

Campanula rhomboidalis new to Bohemia

Campanula rhomboidalis, nový druh pro Čechy

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KOVANDA M. et M. HUSOVÁ (1976): *Campanula rhomboidalis* new to Bohemia. — Preslia, Praha, 48 : 341—345.

Campanula rhomboidalis L., a native of the Western Alps, is reported as an alien in the Jizerské hory Mts., N. Bohemia. The plant was first noticed there in 1966 and is now fully naturalized. A description of the locality is provided. There are also notes on the distribution area, both autochthonous and secondary.

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During field work in the Jizerské hory Mts., N. Bohemia, in July, 1966, M. Husová noticed several clumps of a strange *Campanula* growing near Jizerka and deposited a small collection in her herbarium. This material was then tentatively identified by M. Kovanda as *Campanula rhomboidalis* L. Because the occurrence of this West Alpine species in these mountains appeared improbable, it was decided to examine the site once again, to investigate the habitat conditions in more detail and to obtain more representative material. It was not until July 1974, however, that we were able to visit the locality jointly and to confirm the identity of the plant. Its correct scientific name and a brief description follow:

Campanula rhomboidalis L. Sp. Pl. 165, 1753

Syn.: *C. Sonceonii* CHABERT Bull. Herb. Boiss. 3 : 146, 1895. — *C. rotundifolia* L. subsp. *rhomboidalis* (L.) BONNIER Fl. Fr. Suisse Belg. 7 : 47, 1924.

Perennial. Root thickened, more or less napiform. Rhizome thin, little branched. Basal leaves orbicular to ovate, serrate to subentire, long-petiolate, often absent at anthesis. Stems in lax tufts or solitary, erect, (10—)20—30 cm long, angled, finely hairy below. Lower cauline leaves petiolate, rhombic to ovate, serrate, withering before anthesis; the others sessile, ovate to broadly lanceolate, serrate. Inflorescence a few-flowered raceme. Flower buds erect. Ovary smooth, trilobular. Calyx-teeth linear, straight, appressed to patent, 6—8 mm long. Corolla campanulate, narrowing to the base, with patent lobes, dark blue, 16—22 mm long. Capsule pendent, turbinate, 6—10 mm long, opening at the base.

The site is a mesic mountain meadow on a gentle SE-facing slope (inclination ca. 15°) just SW. of Mt. Bukovec (1005 m) near the village of Jizerka, at an altitude of 900—910 m above sea level. The parent rock is biotitic granite but the soil appears to be enriched with products of weathering from the basaltic Mt. Bukovec; the presence of basalt would account for the relative richness of the local flora. The meadow is mown once a year. The community in which *C. rhomboidalis* occurs can be referred to the alliance *Polygono-Trisetion* BR.-BL. 1948, replacing the primeval beech forest. The following is a list of the associated species compiled during the visit to the site on July 2, 1974:

Achillea millefolium L., *Alopecurus pratensis* L., *Anthoxanthum odoratum* L., *Bellis perennis* L., *Briza media* L., *Campanula rotundifolia* L., *Cardamine pratensis* L., *Cardaminopsis Halleri* (L.) HAYEK, *Cirsium heterophyllum* (L.) HILL, *Crepis mollis* (JACQ.) ASCHERS. subsp. *succisifolia* (ALL.) JÁV., *Crepis paludosa* (L.) MOENCH, *Dactylorhiza maculata* (L.) SOÓ, *Geranium silvaticum* L., *Gymnadenia conopsea* (L.) R. BR., *Hypericum maculatum* CRANTZ, *Leontodon hispidus* L., *Leucanthemum vulgare* LAM., *Luzula luzuloides* (LAM.) DANDY et WILMOTT, *Lychnis flos-cuculi* L., *Melandrium dioicum* (L.) COSS. et GERM., *Meum athamanticum* JACQ., *Myosotis palustris* L., *Nardus stricta* L., *Phleum pratense* L., *Phyteuma spicatum* L., *Pimpinella major* (L.) HUDS., *Plantago lanceolata* L., *Poa trivialis* L., *Polygala vulgaris* L. subsp. *oxyptera* (REICHENB.) LANGE, *Polygonum bistorta* L., *Potentilla erecta* (L.) RÄUSCHEL, *Prunella vulgaris* L., *Ranunculus acris* L., *Ranunculus repens* L., *Rhinanthus minor* L., *Rumex acetosa* L., *Stellaria graminea* L., *Taraxacum officinale* WIGGERS, *Trifolium pratense* L., *Trifolium repens* L., *Trisetum flavescens* (L.) P. B., *Veronica chamaedrys* L., *Vicia cracca* L.



Fig. 1. — Distribution of *Campanula rhomboidalis*. Hatched, autochthonous distribution area. Dots, places of secondary occurrence: 1, Kempen, the Netherlands. 2, Campine, Belgium. 3, Merzig, Federal Republic of Germany. 4, Reuterbacher Höfe near Freiburg i. Br., Federal Republic of Germany. 5, Messkirch, Federal Republic of Germany. 6, Siegmundsbürg, German Democratic Republic. 7, vicinity of Rohrbach, Austria (3 stations). 8, vicinity of Eisenerz, Austria (4 stations). 9, Edlach near Mürzzuschlag, Austria. 10, Loučná nad Desnou, Czechoslovakia. 11, Jizerka, Czechoslovakia.

The species belongs to subsection *Heterophylla* (WITAS.) FED. of section *Campanula*. In view of the relatively small difference in the shape of the basal and cauline leaves, it has been proposed to be the archetype of the whole subsection (see KÖGELER 1953) which theory has however received little support from other students (see PODLECH 1965). Closely allied species include *C. precatoria* TIMB.-LAGR., a native of the Pyrenees, and *C. cantabrica* FEER, an endemic of the Cordillera Cantabrica in N. Spain. While the first is easily recognized by its moniliform roots, stems densely leafy in the lower part and pendent flower buds, the latter is distinguished by its lower growth, smaller flowers and presence of root tubercles. Of the Czechoslovak Campanulas, only the Carpathian *C. serrata* (KIT. ap. SCHULT.) HENDRYCH approaches *C. rhomboidalis* somewhat in terms of morphology. Full details on the taxonomy of *C. rhomboidalis* can be found in PODLECH (1965).

C. rhomboidalis is a West Alpine species with a small, almost continuous distribution area extending from Savoie and Dauphiné in the West to St. Gotthard in the East (see Fig. 1). Northwards it reaches the Swiss Jura (see HAYEK 1918, PODLECH 1965, HESS, LANDOLT et HIRZEL 1972, FEDOROV et KOVANDA 1976). As in the Jizerské hory Mts., its habitats are usually rich mountain meadows of the alliance *Polygono-Trisetion* BR.-BL. (see OBERDORFER 1970, ROTHMALER et al. 1972). Autochthonous occurrence of *C. rhomboidalis* outside this area is doubtful, all the published records being more or less clearly of naturalized plants. The species is locally cultivated for ornament and intermittently escapes. In Czechoslovakia it has been found naturalized at Loučná nad Desnou (formerly Vízmberek, Wiesenberg), N. Moravia, as early as 1880 (see OBORNY 1885). There are four widely separated localities in Germany (see HAYEK 1918, GARCKE 1922, ROTHMALER et al. 1972), eight in Austria (see WIDDER 1937, MELZER 1964, PODLECH 1965, MELZER 1972), one in Belgium (see MULLENDERS et al. 1967) and one in the Netherlands (see HEUKELS et VAN OOSTSTROOM 1956). Reports of *C. rhomboidalis* from the Pyrenees (see HESS, LANDOLT et HIRZEL 1972) probably refer to *C. precatoria* TIMB.-LAGR., those from the Tatra (see KOTULA 1889) to *C. serrata* (KIT. ap. SCHULT.) HENDRYCH.

The appearance of *C. rhomboidalis* in the Jizerské hory Mts. is quite unexpected and constitutes a remarkable extension of its known distribution. The distance from its nearest localities both as a native and an alien inevitably raises the suspicion that it has been introduced by man, even though the plants are found in a natural plant community and have every appearance of being in a very thriving condition. OBORNY (1885) reports that the Loučná plants tend to be one-flowered but our material from the Jizerské hory Mts. conforms to the Alpine plants in being typically few- (2 to 7) flowered. The search made in 1974 revealed that since 1966 the plant had made considerable progress and became established over an area about 30 × 30 metres. The occurrence cannot possibly be dated very long before 1966. *C. rhomboidalis* is a very distinctive plant and it seems impossible for it to have escaped the attention of botanists for a longer time. Students of the Jizerské hory flora (both Bohemian and Silesian) never mention it (see for instance WIMMER 1840, HEUSER 1859, 1860, ENGLER 1864, HANSGIRG 1879, FIEK 1881, WINKLER 1881, SCHUBE 1904, LAUS 1908, SCHUSTLER 1918, BRIEGER 1923a, b, MILITZER 1954, BURDA 1969, FRÖHNER 1971).

Except for OBORNY (1885), who took it for granted that the plant arrived in Loučná with foreign grass seed, no attempt seems to have been made to explain the method of introduction of *C. rhomboidalis* over wide disjunctions. In our opinion, grass seed can hardly be held responsible for the occurrence in the Jizerské hory Mts. At the moment there is no direct evidence for the plant having escaped from cultivation (we have failed to detect any source of diaspores in the vicinity), nor can any other means of introduction be suggested. After all, the possibility cannot be excluded that the plant was introduced there deliberately. Whatever its origin may be, its increase during the eight years since it was first noticed indicates that it has become well naturalized and claims inclusion in the list of Bohemian plants. It will be interesting to record its persistence in its present site and any further spread.

SOUHRN

Západoalpský zvonek *Campanula rhomboidalis* L. byl zjištěn v Jizerských horách jako nový rostlinný druh pro Čechy. Jeho nalezištěm je horská louka jihozápadně pod Bukovcem (1005 m) u obce Jizerka, v nadmořské výšce 900–910 m. Druh byl na této lokalitě poprvé pozorován v roce 1966; během osmi let se značně rozšířil a stal se součástí lučního společenstva ze svazu *Polygono-Trisetion* BR.-BL. 1948. Na stanovištích podobného typu se vyskytuje i v Alpách. Původnost výskytu je přesto pochybná. U všech dosud známých lokalit mimo souvislý alpský areál je totiž více nebo méně důvodné podezření ze zavlečení nebo zplnění. U nás byla *C. rhomboidalis* nalezena (údajně zavlečená s travním semenem) v zámeckém parku v Loučné nad Desnou už v roce 1880. Další údaje jsou z NDR, NSR, Rakouska, Belgie a Holandska. Výskyt v Jizerských horách je sotva možno datovat příliš daleko do minula; je nepravděpodobné, že by *C. rhomboidalis* při své nápadnosti zůstala delší dobu nepovšimnuta. Starší ani novější autoři zabývající se studiem květeny Jizerských hor se o tomto zvonku nezmiňují.

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Received March 24, 1976

Reviewed by J. Chrtek

See also Plate XIV. in the Appendix.

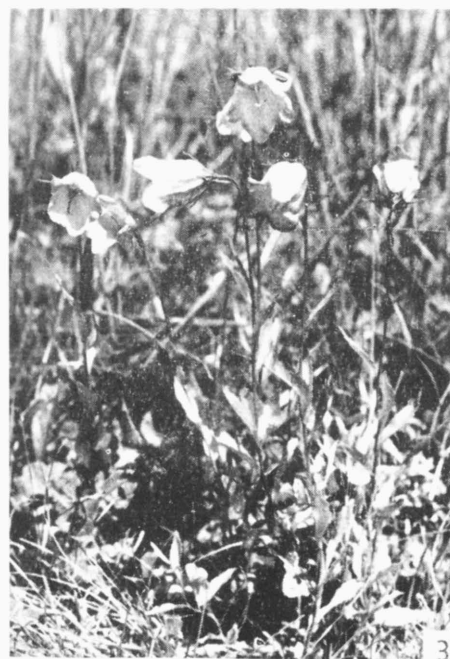


Plate XIV. — 1, view of the habitat of *Campanula rhomboidalis* below Mt. Bukovec, Jizerské hory Mts. 2–4, details of *Campanula rhomboidalis* in the habitat seen on Fig. 1. Photo by F. Kotlaba.

M. KOVANDA and M. HUSOVÁ: *Campanula rhomboidalis* new to Bohemia