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On the occurrence of *Audouinella hermannii* (Rhodophyta: Acrochaetiales), a rare freshwater red alga from Eastern India

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पूर्वी हिमालय से एक दुर्लभ स्वच्छ जलीय लाल शैवाल *ओडोइनेल्ला हरमानाई* (रोह्डोफायटाः एक्रोकिटेल्स) की प्राप्ति

नरेन्द्रनाथ कोले, जयमाल एवं जय प्रकाश केशरी

सारांश

पूर्वी हिमालय में दुर्लभ स्वच्छ जलीय लाल शैवाल सदानीरा जलप्रपात से *ओडोपनेल्ला हरमनाई* (रोथ) डूबी को अभिलेखित किंया गया है। इस जाति के सम्पूर्ण थैलस को विकसित चर्तुबिजाणोभिद अवस्था में संग्रहित किया गया है।

ABSTRACT

The rare fresh water red alga, *Audouinella hermannii* (Roth) Duby has been recorded from the Himalayan streams of Eastern India. The entire thallus with developing tetrasporangia(?) has been collected.

Keywords: Acrochaetiales, *Audouinella*, Eastern India, Freshwater, Rhodophyta.

INTRODUCTION

Audouinella Bory is one of the few little investigated genera of fresh water red algae in India. It is close in morphology to *Acrochaetium* Nägeli. However, various authors have different views regarding the circumscription of these two genera. Desikachary & al., (1900) have included fresh water species under *Audouinella* while marine species having well-defined prostrate disc have been included under *Acrochaetium* Nägeli. Kumano (2002) in his monograph, "Fresh water red algae of the world" considered the taxon having laminate or ribbon-shaped chloroplast as *Audouinella* Bory while taxon having stellate chloroplast as *Acrochaetium* Nägeli. He further suggested that the following species of *Acrochaetium*, viz., *A. godwardense* Patel, *A. indica* Raikwar and *A. sarmae* Khan have to be included under *Audouinella* as per the taxonomic system of Lee and Lee (1988), however, the original specimens of these species have to be studied critically.

Ganesan & al., (2018) recognized all freshwater members belong to the genus, *Audouinella* and reported 12 species from India. In the present paper, *A. hermannii* (Roth) Duby has been described and illustrated. The alga has been recorded from the North Bengal, at the foot-hills of Eastern Himalayas.

MATERIAL AND METHODS

The sample was collected from running water of Sikia Jhora (26°55′27.58″ N longitude ; 89°56′92.72″ E latitude) of Alipurduar district of West Bengal during 2018. During the time of collection, the pH (6.7), temperature (35.9°C), TDS (55 ppm), conductivity (71 µS), salinity (0.039 ppt) were recorded on the spot using multi-parameter device (Multi-parameter PCSTestrt™ 35) and the samples were preserved in 4% formalin. Geographic coordinates were recorded by GPS device (GPS MAP 78S, GARMIN). All the specimens were deposited in the Algae Herbarium of Department of Botany, The University of Burdwan (BURD) after preparing the permanent slides following standard procedure. The preserved samples were studied under Olympus GB compound microscope and images were taken using Zeiss Axiostar plus Microscope (Axiocam 504).

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Fig. 1. A. Collection site and habitat

TAXONOMIC DESCRIPTION

Audouinella hermannii (Roth) Duby in DC., Bot. Gall.: 972. 1830; Kumano, Freshwater Red Algae of the World: 47, pl. 19, f. 14. 2002. *Conferva hermannii* Roth 1797: 164.

Thallus bluish, growing in running waters of streams mixed with other algae composed of over 50 cells, basal part made of irregular system of densely aggregated filaments; erect upper part well-branched, with both alternate and opposite branches developing at angles more or less than 25^0 vegetative cells of main and lateral both cylindrical 7–9 µm in diam. and 18–45 µm long; chloroplast distinctly laminate covering most part of the cell; monosporangia ovoid to sub-spherical mostly growing in pairs, 9–11.3 µm in diam. and 9–14 µm in length; tetrasporangia(?) 11.3 µm broad and 14 µm long.

Notes : - Earlier, Das & Peters (1990) reported this species as *A. violacea* (Kützing) Hamel from a spring at Lupungutu, Chaibasa, Singhbhum district of Jharkhand on a monosporangiate form. Rout & Gaur (1994), while dealing with the stream ecology in Meghalay, enumerated the taxon without any illustration or description. However, during the present study, well-developed thalli with tetrasporangia(?) have been observed.

CONCLUSION

From the present study, it is apparent that terai Himalayan water bodies harbour excellent habitats for the growth of Red algae. The detailed morphotaxonomic studies along with ecology & molecular studies needed to know the range of distribution of this group.

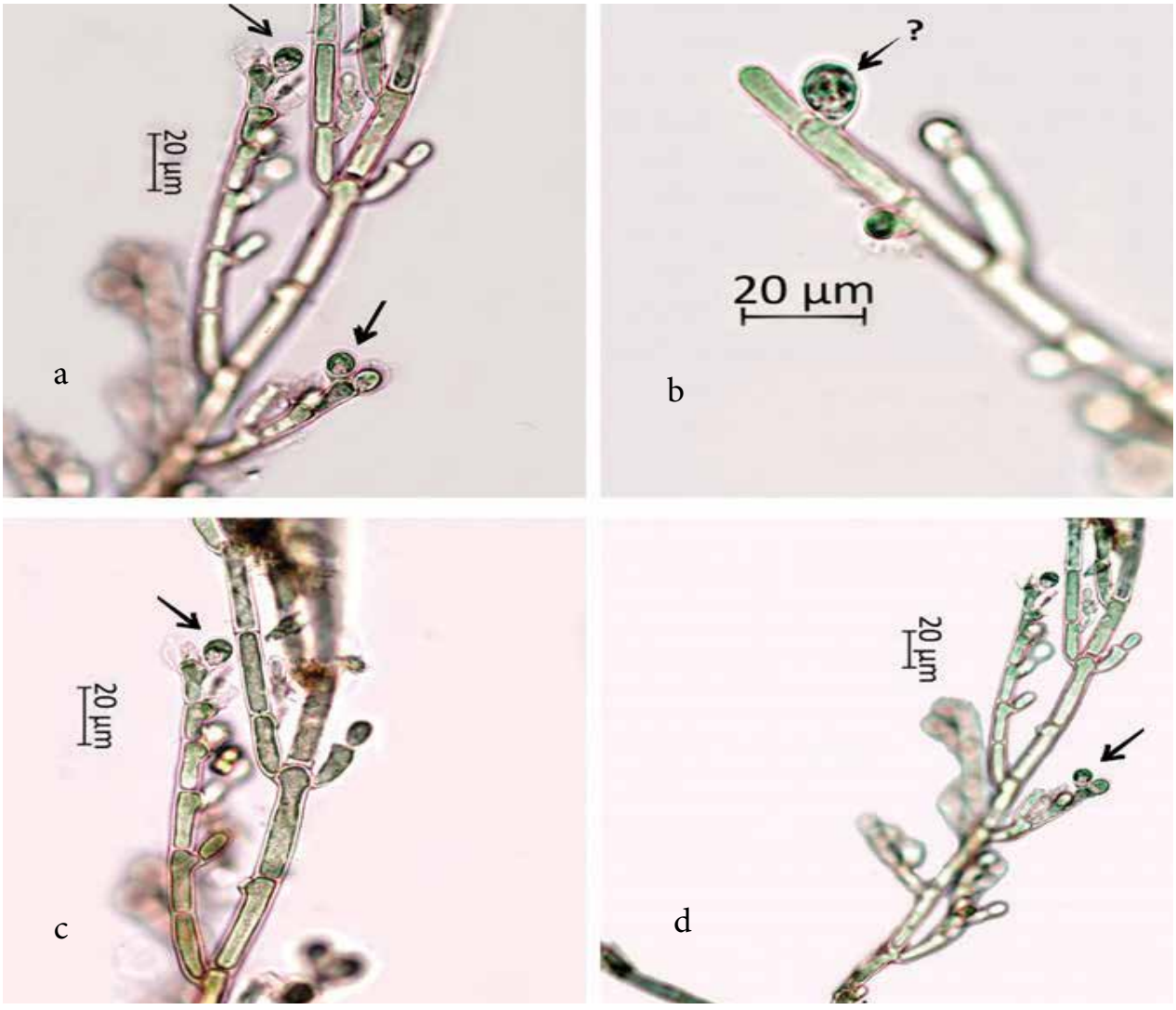

Fig. 2. a, c & d. Alga showing branching habit and sporangia (arrow-marked); **b.** Alga showing tetrasporangia(?) (arrow-marked)

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