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Annals and Magazine of Natural History: Series 2

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tnah08>

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G.H.K. Thwaites^a

^a Bristol Medical School

Published online: 16 Dec 2009.

To cite this article: G.H.K. Thwaites (1849) XXVI.—Note on *Cystocoleus*, a new genus of minute plants, *Annals and Magazine of Natural History: Series 2*, 3:16, 241-242, DOI: [10.1080/03745485909494754](https://doi.org/10.1080/03745485909494754)

To link to this article: <http://dx.doi.org/10.1080/03745485909494754>

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THE ANNALS
AND
MAGAZINE OF NATURAL HISTORY.

[SECOND SERIES.]

No. 16. APRIL 1849.

XXVI.—*Note on Cystocoleus, a new genus of minute Plants.* By
G. H. K. THWAITES, Lecturer on Botany and Vegetable Physiology in the Bristol Medical School.

[With a Plate.]

HAVING recently been fortunate enough to meet with good specimens of the *Byssus nigra*, Eng. Bot., I have been enabled to ascertain very satisfactorily its real structure, about which botanists appear hitherto to have been in much doubt. The structure of this plant is so peculiar as to render necessary its removal from the genus *Chroolepus*, in which it now stands; and with the sanction of my friend, the Rev. M. J. Berkeley, I propose for it the new generic name of *Cystocoleus*, characterized as follows.

Cystocoleus. Plantæ confervoidæ, cæspitosæ; filamentis articulatis, cylindricis vel submoniliformibus, plus minusve ramosis, vagina cellulosa continua singulatum inclusis. *Chroolepo* affinis.

Cystocoleus ebeneus. Fusco-niger, fragilis, parce ramosus. Conferva ebenea, *Dillw.* t. 101.

Byssus nigra, *E. B.* t. 702!

Chroolepus ebenea, *Ag. Syst. Alg.* p. 36; *Harvey in Eng. Fl.* p. 381; *Manual of British Algæ*, p. 190.

It will be seen by the above generic characters that this plant differs essentially from *Chroolepus* in having its filaments included in a sheath composed of distinct cells, the membrane of which is of a dark fuscous colour, and thus the internal filament can in most cases be with difficulty observed and examined. Occasionally, however, the internal filament, which in structure and character closely resembles the filaments of *Chroolepus*, protrudes beyond the investing sheath, and may then be seen to consist of oblong cells containing the peculiar reddish oily-looking endo-

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chrome of *Chroolepus*. The investing sheath is similar in character to that of *Rhizonema interruptum*, Eng. Bot. Supp. t. 2954, but the cells composing the latter are not at all opaque. Delicate root-like appendages are given off from the sheaths of both species: indeed the analogy between these two species is curious, where the affinity is not very close.

It is interesting to observe in these minute plants a parallel and simultaneous growth of an internal filament and an investing sheath, each in some measure independent of the other and representing separate systems of cellular development. This will assist, I believe, to throw light upon the real structure of the apparently homogeneous gelatinous sheaths with which many of the lower plants are furnished.

Professor Harvey has placed provisionally in the genus *Chroolepus* some other minute species of a dark colour and having an external resemblance to the present plant: that excellent botanist, however, at the same time remarks that they will probably prove to be fungi. *Chroolepus*? *Arnottii*, Harv., for a specimen of which I am indebted to the kindness of Professor Harvey, is considered by Mr. Broome identical with the *Torula conglutinata* of Corda, and in this opinion I quite agree with him. It is properly an *Antennaria*. The present plant has nothing to do with the genus *Helminthosporium*, though some species of that genus has evidently been confounded with it by Capt. Carmichael and others.

Chroolepus and *Cystocoleus* form with the genus *Cænogonium*, Ehrenb., a small natural group, which it is difficult to locate in either of the principal divisions of cryptogamic plants. In the structure of their filaments they exhibit an affinity to the *Algæ*, whilst they resemble the *Lichens* in the kind of situations in which they are found growing. *Cænogonium* has, moreover, *apothecia* very like those of a Lichen. Professor Kützing has grouped together the genera *Chroolepus*, *Chantransia* and *Chlorotylum*, constituting of them his family *Chantransiæ*, and arranging them amongst the *Algæ* near the *Draparnaldiæ*.

EXPLANATION OF PLATE VIII. B.

Fig. 1. Filament of *Cystocoleus ebeneus*, with root-like appendages. Magnified 270 linear.

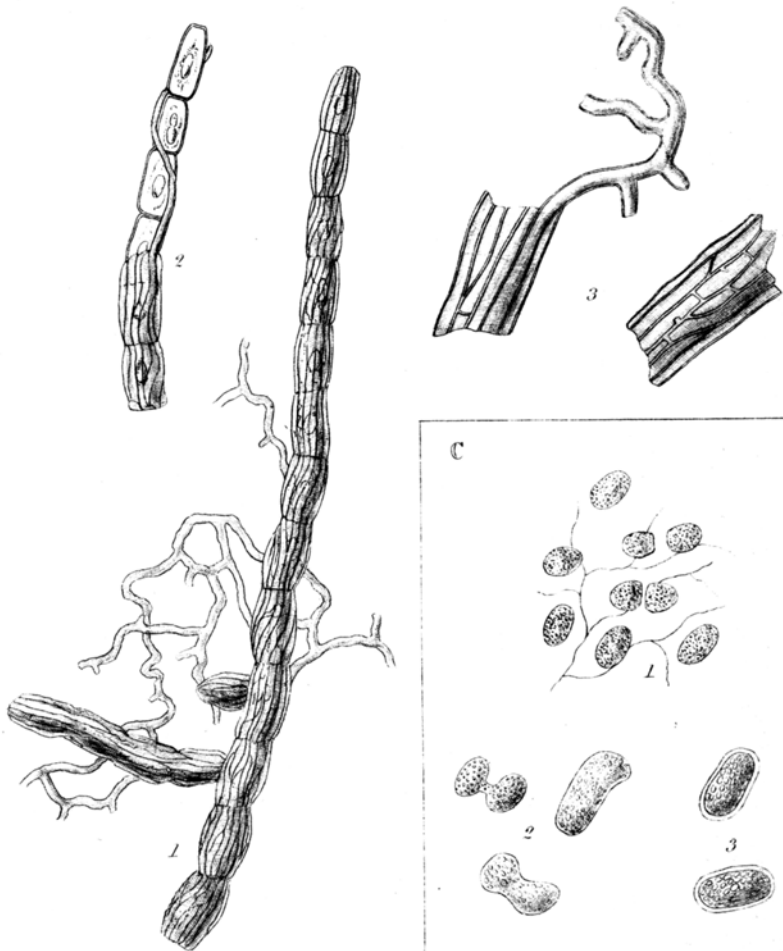
- 2. Apex of a filament, in which the development of the investing sheath has been arrested, and exhibiting the internal filament like that of *Chroolepus*. Magnified 270 linear.
- 3. Portions of investing sheath. More highly magnified.

A



Synalissa vulgaris.

B



Cystocoleus ebeneus.

C



Coccochloris Brebissonii.