

POLYPOMPHOLYX

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Polypompholyx is represented in the plant world by two plants. *P. multifida* and the smaller plant *P. tenella*, both which grow sometimes together here in Western Australia. *P. tenella* is also found in Victoria and South Australia, but *P. multifida* grows only in Western Australia.

P. multifida is a plant that loves to grow in very wet places and it doesn't seem to favour any particular soil type. I've found it growing in peat, clay, moss, and sand.

P. multifida (I'm not sure of *P. tenella*) seems to be an annual, growing the following season from seed produced this season. The wet areas these plants grow in are mostly wet all year.

Polypompholyx are not self-pollinating. I do not know what insect pollinates the flower, but in the glasshouse they must be pollinated by hand. The flower parts are very similar to those of *Pinguicula*; they can be pollinated the same way as the latter.

P. multifida has bladder traps about 4 mm long just under the soil surface, with small green leaves (turning red with age) about 5 cm long pressed flat to the ground, forming a small rosette. The flower spike can be anywhere from 6 to 20 cm tall, terminating in two to six flowers. *Polypompholyx* flowers come in all shades of pink; some are even bicoloured. Occasionally I have come across plants

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THE CZECH BUTTERWORT *PINGUICULA BOHEMICA*

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Pinguicula bohemica Kraj. (syn. *P. vulgaris* ssp. *bohemica*) Domin) is a Czechoslovak endemic (Holub, Procházka and Čěrovský, 1979). A Czech professor of botany, now a university professor in Vancouver, described the plant in 1927 (Krajina, 1927). *Pinguicula alpina* and *P. vulgaris*, the nearest relative of *P. bohemica*, also occur in Czechoslovakia.

According to Hadač (1977), *P. bohemica* originated at the start of the postglacial period through the isolation of a small number of *P. vulgaris* in the central part of our country. Nine thousand years ago a very dry and warm climate set in in Europe and the remains of glacial flora receded to the mountains. *P. vulgaris* also receded from the plains to the moun-

tains but a part stayed on a small marshy piece of land near the river Elbe (figure 1). It adapted itself to the warm climate in the plain and the specific soil rich in mineral salts.

At the end of the warm, dry period *P. vulgaris* spread back again from the mountains to the hills and plains. In some localities it met with the already different *P. bohemica*. Hybrids are rare, however. In some localities there remained a genetically pure growth of the Czech butterwort.

Pinguicula bohemica is more robust than its sister *P. vulgaris* and reaches up to a height of 30 cm. The leaves are conspicuously veined. The relatively large

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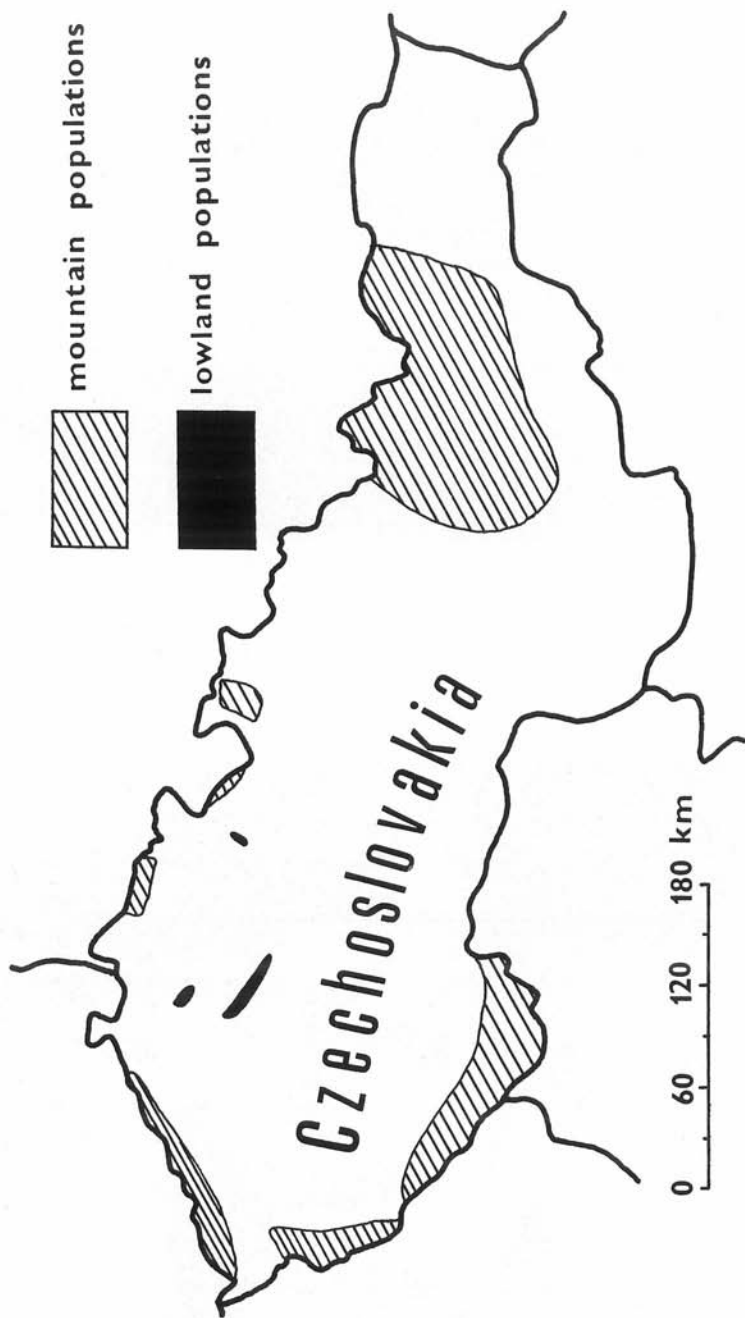


Fig. 1. The assumed distribution of *Pinguicula* plants 9,000 years ago on today's Czechoslovak territory.

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pigment in all growth stages (cf. the green pitcher variant of *S. flava*). It occurs rarely in some northern bogs but is being found in more areas with increased searching. The form must be clearly differentiated from shade-grown more typical ssp. *purpurea* in which red color has not developed. One should insist that putative f. *heterophylla* have yellow-green pitchers, bracts and flowers when growing in the open; all shade growing plants must remain suspect until more closely examined or grown in full light. In bogs where f. *heterophylla* is found, more typical ssp. *purpurea* is almost always present with resulting hybrids. These can be differentiated by at least fine red venation of pitchers, pink or veined petals and red pigment of leaf scales at the base of the plant rosette.

7) Flower of ssp. *purpurea* f. *heterophylla*. Note that all parts of the flower are yellow-green.

8) ssp. *purpurea* "v. *ripicola*." The error in naming this non-genetic variant is a classical example of the result of not doing meticulous transplant experiments in varying habitats, as well as not noting older literature where the work may have already been done (e.g., reference 2)! It is the growth form of ssp. *purpurea* most often seen in northern marl fens, as opposed to the "typical" growth form in acid sphagnum bogs. In the "ripicola" plants, the pitchers are quite short and brittle, often very deep red to maroon, and there are often more pitchers per rosette. When moved from their marl or sandy soil habitat to sphagnum conditions, they revert to typical ssp. *purpurea* sphagnum bog appearance in 1-3 years. Conversely, sphagnum bog growing ssp. *purpurea* plants moved to an open marl fen assume the "ripicola" characteristics.

Again, we refer interested readers to the sources below on all of these variants of minor importance. The references contain bibliographies through which one must further backtrack in or-

der to begin to gain some understanding of these plants.

References

1. Schnell, D. E. 1979. A critical review of published variants of *Sarracenia purpurea* L. *Castanea* 44:47-59. (Reprints from author. A general critical review containing bibliographic references which should be further consulted.)
2. Mandossian, A. J. 1966. Variations in the leaf of *Sarracenia purpurea* (pitcher plant). *Mich. Botanist* 5:26-35. (This is one paper of a trilogy by the author on aspects of the biology of the species in Michigan. Too often overlooked, one might criticize details or extent of some experiments and observations, but on the whole they present valuable data and observations among which are transplant experiments and other observations contradicting the concept of genetic var. *ripicola*, which Mandossian in turn was apparently not aware of.)
3. Schnell, D. E. 1978. Systematic flower studies of *Sarracenia* L. *Castanea* 43: 211-220. (A secondary reference as far as this presentation of *S. purpurea* variants is concerned, but which emphasizes some floral observations.)

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flowers of *P. bohemica* are almost white with a dark violet mark in the neck, quite the opposite of the typical colouring of *P. vulgaris*. In the light colour of its corolla *P. bohemica* resembles *P. vulgaris* f. *bicolor* (Woloszczak) Krajina (see CPN 7/2:47, 50). But there are certain clear features which distinguish *P. bohemica* from *P. vulgaris* and its forms. The most striking of these is the shape of the calyx and capsule (figure 2). *P. bohemica* has the lobes of its calyx rounded at the tip whilst *P. vulgaris* including the bicolor form has bluntly pointed lobes. The calyx of *P. bohemica* is not open but is bell-shaped and fitting closely to the

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capsule. The capsule is remarkably short, almost spherical or slightly pear-shaped.

Very few botanists have had the opportunity to study a good specimen of this plant and so *P. bohemica* is practically unknown. Ernst, monographer of the genus *Pinguicula*, gives the name of *P. bohemica* without comment (Ernst, 1961). Casper, monographer of the European butterworts, even doubts the existence of *P. bohemica* as a species and considers it just a form of *P. vulgaris* (Casper, 1962). Hadač (1977) criticizes this view as unfounded. The latest opinions are that *P. bohemica* is an independent taxon, quite different from the typical *P. vulgaris* and other European species. The differences between *P. bohemica* and all other European butterworts are given in detail by Krajina in the quoted original description of the specimen.

Pinguicula bohemica was found in at least 10 localities 50 years ago. Farming, unfortunately, in the fertile country here is a grave threat to this endemic, most of all through changes in the water system and through the use of nitrates and phosphates to enrich the soil. Plant life is changed by this and the butterwort is subjected to interspecific competition. Today we know of only one locality where a few dozen Czech butterwort plants grow, and this unfortunately a protected nature reservation.

The butterwort grows here on a small marshy field measuring 300 by 200 me-

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in the field that are taller and have larger blooms than normal, but this is probably due to soil conditions. *P. tenella* grows to only 5 cm at best.

On rare occasions I have found pure white forms of *P. multifida*. As yet I have not managed to collect seed of this form.

Polypompholyx are truly worth growing — not only for their CP appeal but also for their fantastic long lasting flowers.

ters. At the end of the glacial period there was a large shallow lake here which gradually filled up with marshy soil. There were many such swamps in this part of the country. The Czech butterwort grows here together with many other rare plants such as the orchids *Dactylorhiza maculata*, *D. majalis*, *Epipactis palustris*, *Liparis loeselii*, *Platanthera bifolia*, the creeping willow *Salix repens*, interesting and often endemic sedges *Carex* spp., *Tofieldia calyculata*, *Parnassia palustris* and *Menyanthes trifoliata*. At places with the most acid soil rain reaction there are islands of *Sphagnum palustre* and rare occurrences of *Drosera rotundifolia* and *Utricularia minor* f. *terrestris*.

Pinguicula bohemica will probably soon become extinct in its natural surroundings, and all that will remain is a few documents in the herbariums of Charles University and the National Museum in Prague. A few thriving plants grow in the Botanical Gardens at the town of Liberec in Czechoslovakia. This "genetic bank" is a final attempt to preserve this beautiful and also scientifically interesting carnivorous plant.

References

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