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Gloeocapsa Kützing

Kingdom: Eubacteria
Phylum: Cyanobacteria – blue-green algae
Order: Cröococcales

British distribution (genus): Throughout Britain, terrestrial and semi-aquatic habitats, and rarely as a lichen photobiont.
World distribution (genus): Cosmopolitan.

Gloeocapsa is a genus of cyanobacteria (blue-green algae) in which a number of usually spherical cells are enclosed in a thick sheath of mucilage. Cells form new mucilaginous sheaths and as they divide, the mucilage of the whole colony usually becomes multiply lamellate. Such sheaths within sheaths are more conspicuous in some species than in others, and those species in which the sheaths are scarcely lamellate have been separated off into a separate genus, *Gloeocapsopsis*. The merits of this are not yet clear.

Gloeocapsa colony, possibly *G. punctata*, epiphytic on *Trentepohlia abietina* on sheltered sandstone wall, Renfrewshire, March 2002.

Cell diameters 2-3 µm (1-3 µm in adjacent colonies); mucilaginous sheath only inconspicuously lamellate.

Whitton (in John *et al.*, 2002) recognises six free-living terrestrial/freshwater British species, but the taxonomy of this genus is still far from understood. Van den Hoek *et al.* (1995) consider that there are about forty species in total in the genus. Most occur on wet rocks, sometimes forming macroscopic, blackish, gelatinous patches where there is intermittent seepage on rock-faces. One species, *G. magma* is said to form conspicuous, brown-purple patches among

stones on wet ground in west Scotland, and to be called 'mountain dulse'. Whitton (*op. cit.*) suggests it is able to fix nitrogen. *Gloeocapsa* is also commonly encountered as individual, microscopic colonies epiphytic on terrestrial algae and bryophytes.

The photomicrograph shows a colony in which the lamellae are scarcely visible. This character and the small size of the individual cells together suggest it could be *Gloeocapsa punctata* Nägeli, a widespread species on walls and wet rocks, especially on limestone. Several colonies were noted while examining *Trentepohlia abietina* on a sheltered, old, mortared sandstone wall above a wooded ravine.

Gloeocapsa occurs also as a photobiont in certain lichens, e.g. in *Phylliscum*, *Pyrenopsis* and *Synalissa* (family Lichinaceae) (Jørgensen *in* Ahti *et al.*, 2007). These small and inconspicuous lichens tend to occur in habitats where *Gloeocapsa* will occur in a free-living state.

References

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