

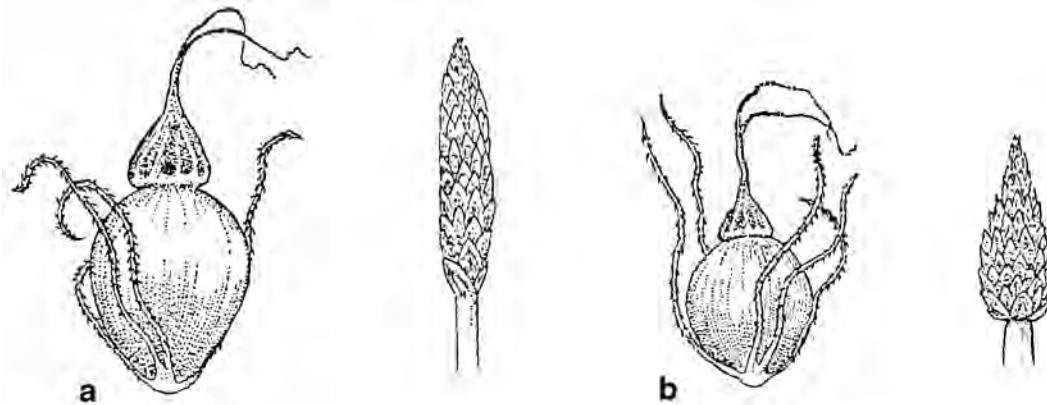
ELEOCHARIS

1. *Eleocharis austriaca*

E. austriaca Hayek is known at a few sites in N England and S Scotland, and thorough searching may well lead to its discovery elsewhere. It usually grows on a gravel substrate with some silt deposition where there is slow water movement and some protection from spates, typically in ox-bow and other pools, runnels, and springs beside upland rivers, less often along the banks of the main river. It has also been found in pools in an old quarry (Ribblesdale) and an old gravel pit (Wharfedale). It is an early colonist in such sites, but tends to weaken with increased deposition of silt, sometimes giving way to *E. palustris*. A few sites are known in the 'middle' reaches of rivers, down to *c.* 60 m altitude.

Observations of flower/fruit characteristics are essential for accurate identification:

- i) Stigmas 2 as in *E. palustris*, shape/size of lowest glume and upper leaf-sheath as in *E. palustris*.
- ii) Style base much smaller, *c.* 1/10 of the bulk of the nut, not markedly constricted at the base (in *E. palustris* style base *c.* 1/4 or more of bulk of nut, and markedly constricted at the base).
- iii) Bristles around base of nut usually 5 (in *E. palustris* usually 4). Do not confuse these bristles with the (three) anther filaments: bristles carry minute down-pointing hooks, and grow from a tiny collar of tissue at the base (see figures). The filaments (not shown in the figures) are hair-like, smooth, and longer than the bristles; they arise between the nut and the bristle-collar. They persist after the loss of the anthers, but are eventually shed.



Nuts and spikes (a) *E. palustris*, (b) *E. austriaca* (del. FJR)

Apart from the fruiting characters, *E. austriaca* differs from *E. palustris* in:

- iv) The absence or poor development of reddish-purple colour at the base of the stem.
- v) The spikes characteristically compact and narrowly-conical and pointed, in contrast with the usually cylindrical spikes of *E. palustris* (though conical forms are known in *E. palustris*).
- vi) Stems somewhat inflated and brittle, with a circular cross-section.

Plant Crib

2. *Eleocharis uniglumis*

E. uniglumis (Link) Schult. sometimes presents difficulties. A useful character to pick it out from all other species is that the heads often point strongly sideways. The typical plant with thin stems in salt-marshes is easy to identify, especially if the stem is well-developed to show the single glume encircling the base of the spikelet, the fertile second glume, and the punctate pattern of the ripe nut.

However, there are puzzling inland populations in England and coastal populations in Scotland of plants intermediate between *E. palustris* and *E. uniglumis* (Wigginton & Graham 1981). Some of these have been shown to have intermediate chromosome numbers and are probably of hybrid origin. Further-more, plants with a high polyploid number ($2n = c. 90$) may occur in mixed populations with the ordinary *E. uniglumis* ($2n = 46$).

3. *Eleocharis acicularis*

E. acicularis (L.) Roem. & Schult. is usually sterile when submerged, and the stems are not always clearly 4-angled (in section they are 3-chambered). Submerged plants are often overlooked, and are often most easily found when exposed during hot summers when water levels are low. Mats of bright green, very fine leaves should be investigated. It is probably declining but may be under-recorded (*Scarce Plants*).

References Roberts, F. J. (1977). *BSBI News* **15**: 16-17
Walters, S. M. (1963). *Watsonia* **5**: 329-335

Authors F. J. Roberts, S. M. Walters & T. C. G. Rich, January 1998, and M. J. Wigginton & G. G. Graham (1981).