

Study of *Alchemilla incisa* (Rosaceae) in Romania

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Abstract. The species *Alchemilla incisa*, with a rather undetermined taxonomic status within the Romanian botanical literature, is thoroughly analyzed from the taxonomic, ecological, chorological, coenological and even plantlet point of view.

Key words: *Alchemilla incisa*, Romania

Introduction

The PhD thesis of this paper's second author deals with the difficult and prolific genus *Alchemilla*. First of all, the species of this genus were studied thoroughly in the Parâng Massif (Meridional Carpathians). So far, eight species have been identified, among which *A. incisa*, a rarer species whose presence was even contested in Romania and very little is known about it in the Romanian specialized literature, a species which makes the topic of this paper.

Material and methods

The material was collected in different periods and this allowed us to find the plants in various development stages; the best time is autumn when there are fruits. In order to see the cohabitants, we had to study the same habitats several times. The material was green when studied and then preserved by pressing; it is stored at CRAI and BUCA. To identify it, we used the modern specialized literature and the genuine material in the collections for comparison.

The authors of the species are mentioned according to the present standards (Brummitt & Powell 1992). Chorology is presented in an *Atlas Florae Europaeae* map, and UTM indexes are also used (Lehrer & Lehrer 1990).

Results and discussions

***Alchemilla incisa* Buser 1892, Scrin. Fl. Select. 11: 255.**

Syn.: *A. gracilis* Buser 1894, Alchim. Valais.: 11, non Opiz; *A. glaberrima* F.W. Schmidt var. *incisa* (Buser) Briq. 1899, in Burnat, Fl. Alp. Marit. 3: 145; *A. glaberrima* subsp. *firma* (Buser) Gams var. *gracilis* (Buser) Gams 1927, in Hegi, Ill. Fl. Mitteleur. 4(2): 958; *A. glaberrima* subsp. *incisa* (Buser) Palitz 1936, Tisia 1: 111, 115; Borza 1947, Consp. Fl. Rom. 1: 144; Buia 1956, Fl. Reipubl. Popularis Romanicae 4: 686; *A. vallesiaca* Rothm. 1937, Repert. Spec. Nov. Regni Veg. 42: 168; ? *A. fissa* auct. (Pócs 1962), non Günther & Schummel.

Description. Short-sized plant, with an ascendant or erected stem, 5–25 cm (Fig. 1), glabrous, ex-

cept for the first internode which is covered by few appressed hairs (seldom on the second internode) (Fig. 2). Reniform to suborbicular basal leaves, 2–10 cm wide, glabrous on both sides of the lamina, abaxial, with several appressed hairs on the teeth margin and on the distal half of the nervures. The lamina is divided into 1/3–1/2 in (5) 7–9 triangular-elliptic or elongated-elliptic lobes, narrowed to the base, with U-shaped incisions (Fig. 3). Basal leaves petioles with appressed hairs. Glabrous inflorescence. Obconic to short campanula-like hypanthium. The sepals ovate-triangular, acute and longer than the hypanthium. The epicalyx-segments of the same length as the sepals, but obviously narrower. The achene tip exerts out of the disk.

The plantlet (Fig. 4) has opposed, elliptic and glabrous cotyledons. Protophyle with 5 superficial lobes. The petioles of the first leaves are glabrous, and have an elliptic shape in the transversal section. The stipules are whitish, membranous, with few rare hairs to the tip. The leaf lamina is \pm orbicular, glabrous, and abaxial with several appressed hairs on the teeth margin and on the distal half of the nervures. The plantlets were noticed both in August and in October.

Taxonomy. In early Romanian specialized literature, it is mentioned under the name *Alchemilla glaberrima* subsp. *incisa* (Borza 1947; Buia 1956). Later

on, it appears subordinate as *A. pyrenaica* Dufour subsp. *incisa* (Buser) Beldie (Beldie 1977), and in the last synthesis it is considered as a species erroneously introduced into the literature referring to the Romanian flora, under “*A. incisa* Bab.” (Ciocârlan 2000). In *Flora Europaea* (Walters & Pawłowski 1968) the presence of this species in our country is not made clear. Only in the *Atlas Florae Europaeae* (Kurtto & Fröhner in press) the species is mentioned again in the Romanian flora, which is confirmed by us in this paper. According to the botanical literature referring to the Parâng Massif (FR-4¹), where we have worked lately, *A. incisa* was probably misidentified as *A. fissa* Günther & Schummel, which is mentioned by Pócs (1962) on this mountain, but has not been confirmed yet. The stems and the petioles of *A. fissa* are glabrous (very seldom the internal leaves have some appressed hairs on the petioles). The lamina of the leaves is divided up to 1/2–3/4 in 5–7 lobes, often truncated to the top and narrowed to the bottom. The lobes present 4–6 big teeth on each side, with inclination towards the median tooth which is shorter.

Ecology. *A. incisa* (Fig. 5) is a mesophyte-mesohygrophyle species, seldom met, from the subalpine to alpine region. It grows in sunny habitats, meadows

¹ See Chorology



Figs 1-5. *Alchemilla incisa*:

1, general view; 2, detail – stem and leaf stalks; 3, basal leaf; 4, plantlet; 5, whole plant.

on the steep slopes, weeded areas, detritus regions, rocky and more or less wet places. It can be found on limestone- and base-rich soils, up to base-poor soils, occasionally slightly acid and more or less rich in nutritive substances.

Chorology. In Romania, the species is known from several locations (Fig. 6): Maramureş County: LN-1, LN-3 (Rodna Mts: Pietrosu Mare, Inău, Ştiol, Piatra Rea); Alba County: FR-3 (Sebeş Mts: Iezeru Surian); Sibiu County: KL-4 (Făgăraş Mts: Suru, Bâlea Lake); Prahova County: LL-1, LL-2, LL-4 (Bucegi Mts); Caransebeş County: FR-2 (Ţarcu, Godeanu Mts); Hunedoara County: FR-4 (Parâng Massif: Coasta lui Rus, Şaua Huluzului and Găuri Mt), where it was identified by us in 2006. In the Parâng Massif, it grows in the subalpine floor, at an altitude of about 1945 m (on a northern slope, in a meadow of *Potentillo ternatae* – *Festucetum airoidis* Boşcaiu 1971, in a rocky region oriented N-W, and in a juniper area, together with other species of *Alchemilla*: *A. flabellata* Buser, *A. crinita* Buser, *A. connivens* Buser, and *A. glabra* Neygenf.). It is abundant along the paths within the juniper areas, on the Găuri Mt (1800–1900 m), on northern and northwestern slopes, and in some parts of the same massif.

Coenology. *A. incisa* is part of several associations and floristic combinations.

In *Seslerio bielzii* – *Caricetum sempervirentis* Puşcaru & al. 1956, on Coasta lui Rus, on the western slope, it cohabitates with *Carex sempervirens* +1, *Sesleria bielzii* 1-2, *Alchemilla flabellata* +1, *Hieracium alpinum* subsp. *alpinum* +, *Vaccinium*

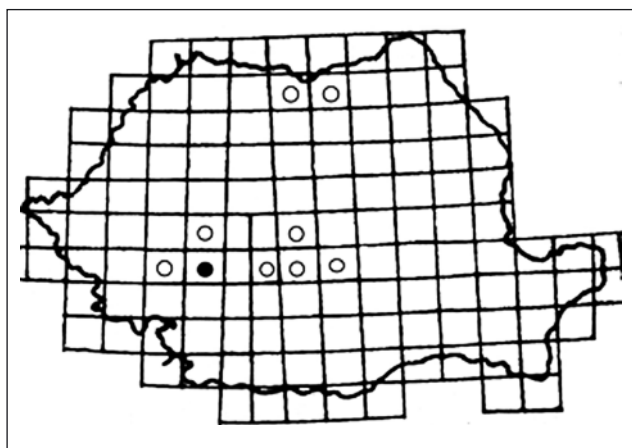


Fig. 6. Chorology of the species *A. incisa* in the Romanian Carpathians:

● – personal data (FR-4); ○ – literature data.

myrtilus 1-2, *V. gaultherioides* 1-2, *Bruckenthalia spiculifolia* +1, *Campanula serrata* +, *Trifolium repens* +, *Thymus balcanus* +1, *Homogyne alpina* +, *Saxifraga paniculata* +1, *S. aizoides* +1, *S. moschata* +, *Agrostis rupestris* +1, *Soldanella hungarica* subsp. *hungarica* +, *Silene pusilla* subsp. *pusilla* +1, *Parnassia palustris* +, *Viola biflora* +, *Acinos alpinus* subsp. *alpinus* +.

Under the Coasta lui Rus, N-W slope with few rocks, it was identified in *Potentillo ternatae* – *Festucetum airoidis* Boşcaiu 1971 association, with the following floristic composition: *Festuca airoides* 2-3, *Agrostis rupestris* +1, *Anthoxanthum odoratum* +1, *Potentilla ternata* +1, *Phyteuma confusum* +, *Thamnolia vermicularis* +1, *Euphrasia minima* subsp. *tatrae* +, *E. salisburgensis* +1, *Saxifraga paniculata* +, *S. aizoides* +, *Hieracium alpinum* subsp. *alpinum* +, *Vaccinium vitis-idaea* +1, *Galium anisophyllum* +, *Festuca nigrescens* +, *Selaginella selaginoides* +, *Luzula spicata* +, *Minuartia verna* subsp. *verna* +, *Deschampsia flexuosa* +, *Gentiana verna* +, *Botrychium lunaria* +, *Carex atrata* +, *C. sempervirens* +, *Alchemilla incisa* +1, *Trifolium repens* +, *Asplenium ramosum* +, and *Veronica aphylla* +.

On the Găuri Mt, in an open habitat with big rocks, *A. incisa* grows together with the following species: *Alchemilla flabellata* +1, *Saxifraga paniculata* +1, *Selaginella selaginoides* +, *Cerastium alpinum* subsp. *lanatum* +, *Veronica aphylla* +, *Primula minima* +, *Euphrasia minima* subsp. *tatrae* +, *Scabiosa columbaria* subsp. *pseudobanatica* +, *Thymus balcanus* +, *Acinos alpinus* subsp. *alpinus* +, *Galium anisophyllum* +, *Homogyne alpina* +, and *Trifolium repens* +.

We have also recorded it on the same Găuri Mt, on a rocky slope with unfinished vegetation, under the junipers, with the following floristic composition: *Alchemilla incisa* 1-2, *A. crinita* +, *Saxifraga paniculata* +1, *S. moschata* +1, *Scabiosa columbaria* subsp. *pseudobanatica* +1, *Cerastium arvense* +, *Veronica aphylla* +, *Hieracium alpinum* subsp. *alpinum* +, *Asplenium ramosum* +, *Gentiana praecox* +, *Cystopteris fragilis* +, *Draba lasiocarpa* +, *Trifolium badium* +, and *Minuartia verna* subsp. *verna* +.

Distribution: *Alchemilla incisa* is an Alpine Carpathian species.

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