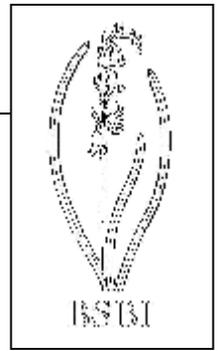


Plant Crib



MYRIOPHYLLUM

I have been prompted to look into the characters which separate our *Myriophyllum* L. species for two reasons. First, I have sometimes found it difficult to identify vegetative material of *M. alterniflorum* / *M. spicatum*, although there are few references to any difficulties in the standard reference works. Second, when Jane Croft and I were working on the distribution maps for *Aquatic Plants* we realised that there had also been confusion between *M. alterniflorum* and *M. verticillatum*.

The following vegetative key to the native and extant naturalised species is based on the examination of herbarium material and a limited number of fresh samples. It includes two varieties of *M. alterniflorum*: var. *americanum* may or may not deserve formal taxonomic recognition but it is a distinctive phenotype which appears to have a distinct habitat and geographical distribution and requires further study. The leaf characters in the key are based on 'mid-stem leaves' and not those near the base or the apex. Neither the key nor the notes cover dwarf states which can often be found growing terrestrially on damp ground at the edge of water bodies in late summer. I have not tried to identify these and can only suggest that recorders try to find more typical aquatic material nearby or return to the site when the water level is higher!

- 1 Stems emergent, aerial leaves \pm glaucous, densely covered by translucent, hemispherical glands
M. aquaticum (Vell.) Verdc.
- 1 Stems submerged, or if exposed by falling water levels the aerial leaves neither glaucous nor densely covered by glands 2
- 2 Mid-stem leaves 3-26 mm long, with 6-18 segments (see note 1) (*M. alterniflorum*) 3
- 2 Mid-stem leaves (8-)15-45 mm long, with (13-)15-41 segments 4
- 3 Stems prostrate and worm-like; internodes 2-8(-12) mm long; leaves 3-8 mm long
M. alterniflorum DC. var. *americanum* Pugsley
- 3 Stems not prostrate and worm-like; internodes (4-)8-17 mm long; leaves (5-)8-26 mm long
M. alterniflorum DC. var. *alterniflorum*
- 4 Plants lacking any reddish tinge; mid-stem leaves 1.4-4(-5.5) times as long as the internodes, flaccid when removed from the water; clavate turions (see note 2) developing on the lower stems in the late summer
M. verticillatum L.
- 4 Plants with a reddish tinge when not heavily shaded, especially on the stem; mid-stem leaves 0.5-1.5(-2.3) times as long as the internodes, usually rather rigid when removed from the water; turions absent
M. spicatum L.

Notes

1. Plants with leaves which are 8-26 mm long and have 13-18 segments may be *M. alterniflorum* or *M. spicatum*.
2. Turions are clustered overlapping groups of leaves forming 'buds' at the ends of shoots or in axils.

Plant Crib

Myriophyllum aquaticum is a distinctive alien which might turn up anywhere in the lowlands, but it is most frequent in ponds and ditches in SE England. It is illustrated on the cover of *BSBI News* 67 (1994). Unlike the native species it is dioecious, and only female plants are known in our area.

The remaining species may be confused. *Myriophyllum verticillatum* is the largest and has flaccid leaves which are markedly longer than the internodes. It may have 4 or 5 leaves in a whorl: the suggestion in some Floras that there are usually 5 is incorrect. The leaves are 15-45 mm long, with 15-31 leaflets. The robust, dark green turions can easily be found at the base of the stems in the late summer and distinguish it from all the other species recorded in our area.

Myriophyllum verticillatum is a plant of calcareous water which is most frequent in S England and central Ireland; it is very rare in Wales and absent from Scotland. Records from outside its known range should be based on flowering material or vegetative plants with turions, and should be supported by voucher specimens.

Myriophyllum spicatum is a smaller plant, but there is a considerable overlap between the leaf length of this species and that of *M. verticillatum* and the number of leaf segments may be greater in *M. spicatum* than in *M. verticillatum*. *Myriophyllum spicatum* has leaves 18-31 mm long, with 13-41 leaflets. However, the pigmented stems and rigid leaves give *M. spicatum* a quite different appearance. *Myriophyllum spicatum* is the most frequent species in lowland England, S Scotland and E Ireland, but in more acidic, upland areas of the north and west it becomes confined to eutrophic or coastal waters.

The N American species *M. exalbescens* Fernald is not known in our area but it is worth looking out for, especially in Scotland. It is closely allied to *M. spicatum* (some authors treat them as subspecies) but unlike that species it produces turions. As the turion-bearing *M. verticillatum* is absent from Scotland, any turion-bearing *Myriophyllum* species found there is likely to be of great interest.

Myriophyllum alterniflorum var. *alterniflorum* has flaccid leaves; in this respect it is more similar to *M. verticillatum* than it is to *M. spicatum* and this is presumably the reason for the confusion between these taxa. It is, however, a smaller plant with fewer leaf segments. It may be found growing with *M. spicatum* and when they grow together the differences between these species are usually obvious, but both are very variable in coloration and leaf characters and the overlap is so great that some material cannot be identified with certainty. *Myriophyllum alterniflorum* is common in the north and west and although it is usually found in acidic waters it may also grow in clear, calcareous water. At least one book states that *M. alterniflorum* is never covered in marl whereas *M. spicatum* often is, but the populations of *M. alterniflorum* in calcareous waters may be heavily encrusted.

Myriophyllum alterniflorum var. *americanum* grows as prostrate, worm-like stems on sandy substrates in clear water. Both leaves and internodes are very short. It was first recorded in our area from Lough Neagh, N. Ireland, but similar plants are found in lochs in Scotland (V.c. 103, 110 & 111) and Donegal (H35).

Author C. D. Preston, February 1998.