

NITELLA FLEXILIS / N. OPACA

Wood & Imahori (1965) united *Nitella flexilis* and *N. opaca*, which had been regarded as separate species for over a century. This view was followed by Moore (1986) (under *N. flexilis* var. *flexilis*) and Stewart & Church (1992) (under *N. flexilis*). However, in line with the prevailing view elsewhere in Europe it is necessary to reinstate them as two species. There are illustrations on page 2.

The essential difference is that *N. flexilis* is monoecious and *N. opaca* dioecious. However, the male structures (antheridia) mature up to a month before the female structures (oogonia) and then disintegrate which means that the absence of one type of sexual structure cannot reliably be used as evidence of dioecy. Fortunately, there is also a size difference of the sexual structures of the two species (the oospore is the dark-coloured spore within the oogonia):

N. flexilis Agardh: Monoecious; antheridia 500-625 µm; mature oospore 500-575 µm.

N. opaca Agardh: Dioecious; antheridia 650-775 µm; mature oospore 375-425 µm.

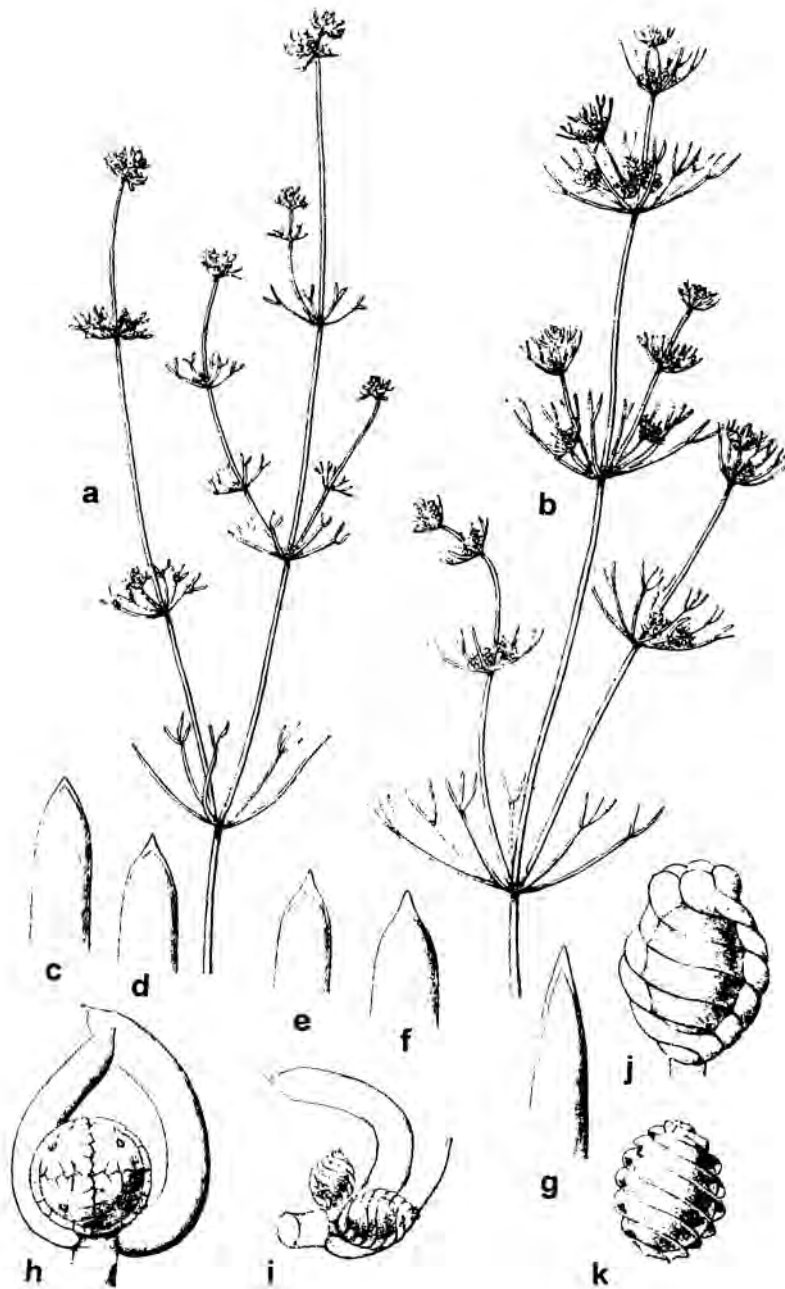
Although there are reputed to be vegetative differences between the two species, there is considerable overlap and none of these are reliable. Sterile material should therefore continue to be recorded as *N. flexilis* aggregate. Some of the forms of the two species may deserve recognition after more study; for example, a very slender form of *N. opaca*, similar in stature to *N. gracilis*, has been recorded from several montane lakes in Scotland and Wales.

N. opaca is by far the most frequent of the two species. While *N. flexilis* seems to be quite widely distributed it is mostly rare but becomes more frequent towards the south-east. While *N. opaca* occurs in a wide range of situations, *N. flexilis* seems to be restricted to more mesotrophic to eutrophic waters.

- References** Groves, J. & Bullock, G. R. (1920). *The British Charophyta. Volume 1. Nitelleae.* Ray Society, London.
Moore, J. A. (1986). *Charophytes of Great Britain and Ireland.* BSBI Handbook No. 5. BSBI, London.
Stewart, N. F. & Church, J. M. (1992). *Red Data Books of Britain and Ireland: Stoneworts.* JNCC, Peterborough.
Wood, R. D. & Imahori, K. (1965). *A revision of the Characeae.* J. Cramer, Weinheim.

Author N. F. Stewart, January 1998.

Plant Crib



Nitella opaca (from Groves & Bullock 1920). (a) male plant, (b) female plant, (c-f) apices of dactyls, (g) apex of dactyl of var. *attenuata*, (h) branchlet node with antheridium (i) branchlet node with oogonia, (j) mature oogonium after shedding coronula (k) oospore.