Three new records of eriophyoid mites (Acari: Eriophyoidea) from Iran

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Received: 10.03.2014 • Accepted: 09.09.2014 • Published Online: 04.05.2015 • Printed: 29.05.2015

Abstract: One genus and 3 species are reported as new records for the fauna of Iran. They are Eriophyes tiliae (Nalepa, 1890) on Tilia begonifolia (Tiliaceae); Aceria tuberculatus Nalepa, 1891 on Tanacetum parthenium (Asteraceae); and Leipothrix liroi (Roiv., 1947) Jočić and Petanović (2012) on Primula sp. (Primulaceae).

Key words: New record, Eriophyidae, fauna, Iran

Most eriophyoid mite species are highly host-specific (Skoracka et al., 2010) and occur on various types of flowering plants, conifers, broadleaf trees, and shrubs (Oldfield, 1996). Eriophyoid mites are of small size, and their length is usually 80–500 µm (Knihinicki and Boczek, 2003). Many species have great economic importance because they induce growth abnormalities on plants or transmit plant viruses (Oldfield and Proeseler, 1996; Westphal and Manson, 1996). Until 1998, about 4000 eriophyoid species were known worldwide (De Lillo and Amrine, 1998; unpublished data), and many more were waiting to be discovered. Reviewing taxonomic literature (e.g., Xue et al., 2009; Kamali and Jalaeian, 2011; Xue et al., 2011; Lotfolahi et al., 2012; Xue et al., 2012; Kamali and Jalaeian, 2013; Xue et al., 2013) reveals that knowledge of Iranian eriophyoids is still limited. So far, about 120 species have been reported from Iran. As the fauna of many areas of Iran has not yet been explored, it is expected that further research will add more species to the eriophyoid fauna of Iran.

During the seasonal growth period of 2013, a field survey was conducted in Ali Abad Katool, Golestan Province, Iran (Figures 1 and 2), where there had been no previous study of eriophyoid fauna. A variety of plant species including shade, ornamental, and weed plants in different locations in the Ali Abad Katool region were randomly investigated and sampled for potential eriophyoid symptoms and the presence of mites (Figure 3). The infested plant materials were placed in plastic bags inside an icebox and transferred to the laboratory. The specimens were recovered from plant materials by means of direct observation under a dissecting microscope. Collected mites were preserved in 70% ethyl alcohol and later mounted, and freshly collected specimens were placed in lactophenol solution for 5–7 days at room temperature and then mounted in Hoyer's medium for further study under an Olympus CX40 microscope using phase contrast at 40× and 100× objectives with a digital camera (Digital SIGHT DS-5Mc cooled camera head) attached and connected to a computer. Systematic classification and synonyms follow those of Amrine et al. (2003).

Voucher specimens were deposited as slide-mounted specimens at the Department of Plant Protection, Faculty of Agriculture, Ferdowsi University of Mashhad, and in the collection of the Department of Pests of Ornamental Plants at the Research Institute of Horticulture, Skierniewice, Poland.

Three species, namely Eriophyes tiliae Nalepa, 1890 on Tilia begonifolia (Tiliaceae); Aceria tuberculatus Nalepa, 1891 on Tanacetum parthenium (Asteraceae); and Leipothrix liroi (Roiv., 1947) Jočić & Petanović (2012) on Primula sp. (Primulaceae), are reported for the first time from Iran. The genus Leipothrix Keifer, 1964 is reported for the first time from Iran. Except for the species Eriophyes tiliae (Nalepa, 1890), which induces nail galls on the upper leaf surfaces of the lime tree, the species were vagrants on their host plants.

Family Eriophyidae Nalepa, 1898
Subfamily Eriophyinae Nalepa, 1898
Tribe Eriophyini Nalepa, 1898
Genus Eriophyes von Siebold 1851
Eriophyes tiliae Nalepa, 1890

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Figure 1. Map of Golestan Province. Ali Abad Katool.

Figure 2. Map of Iran, showing Golestan Province and the collection site.
Syn.: *Eriophyes tiliae tomentosae* Nalepa 1918
*Eriophyes tiliae vartiliaetomentosae* Nalepa 1918
*Eriophyes rudis* Nalepa 1918
*Eriophyes tiliae rudis* Nalepa 1918
*Eriophyes lateannulata* Schulze 1918

**Material examined:** 5 ♀♀ and 3 ♂♂ collected from *Tilia begonifolia*, der von Steven (1856) (Tiliaceae), Ali Abad Katool (36°54′N, 54°53′E) in Golestan Province of Iran, 140 m a.s.l., 03 July 2013, coll. Ali Gol.

**Relation to host:** *Eriophyes tiliae* induces nail galls on the upper leaf surfaces of the lime tree (Figure 4).

**Distribution:** Austria, Bosnia and Herzegovina, Britain, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Kaliningrad Region, Latvia, Lithuania, Luxembourg, Macedonia, Portugal, Poland, Russia North, Russia Northwest, Slovenia, Spain, Netherlands, Yugoslavia, East Palearctic and Nearctic regions (www.faunaeur.org).

**Family Eriophyidae** Nalepa, 1898
**Subfamily Eriophyinae** Nalepa, 1898
**Tribe Aceriini** Amrine & Stansy, 1994
**Genus Aceria** Keifer, 1944
*Aceria tuberculatus* Nalepa, 1891 (Figure 5)

**Material examined:** 3 ♀♀ and 1 ♂♂ from *Tanacetum parthenium* (feverfew) (Asteraceae), Ali Abad Katool (36°54′N, 54°53′E) in Golestan Province of Iran, 140 m a.s.l., 21 September 2013, coll. Ali Gol.

**Relation to host:** Vagrant.

**Distribution:** Austria (www.faunaeur.org).

**Family Eriophyidae** Nalepa, 1898
**Subfamily Phyllocoptinae** Nalepa, 1892
**Tribe Phyllocoptini** Nalepa, 1892
**Genus Leipothrix** Keifer, 1964
*Leipothrix liroi* Jočić & Petanović, 2012

**Syn.:** *Epiterimrus liroi* Roiv., 1947 (Figure 6)

**Material examined:** 5 ♀♀ collected from *Primula* sp. (Primulaceae), Ali Abad Katool (36°54′N, 54°53′E) in Golestan Province of Iran, 140 m a.s.l., 28 July 2013, coll. Ali Gol.

**Relation to host:** Vagrant, no apparent damage was observed.

**Distribution:** Finland, Sweden, and former Yugoslavia (www.faunaeur.org).

**Acknowledgments**
We are grateful to Dr Akbarloo (Natural Resource and Agricultural University of Gorgan) for identification of the plant species. This research was partly supported by Ferdowsi University of Mashhad, Iran.
Figure 5. Digital micrographs of *Aceria tuberculatus* (Nalepa 1891): A) Prodorsal shield; B) coxigenital region (epigynum visible); C) empodium; D) male genitalia. Scale bar: 50 μm for A; 25 μm for B, C, and D.
Figure 6. Digital micrographs of *Leipothrix liroi* (Roiv., 1947) n. comb. Jočić & Petanović (2012): A) Dorsal view; B) coxigenital region (epigynum visible); C) legs; D) ventral view of female posterior region. Scale bar: 50 μm for A; 25 μm for B and D; 10 μm for C.
References


