

# *Asterosiphon*: a rare alga found in muddy places

Bryologists might well encounter this alga, described by **Chris Carter**

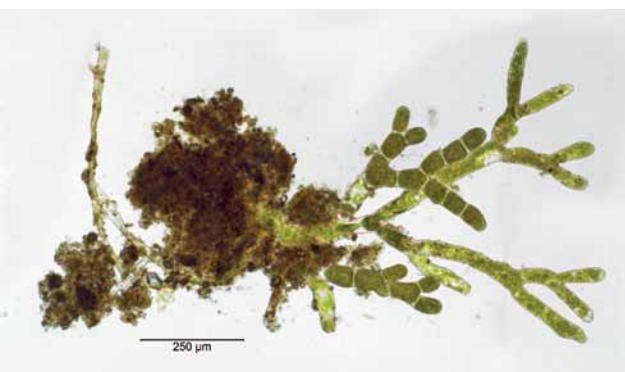
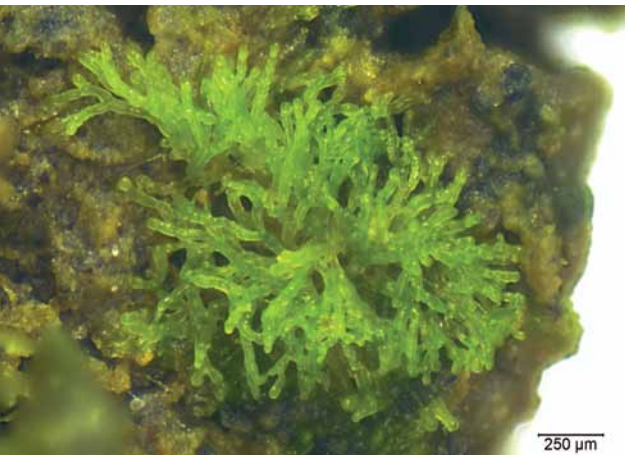


◁ Figure 1. *Asterosiphon* patches on mud.  
All photographs  
Chris Carter

There are many interesting things that grow on mud – and only on mud – and bryologists are the most likely people to see them. The occasionally exposed margin or ‘drawdown’ zone of a reservoir acts as a magnet for those who might spend hours crawling in search of small and often seasonally developed mosses and liverworts (Abrahams, 2005). Thus it was that Rachel Carter noticed unusual-looking small green filamentous rosettes at Pitsford Water in Northamptonshire in September 2011. These were growing in among patches of the liverwort *Riccia cavernosa*, along with assorted protonemata and the terrestrial algae *Botrydium* and *Vaucheria*, both xanthophytes (yellow-green algae). Pitsford Water is over 55

years old and forms part of the 194 ha Pitsford Nature Reserve, managed by Anglian Water, the Northamptonshire Wildlife Trust and Natural England. The reservoir is considered moderately eutrophic and has as a slightly alkaline pH with sizeable stonewort beds.

The alga Rachel collected was eventually identified as *Asterosiphon dichotomus* (Kützing) Rieth, another xanthophyte, and a new record for the British Isles (Carter & John, 2012). Its green, cushion-like rosettes were 5–20 mm across and consisted of radially arranged, dichotomously branched, filaments 40–50 µm in diameter (Figs 1, 2). These rosettes are actually attached by colourless rhizoids growing below the surface of the mud. One of the main readily identifiable features of *Asterosiphon* are the characteristic,



△ Top Figure 2. A typical *Asterosiphon* rosette from Pitsford in which the beaded akinetes are developing.

△ Above Figure 3. A small piece of *Asterosiphon* dissected out of mud: the attachment rhizoids can be seen on the left. The right of the image shows the rather featureless *Vaucheria*-like filaments and some akinetes.

very pretty, beaded rows of ellipsoidal ‘cells’ at the ends of the otherwise plain *Vaucheria*-like filaments (Fig. 3). These cells are ‘akinetes’ – the first stage of the rather complicated asexual reproduction in *Asterosiphon*; they can disperse immediately and then grow into new filaments. The swollen akinetes can also develop large numbers of so-called aplanospores internally – an even surer identification feature (Fig. 4). These ripen to a brown colour and are then released in



△ Figure 4. Aplanospores within a mature akinete.

masses. Most of the spherical aplanospores are thick-walled and darkly coloured, although some of these cells are reportedly thin-walled and show amoeboid movement. A selection of images can be found in the AlgaeBase name database and a comprehensive list of references is provided by Vishnyakov (2019).

*Asterosiphon* was recognized in 1940 by Pierre Dangeard, a distinguished French botanist, but the first comprehensive culture investigation was carried out by Alfred Rieth in 1962 who observed the various stages described above and cleared up synonyms created by earlier observers who had placed it under *Vaucheria* or the chlorophyte *Gongrosira*. It is probably cosmopolitan in distribution but records have been made by only a few botanists in Europe. Three further sites have been found recently by Rachel in soggy stubble fields in Northamptonshire, so it would be interesting to see if anyone comes across it in their surveys: please let me know if you find any candidate material. Rachel says it looks sturdier and more ‘bushy’ than the other filamentous growths around. It does not yet exist in any of the U.K. national recording databases: surely it does not only grow in Northamptonshire?

*Asterosiphon*: a rare alga found in muddy places

## References

- Abrahams, C. (2005).** The ecology and management of drawdown zones. *British Wildlife* 16: 395–402.
- Carter, C.F. & John, D.M. (2012).** *Asterosiphon dichotomus* (Kützing) Rieth: a new record of an edaphic xanthophyte for the British Isles. *Phycologist* 83: 37, 39–40.

**Vishnyakov, V.S. (2019).** Validation of the name *Asterosiphon dichotomus* (Xanthophyceae). *Phytotaxa* 404 no. 7.

**Chris Carter**

e candr.carter@gmail.com

## News and Society Business

### Second edition of the Field Guide

The Publications Committee is looking into the production of a second edition of *Mosses and liverworts of Britain and Ireland: a field guide*, originally published by the BBS in 2010. This will be a 'light touch' revision updating the nomenclature and maps, correcting any errors and including a greater range of drawings. As part of this exercise, we are compiling a list of corrections from the first edition. This exercise

was completed by Alan Hale some time ago, but unfortunately the comments that he compiled are no longer accessible. We would therefore be grateful if you could send details of any corrections to: [FGEditor@britishbryologicalsociety.org.uk](mailto:FGEditor@britishbryologicalsociety.org.uk)

All contributors to the Field Guide will also be contacted independently for their input.

## Future Meetings

### Spring meeting 2022: Hungary, Tuesday April 5 – Wednesday April 13 2022 (dates preliminary)

We will travel to different locations in the country by bus from Budapest and Eger, where we will stay for some nights each. Excursions will include calcareous grasslands and limestone rocks in the vicinity of the capital and in the Bükk Mts (North-east Hungary) (expected highlights: *Asterella saccata*, *Mannia fragrans*, *M. triandra*, *Oxymitra incrassata*, *Riccia ciliifera*, *Bryum [Ptychostomum] funkii*, *Crossidium squamiferum*), volcanic grasslands and siliceous boulder scree at Börzsöny and Visegrád Mts (*Brachythecium geheebii*, *Crossidium squamiferum*, *Grimmia plagiopodia*,

*Lescuraea saviana*, *Syntrichia caninervis* var. *gypsophila*), saline grassland (*Entosthodon hungaricus*) and loess cliffs (*Hilpertia velenovskyi*) in the lowlands and forests in the colline Cserhát Mts (*Anacamptodon splachnoides*, *Zygodon [Codonoblepharon] forsteri*).

This plan may, of course, be affected by changes which could be imposed by the Covid 19 situation at the time, supposing that travel to Hungary is then possible. Further information about the meeting will be provided closer to the time. The meeting will be organized by Peter Erzberger, Berlin, and Beáta Papp, Budapest.

To express an interest in the meeting and for further information, please email [erzberger.peter@gmail.com](mailto:erzberger.peter@gmail.com).