

A searchable photo catalogue of freshwater and subaerial algae

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Introduction

AlgaeVision is a database and virtual collection of images of freshwater and terrestrial algae collected in Britain and Ireland. The database is designed to be used in conjunction with the second edition of *The Freshwater Algal Flora of the British Isles* (2011) and aims to provide an authoritative reference collection of images to aid algal identification. It also includes species from slightly brackish water and some marine blue-green algae (cyanobacteria), but diatoms are not included. The only colourless forms included are dinoflagellates (Dinophyta).

New version: www.nhm.ac.uk/our-science/data/algaevision

A new version of AlgaeVision was released in 2016 and includes more than twice the number of images in the previous version. 250 genera, 680 species and 80 intraspecific taxa have been photographed for the AlgaeVision project so far.

▼ The Freshwater Algal Flora (2011) treats more than 2200 species (excluding diatoms); 35% of these taxa are now represented in AlgaeVision

	Number of species & sub-specific taxa in the <i>Freshwater Algal Flora of the British Isles</i> (2011)	Number of taxa in AlgaeVision illustrated by an image (2016)
Cyanophyta	369	91
Rhodophyta	23	17
Euglenophyta	193	50
Cryptophyta	20	2
Dinophyta	57	24
Raphidophyta	2	1
Haptophyta	5	3
Chrysophyta	133	31
Xanthophyta	77	34
Eustigmatophyta	4	1
Chlorophyta	1310	517
Phaeophyta	2	1
Prasinophyta	15	0
Glaucophyta	3	1
TOTAL	2213	773

The images

The AlgaeVision website is intended to be a reference resource designed to assist algal identification and therefore every attempt has been made to focus on diagnostic features (e.g. cell/colony morphology, chloroplast(s), other cytological features) essential for naming non-marine algae with a fair degree of confidence. Whenever possible photographs are taken of living algae since on preservation important diagnostic features can be lost or become difficult to interpret.



△ *Xanthidium armatum*

△ *Balbiana investiens*

△ *Closterium dianae*



△ *Micrasterias rotata*

△ *Bambusina borneri*

△ *Staurostrum hirsutum*

▲ Sometimes a single image is insufficient if all the features needed for identification are not clearly visible. For this reason a single specimen of a desmid or other 3-dimensional algae are occasionally photographed at several focus points or in more than one plane.

▼ Several images are presented to show the range of forms exhibited by morphologically variable species. There are many images of reproductive structures which are essential for species identification in genera such as *Vaucheria*, *Spirogyra* and *Oedogonium*.

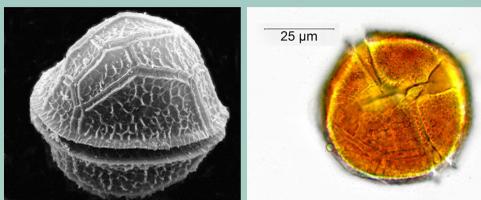


△ *Spirogyra grevilleana*

△ *Vaucheria bursata*

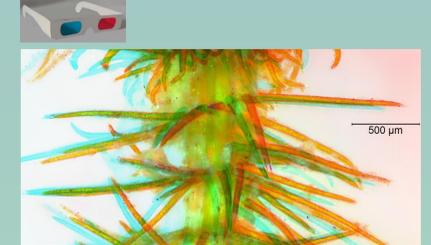
△ *Oedogonium suecicum*

▼ Some SEM photographs are included to assist interpretation of structures visible under the LM.



△ *Peridinium cinctum* – comparison of SEM and LM images

▼ Anaglyphs are 3-d images requiring special glasses to view:



△ *Chara canescens* – e.g. of red-cyan anaglyph

▼ There are also images of algal habitats, conspicuous macroscopic growths and discolouration of water bodies caused by the presence of large quantities of planktonic microalgae ('plankton blooms').



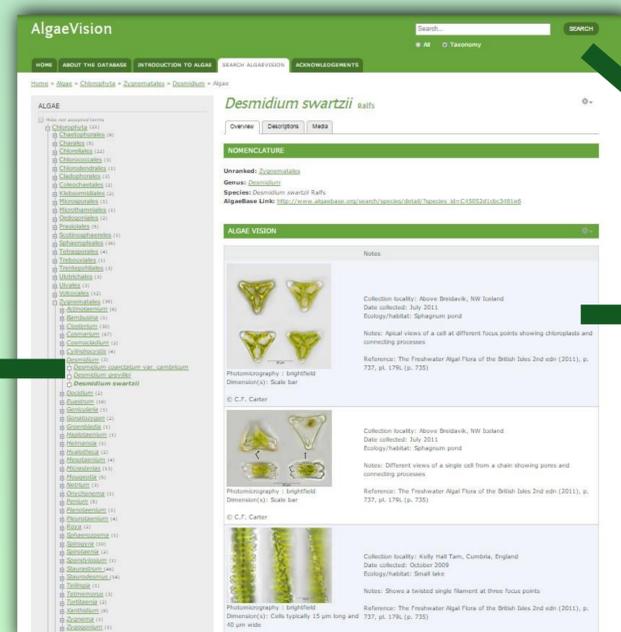
△ Vast numbers of *Aegagropilum linnæi* 'lake balls' along a loch shore.

△ Reddish waterbloom caused by huge numbers of *Euglena sanguinea*.

△ Dense orange-coloured colonies of *Phycopeltis arundinacea* on ivy leaves

The new website platform

The latest version of AlgaeVision is built using the Scratchpads platform; a virtual research environment created for biodiversity researchers. A hierarchy of taxonomic names can be navigated to find species records with images. The website also includes background information on the major algal groups and lists taxonomic and nomenclatural changes made since 2011.



Directly search for taxa

Navigate to taxa through expandable taxonomic hierarchy

Additional information with each record such as habitat; locality etc

Future developments

The intention is to produce regular updates that will include images of taxa not currently represented. We will also be pleased to consider contributed images, especially of taxa not currently represented, which demonstrate features crucial for species identification.

References

- Guiry, MD, Guiry GM (2016) AlgaeBase. World-wide electronic publication, National University of Ireland, Galway. www.algaebase.org
- John DM, Whitton BA, Brook AB (2011) *The Freshwater Algal Flora of the British Isles*. 2nd edition. Cambridge University Press, Cambridge.
- York, PV, John DM (2005) AlgaeVision: Virtual Collection of UK Freshwater Algae and Habitats. Version 1. World-wide Web electronic Publication.

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The new version of AlgaeVision (Version II) should be cited as follows:

Carter CF, John DM, Wilbraham J (2016) *AlgaeVision: Virtual Collection of Freshwater Algae from the British Isles. Version II. World-wide Web Electronic Publication.* (www.nhm.ac.uk/our-science/data/algaevision).