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Research Note

Two New *Alchemilla* L. (*Rosaceae*) Records for the Flora of Turkey

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Abstract: : Two *Alchemilla* L. (*Rosaceae*) species from north-east Anatolia are described as new records for Turkey.

Key Words: *Alchemilla*, *Rosaceae*, new record, Turkey

Türkiye Florası için İki Yeni *Alchemilla* L. (*Rosaceae*) Kayıtı

Özet: Kuzeydoğu Anadolu'da gerçekleştirilen bu çalışmada 2 *Alchemilla* (*Rosaceae*) türü Türkiye için yeni kayıt olarak saptanmıştır.

Anahtar Sözcükler: *Alchemilla*, *Rosaceae*, yeni kayıt, Türkiye

Introduction

A critical and taxonomically difficult group, the genus *Alchemilla* L., which is distributed mainly in the Holarctic but occurs also on the mountains of East and South Africa as well as Madagascar, South India, Sri Lanka and Java, comprises more than 1000 species (Izmailow, 1981). Investigations on this genus have great theoretical importance (in studies on apomixis) and are also important from a practical point of view, especially for plant sociologists who are describing plant communities (Pawlus and Lovelius, 1989). Many species of *Alchemilla* indicate strong connections with the particular ecological terms, this being particularly easy to observe in the mountains, where these plants form associations. High-mountain species grow on limestones and sandstones. Parallel to the species growing in a narrow ecological scale are those of frequent occurrence on different soils and in various conditions of humidity and shade, in the meadows, scrub and forests, and on verges. Some species of this genus such as *A. erythropoda* Juz. and *A. mollis* Rothm. have wide geographical and ecological occurrence and generally are included in the composition of the meadow communities.

In the Flora of Turkey the genus is represented by some 50 species belonging to three subsections and six series of Sect. *Alchemilla* Rothm. (Pawłowski and Walters, 1972). Most of them are found in north-east Anatolia. Extensive studies on Turkish *Alchemilla* during the past seven years have revealed 7 new species (Kalheber, 1994; Hayırlıoğlu-Ayaz and Beyazoğlu, 1997b) and 7 new records (Kalheber, 1994; Hayırlıoğlu and Beyazoğlu, 1997c) besides cytological investigation (Hayırlıoğlu-Ayaz and Beyazoğlu, 1997a; Hayırlıoğlu and Beyazoğlu, 1997d; Hayırlıoğlu and Beyazoğlu, 1997e). Consequently, the number of *Alchemilla* species in Turkey reached 67 (Hayırlıoğlu-Ayaz, 2000).

In this paper, two more *Alchemilla* species are added as new records for Turkey, in the following systematic arrangement:

Section: *Alchemilla* Rothm.

Subsection: *Chirophyllum* Rothm.

Series: *Sericeae* Buser

1. *Alchemilla chlorosericea* (Buser) Juz.

Subsection: *Heliodrosum* Rothm.

Series: *Vulgares* Buser

2. *Alchemilla glabricaulis* Lindb.

Materials and Methods

The study in based on herbarium specimens collected in north-east Anatolia in July and August 1994 and 1995. Descriptions were made with the aid of the Flora of Turkey (Pawłowski and Walters, 1972) and Juzepczuk (1941), Walters and Pawłowski (1968), and Fröhner (1969). The morphological drawings were made with a drawing attachment. Specimens were deposited at the Herbarium at Karadeniz Technical University, Department of Biology (KTÜB).

Results

A. chlorosericea (Buser) Juz. apud Grossh., Fl. Kavk. IV (1934), 322 (Fig. 1).

Perennial, yellowish green plant. Stems numerous, slender, 8-15 cm, erect, often leafless below, with adpressed hairs along the entire length, but pubescence looser in inflorescence. Radical leaves 3.2-3.9 cm wide, reniform, with wide sinus, dissected to base into 7 lobes; the lower lobes oblong-ovate, the upper lobes oblong; with many incisions; 4-5, (long, narrow) linear-lanceolate or lanceolate teeth. Upper leaf surface glabrous; lower surface thinly silky-hairy. Petioles 4.8-5.5 cm long, densely covered with adpressed silky hairs. Cauline leaves small. Inflorescence narrow, rather many flowered; flowers 3.5-4 mm wide; hypanthium obconoid, 1.5 mm long, slightly adpressed silky-hairy at base; sepals as long as hypanthia or slightly longer, silky-hairy only in upper part; epicalyx shorter and narrower than sepals; pedicels silky-hairy. Flowering July-August. Moraines, rocks, mountain slopes in the alpine belt.

Type: [Helsingfors]. Described from Diklo in Tushetiya (U.S.S.R.).

A8 Rize: Between İkizdere and Ispir, north-eastern slopes of Ovit Dağı (together with Carex spp., *Primula elatior* subsp. *meyeri*), 3000 m, 14.07.1993, S. Hayırlıoğlu 21, KTÜB.

General Distribution: Caucasia. Euxine element (Fig. 2).

A. chlorosericea is similar to *A. sericea* Willd., but differs in the following aspects: the whole plant more weakly pubescent, yellowish green, leaves glabrous above, thinly silky-hairy beneath; hypanthia slightly silky-hairy at base; hairy sepals and epicalyx only in upper part.

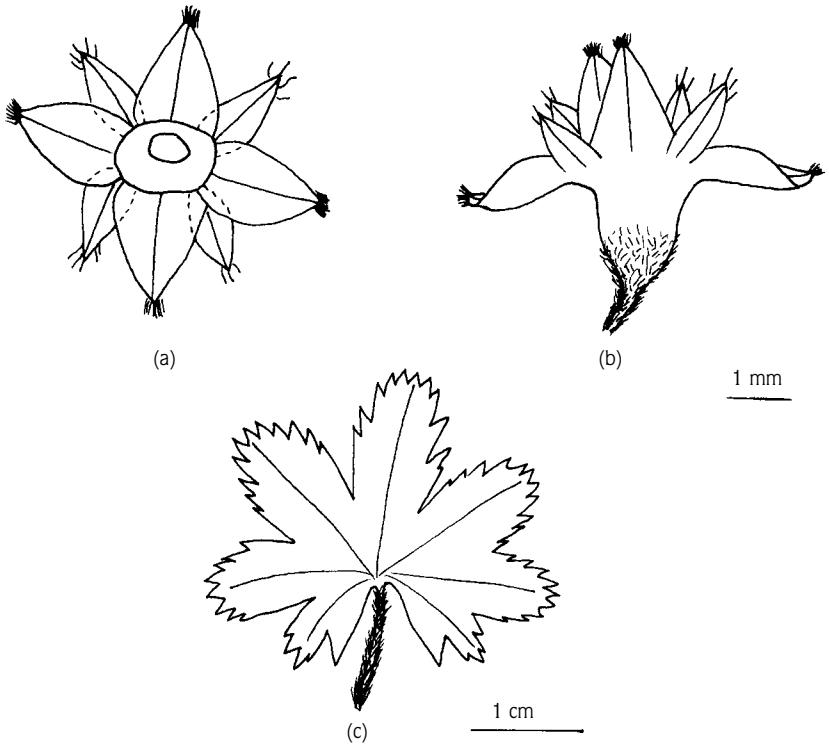

Figure 1. *Alchemilla chlorosericea*; a. top view of flower, b. side view of flower, c. leaf shape.

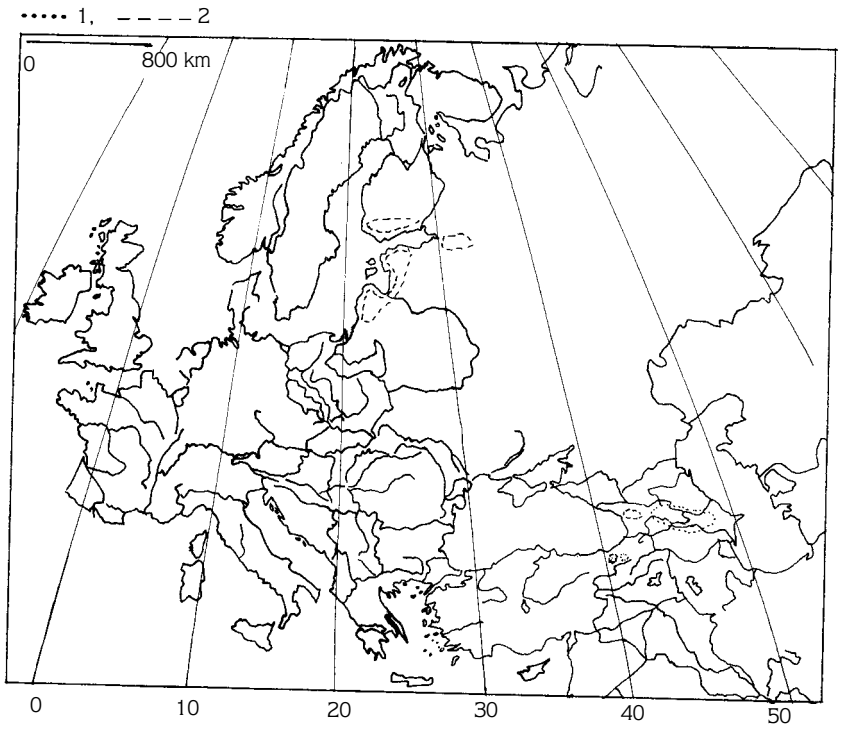

Figure 2. Geographical distribution of *Alchemilla* L. species. 1: *Alchemilla chlorosericea*, 2: *Alchemilla glabricaulis*.

A. glabricaulis Lindb., Acta Soc. Sci. Fenn. 37 (10): 3 (1909) (Fig. 3).

Perennial, green plant. Stem 7.5-25 cm, slightly ascending at base, often delicate, completely glabrous and

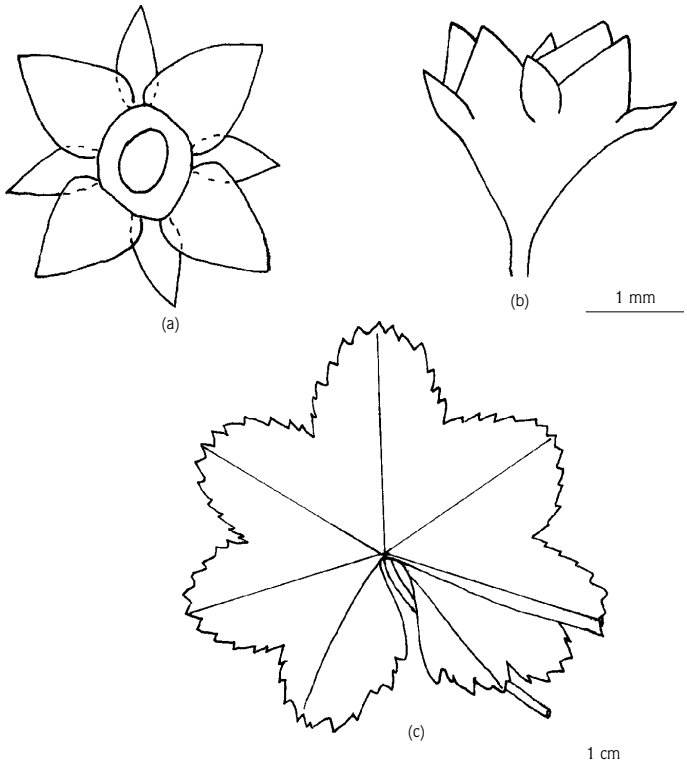

Figure 3. *Alchemilla glabricaulis*: a. top view of flower, b. side view of flower, c. leaf shape.

usually only slightly exceeding radical leaves. Radical leaves 3.7-4.3 cm wide, reniform or orbicular-reniform, 7-9 lobed; lobes short, broadly triangular, with short incisions and 5-8 short, wide obliquely semiovate teeth. Leaves sparsely hairy above, sparsely adpressed hairy below only at upper part main veins, otherwise glabrous. Petioles of radical leaves completely glabrous. Inflorescence narrow, with rather few flowers; flowers 2-3 mm wide; hypanthium 1-1.2 mm long, glabrous, sepals as long as the hypanthium, glabrous, epicalyx shorter than the sepals and glabrous; pedicels glabrous. Flowering July. Banks of mountain streams and grassy slopes.

Type: [Leningrad]. Described from the vicinity of Tambov (U.S.S.R.).

A8 Trabzon: Kemer above Çaykara (together with *Festuca* spp., *Bellis perennis*), 2600 m, 7. 07. 1993, S. Hayırlıoğlu 9, KTÜB.

General Distribution: Caucasia, N.E. Europe and the European part of U.S.S.R. Endemic (Fig. 2).

Alchemilla glabricaulis is similar to *A. straminea* Bus., but differs in its stems generally only slightly exceeding radical leaves, glabrous on leaf teeth, leaf lobes with short incisions, and wide teeth.

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