Nomenclature, London, 306 p.
- KADYRBEKOV R. KH., 2002a. – Materialy po faunie tleï (Homoptera, Aphididae) kazakhstanskoï chasti Zapadnogo Tyan'-Shanya. [About the aphid fauna (Homoptera, Aphididae) of the West Tien-Shan (Kazakhstan part).] *Tethys Entomological Resaearch*, **6**: 65-76. [In Russian with English abstract].
- 2002b. – Itogi izucheniya fauny tleï (Homoptera, Aphidinea) Almatinskogo gosudarstvennogo zapovednika. [Ecology faunistic review of aphids (Homoptera, Aphidinea) in the Almaty reserve.] *Tethys Entomological Resaearch*, **6**: 77-86. [In Russian with English abstract].

- KONONOVA E. L., 1976. – Pozdnemelovye vymershie semeïstva tleï. *Paleontologicheskii Zhurnal*, 1976, **3**: 117-126. [In Russian]. Published in English as: KONONOVA E. L., 1976. – Extinct aphid families (Homoptera: Aphidinea) of the Late Cretaceous. *Paleontological Journal*, **10** (3): 117-126.
- LECLANT F., 1978. – *Etude bioécologique des aphides de la région méditerranéenne. Implications agronomiques*. Thèse de Doctorat d'état. Académie de Montpellier. Université des sciences et techniques du Languedoc, Montpellier, 318 p. + 43 p.
- NIETO NAFRÍA J. M., FAVRET C., AKIMOTO S., BARBAGALLO S., CHAKRABARTI S., MIER DURANTE M. P., MILLER G. L., PÉREZ HIDALGO N., QIAO G. X., SANO M., STEKOLSHCHIKOV A. V. & WEGIEREK P., 2009. – Several nomenclatural clarifications on genus-group names in the Aphididae (Hemiptera Sternorrhyncha). *Redia*, **42**: 119-123.
- NIETO NAFRÍA J. M., PÉREZ HIDALGO N. & MIER DURANTE M. P. 2007. – New synonyms and several nomenclatural clarifications on family-group names in the Aphidiidae (Hemiptera Sternorrhyncha). *Zootaxa*, **1629**: 51-55.
- ÖZDIKMEN H. & DEMIR E., 2007. – New substitute names for three preoccupied homopteran genera: *Deltometopus* Williams, 1977, *Mariaella* Szelegiewicz, 1961 and *Progonus* Popov, 1986 (Homoptera). *Munis Entomology & Zoology*, **2** (2): 436-438.
- REMAUDIÈRE G. & REMAUDIÈRE M., 1997. – *Catalogue of the world's Aphididae (Homoptera, Aphidoidea)*. INRA Editions, Versailles, 473 p.
- REMAUDIÈRE G., TOROS S. & OZDEMIR I., 2006. – New contribution to the aphid fauna of Turkey (Hemiptera, Aphidoidea). *Revue française d'Entomologie (N.S.)*, **28** (2): 75-96.
- SHAPOSHNIKOV G. CH., 1985. – The main features of evolution of aphids. In: *Evolution and biosystematics of aphids. Proceedings of the International Aphidological Symposium at Jabłonna, 5 – 11 April 1981*: 19-99.
- STARÝ P., REMAUDIÈRE G., GONZALES D. & SHAHROKHI S., 2000. – A review and host associations of aphid parasitoids (Hym. Braconidae, Aphidiinae) of Iran. *Parasitica*, **56**: 15-41.
- SZELEGIEWICZ H., 1961. – A new aphid genus and species on *Myricaria germanica* (L.) Desv. (Homoptera, Aphididae). *Bulletin de l'Academie polonaise des Sciences, Classe II, Sciences biologiques*, **9**: 191-194.
- 1967. – Materiały do fauny mszyc (Homoptera, Aphidodea) Polski. II. *Fragmenta Faunistica*, **14** (3): 45-91. [Materials to the knowledge of Polish aphids (Homoptera, Aphidodea). II] [In Polish, with German and Russian abstracts].
- WANG Y., LIU Y., LIU S. & HUANG H., 2009. – Molecular phylogeny of *Myricaria* (Tamaricaceae): implications for taxonomy and conservation in China. *Botanical Studies*, **50**: 343-352.
- WEGIEREK [VENGEREK] P., 1989. – Novye vidy mezozoïskikh tleï (Shaposhnikoviidae, Homoptera). *Palaeontologicheskii Zhurnal*, 1989, **4**: 43-51. [In Russian]. Published in English as: WEGIEREK P., 1989. – New species of Mesozoic aphids (Shaposhnikoviidae, Homoptera). *Paleontological Journal*, **23** (4): 43-51.
-