On a new species of the genus Collodictyon Carter, a colourless flagellata new to the Hongkong flora.

(De specie et genere Collodictyon Carter nova ad flora Hongkongensis.)

by

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Abstract

While the author was travelling from China to Brasil in 1962 via Hongkong, he visited The Peak, a mountain near the city, and collected samples of mosses. These were cultivated with the addition of pepton for flagellata at the Cryptogamic Laboratory of the Botanical Institute, Sao Paulo. Amongst the numerous aerial diatoms present in the culture a large colourless flagellate was found which was feeding on both the diatoms and green algae. This flagellate belongs to the genus Collodictyon proposed by Carter many years ago from India. During the past 20 years it has been found in many parts of Europe. The Hongkong specimens are here described as Collodictyon hongkongense sp. nov.

The genus Collodictyon was referred by A. Pascher and E. Lemmermann (1914) to the family Tetramitaceae, order Protomastiginae. Pascher in 1927 transferred it to the colourless Volvocales. In the latest revision, made by Russian algologists of Charkov University (Dedusenko-Shtegoleva, et al., 1959), Collodictyon is placed near to the colourless genera Polytomella Aragao and Cyromitus Skuja of fam. Polystomellaceae (Aragao) Volvocales.

Studying the description of the genus Collodictyon in different books, the present author has come to the conclusion that the descriptions were made from different species which seem to be from different genera. For instance, in the description of 1914 (Pascher & Lemmermann) the cells of Collodictyon are stated to be strongly metabolic: in the revision of 1959 (Dedusenko-Shtegoleva et al.), it is written that the cells have a distinct periplast.

The Hongkong specimens are not similar to Collodictyon triciliatum Carter as given by Pascher and Lemmermann.

Collodictyon hongkongense sp. nov. Figs. 1–7.

Differt a C. triciliato membranis non metabolicis, vacuolis contractilibus nullis vel indistinctis, nucleo indistincto, forma monadis diversa, posteriore acuta vel bifurcata.

Cellula solitaris, libere natans, vix vel non metabolicia, holozoice nutrita, applanata, ambitu variabilis ovata, oblonga vel fere fusiformis, aut triangularis, 10–15–18–26, 37–40 μ longa; anteriore acuta, truncato-rotundata, plerumque depressa, cum nucleo indistincto, supra medium sito posteriore utrinsecus angustata, apice
Collodictyon hongkongense.
acuta or caudata, oblique truncata vel bilobata; ventre carinis 2 paulo altis longitudinaliter praedita; dorso fere applanata. *Periplastus* nullus vel tenuissimus, superficie rugosus, nunquam laevis; cytoplasmata hyalinum, vacuolis multis cum granulis olei leucosinique copiosis instructo; vacuolis contractilibus non visis. *Pseudopodia* posteriora tantum visa, vix metabolica, simplicia, extensibilia. *Flagella* 4, tenuissima, vix visibilia, aequalia, monade aequilonga vel eo paulo longiora. *Proles* divisione cellulae motae longitudinali aucta.


Differ from *C. triciliato* in the cells being of different shape and non-metabolic and contractile vacuoles being absent or indistinct, indistinct nucleus and acute or bifurcate posterior end.

Cells solitary, free swimming, hardly or non-metabolic, holozoically nourished, flattened, varying in shape from ovate, oblong or almost fusiform or triangular, 10–40 μ long; anteriorly acute, truncate rounded, often depressed, with an indistinct nucleus seated above the middle, contractile vacuoles not seen; posteriorly narrowed on both sides, acute or caudate at apex or obliquely truncate or bilobed; ventrally provided with little raised ridges; dorsally more or less flattened. *Periplast* absent or very slender with its surface rugose, never smooth; plasma transparent, having many vacuoles abounding in oil and leicosin granules; contractile vacuoles not seen. *Pseudopodia* seen only in the posterior, hardly metabolic, simple, extensible (?). *Flagella* 4, very slender, hardly visible, equal, as long as the cell or slightly longer. Offspring produced by longitudinal division of free moving cells. Locomotion is by creeping or rotation, and is not rapid. Feeding holozoic, diatom fustules, or more rarely cells of Chlorophyta adhering to the periplast are covered over.

Habitat: The Peak, Hongkong, in mosses growing in rocks, collected by B. Skvortzov, 15 August 1962; holotype cultivated from this material at the Cryptogamic Laboratory of the Instituto de Botanica, Sao Paulo, Brasil and deposited there.

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Literature


