

POTAMOGETON × CRASSIFOLIUS FRYER IN THE NETHERLANDS

BY

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During the summer excursion of the section for investigation of the flora of the Netherlands of the Royal Netherlands Botanical Society Mr H. H. PRELL was struck by the appearance of certain *Potamogeton* leaves, differing from surrounding normal floating leaves of *P. natans* L. by a brighter green colour, and by their laminae not lying quite flat on the water and being immersed in part. The plant was found July 20th, 1953 in a shallow peaty ditch on the inner side of the dike around the Zuidlaren Lake (province of Drente) at its southeastern corner.

The material collected by us agrees almost completely with the description of *P. × crassifolius* Fryer, Journ. of Bot. **28**: 321, tab. 299, 1890.

For the benefit of those to whom this publication is not readily accessible we quote:

"*Rootstock* with thick stolons, rooting deeply in the soil, stem 4–5 ft long, very stout, round, simple below, branched above with simple branches; *leaves all stalked, coriaceous, opaque when mature; lower leaves reduced to submerged phyllodes, or narrowly lanceolate and tapering into the petiole, or with a distinct lanceolate lamina, all thick and coriaceous like the upper ones; distant, few in number, usually all decayed by the time of flowering; upper leaves very thick and fleshy, oblong-elliptical, or oval, with a prominent fold at the base of the lamina, which is slightly decurrent or rarely lanceolate and gradually narrowed into the stalk; petiole flat above, slightly enlarged towards the apex, shorter than the lamina; stipules not winged, not channelled on the back, but with two conspicuous green ribs, horny with scarious edges, or herbaceous, acute, lowest sometimes bearing a short phyllode, or more rarely a long lanceolate ordinary lower leaf; peduncles of equal thickness throughout, terminal becoming lateral by growth of the branch, equalling or slightly exceeding the stem in thickness, 2–3 times as long as the flower-spike, much shorter than the subtending leaves; flower-spike cylindrical, dense, 1–1¼ in. long, usually (always?) barren, perianth-leaves closed at the time of flowering, but the stigmas exerted; colour of the whole plant bright green, or with the upper young leaves sometimes reddish or streaked with reddish purple*".

Our plant (fig. 1) disagrees with this description only in its peduncles being not more than 1-2 times as long as the spike. No more than Fryer we did find any ripe fruits. The perianth segments continue to be tightly appressed to the ovaries; they are dented at the back. Even in a stem carrying as many as three flower-spikes the ovaries

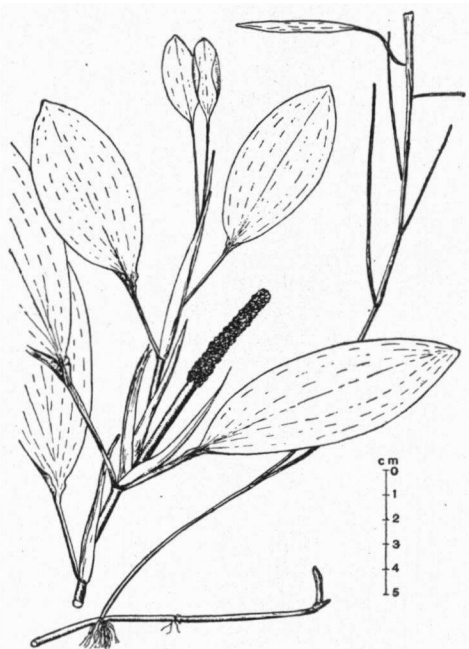


Fig. 1. *Potamogeton* \times *crassifolius* Fryer. Left: flowering shoot. Right: rhizome with juvenile shoot (phyllodes).

of the undermost of them were still undeveloped, whilst in comparable species, as far as we know, development has always started in similar specimens. This sterility strongly suggests a hybrid origin of our plant, as of Fryer's.

The latter (l.c.) considers his *P. x crassifolius* as the result of the crossing of *P. zizii* M. et K. with *P. natans* L. Our plant was found at a distance of approximately 500 meters from a station of *P. zizii* (CLASON, Act. Bot. Neerl. 1, 491, 1953); although the two spots are now separated by a dike, this did not exist until very recently, and the whole site was formerly periodically inundated. Because *P. natans* L. (f. *prolixus* Koch) grows between the plants of *P. zizii* too, *P. x crassifolius* may in our case have originated from these two species as well.

The characters of *P. x crassifolius* are compatible with the assumption of *P. zizii* and *P. natans* entering into its parentage. The influence of *P. natans* is distinctly discernable in this interspecific hybrid in the following characters:

1. the general habit is that of *P. natans*;
2. the juvenile shoots carry phyllodes, which are no longer present in flowering shoots with floating leaves;
3. the floating leaves have distinct folds at the base, and sometimes a joint is hinted at by a slightly lighter colouring at the top of the petiole.

The plant differs from *P. natans* in:

- a. the conspicuously light green colour of its leaves. These are not, however, thinly membranous, as in *P. zizii*, but as thick as those of *P. natans* (hence the specific epithet); Fryer's expression "very fleshy" is probably meant in a relative sense;
- b. the lamina not being entirely flat but slightly and irregularly undulated, which results in parts of it, especially along the margins, being immersed;
- c. the base in most leaves passing decurrently into the petiole, although the rounded base of *P. natans* f. *prolixus* does occur likewise;
- d. the joints below the blades being entirely absent or only represented by a faint indication.

This last group of characters can be ascribed in our opinion to *P. zizii* influence. Of the broad-leaved *Potamogeton* species only *P. lucens* L., along with *P. natans* has been found in the vicinity (CLASON l.c.); as there is nothing in our hybrid which points to *lucens* influence (e.g. thickened peduncles, cuspidate leaves) there is no reason in our opinion to consider this species as a possible parent. Moreover, the hybrid has been formed near the habitat of the rare *P. zizii*; were *P. natans* and *P. lucens* the parents, this would mean an extraordinary coincidence in view of the fact that these species are very commonly found, also in the northern part of the Netherlands, without their hybrid having recorded so far from this region.

The present case indeed is the first on record, so far as we know, of any *Potamogeton* hybrid found in the Netherlands (cf. KLOOS, Ned. Kr. Arch. 46, 556, 1936.) FRYER (l.c.) found his *P. × crassifolius* in a restricted part of Cambridgeshire only, and literature has supplied us with only one instance of a plant supposed to be this hybrid, from Bavaria by FISCHER (ASCHERSON & GRAEBNER, Synopsis 1, ed. 2: 508, 1913).

Specimens of the hybrid are preserved in the Rijksherbarium, Leiden, the University herbarium, Groningen, and in several private collections.