

***NITELLOPSIS OBTUSA* (DESV.) J. GROVES : A NEW  
CHAROPHYTIC RECORD FOR BANGLADESH**

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Hy established *Nitellopsis* Hy as a genus in 1889. *Nitellopsis obtusa* (Desv.) J. Groves was described as *Chara obtusa* in 1809 by Desvaux. This genus includes three species, viz., *N. obtusa* (Desv.) J. Groves, *N. bulbifera* C. Dont. and *N. sarcularis* Zaneveld (Wood and Imahori, 1965). *Nitellopsis obtusa* (Desv.) J. Groves, a macroalga is widespread throughout Europe and Asia from Scandinavia to Japan. Kundu (1929) initiated Charophyte research in the then East Pakistan (now Bangladesh). Then the Charophyte flora has been worked out by Kundu (1938), Agharkar and Kundu (1937), Islam and Sarma (1976), Zaman (2001), Aziz and Tanbir (2003) and Naz and Diba (2009). So far, four genera, namely *Chara*, *Nitella*, *Lychnothamnus* and *Lamprothamnium* have been described from different parts of Bangladesh. In the present investigation the genus *Nitellopsis* Hy and its species *Nitellopsis obtusa* (Desv.) J. Groves has been recorded for the first time in Bangladesh.

The plant materials were collected from a shallow water zone (10 cm depth of water) of the river Mahananda of Chapai-Nawabganj district. Fresh materials were freely displayed on a petridis with distilled water and photomicrographs were taken by SONY DSC W-55 under compound microscope (Model L-101). Specimens have been kept in the herbarium of Phycology and Limnology Laboratory, Department of Botany, University of Rajshahi, Bangladesh and also preserved in Transeau's solution (Transeau, 1951). Camera Lucida drawings were made at 25x, 50x, 60x, 100x and 150x magnifications. Air temperature and relative humidity of the sampling location were measured by a digital thermometer and a humidity meter (Model: HANNA), respectively.

***Nitellopsis obtusa* (Desv.) J. Groves, Jour. Bot. 57: 127. 1919. [*Chara obtusa* Desvaux in Loiseleur-Deslongchamps, Not. Pl. Fl. France, p. 136. 1810. *Nitellopsis stelligera* (Bauer) Hy, Rev. Bot. 8: 46. 1890.] (Pl. 1, Figs A-L; Pl. 2, Figs 1-10)**

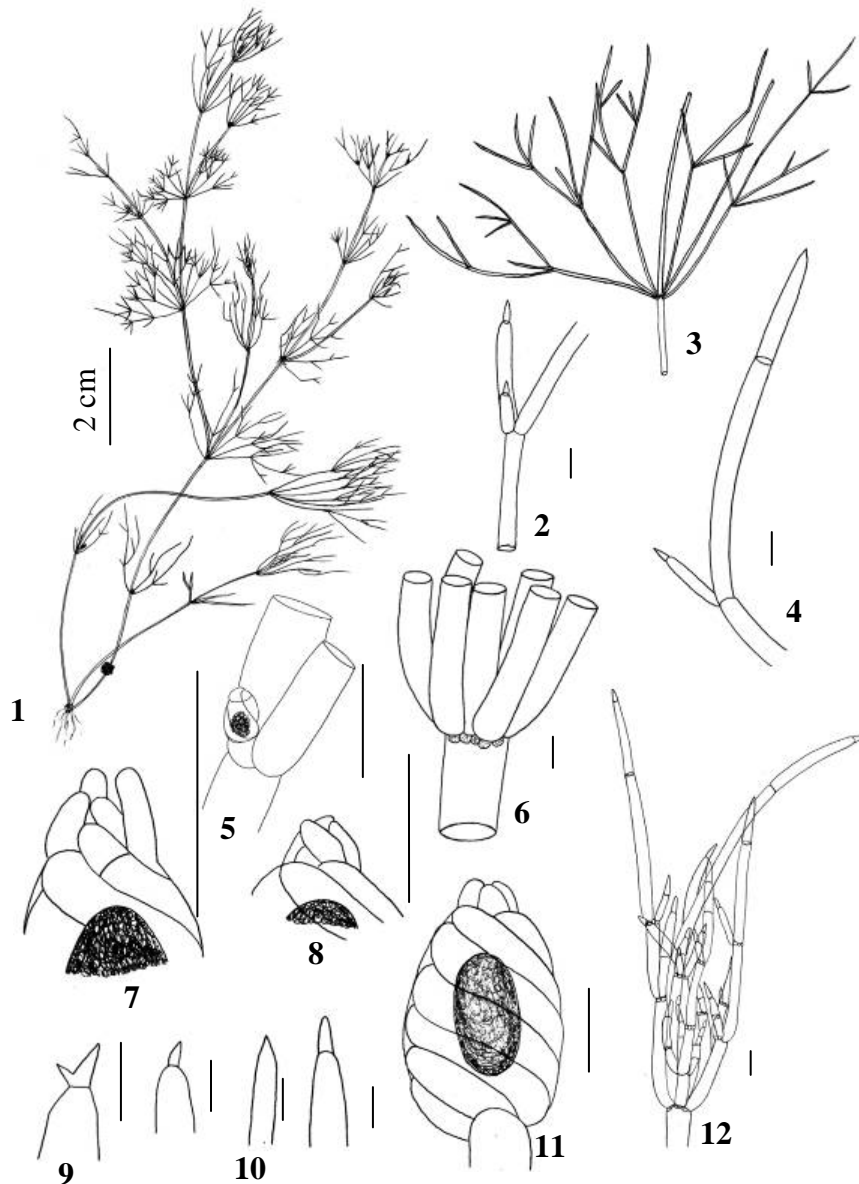
(Groves and Webster 1924, 3, Pl. 24, Figs. 1-8; Pal *et al.* 1962, 80, Figs. 171-175; Krause 1997, 128, Fig. 50: A-I; Langangen *et al.* 2002, 30, Fig. 20; Schubert and Blindow 2003, 216, Fig. 4.28.1: A-J).

*Common name:* Starry stonewort.

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Plant dioecious, upto 14 cm high, not incrusting, deep green, lower axial nodes white, stellate; plant entirely ecorticate; stem slender, up to 458  $\mu\text{m}$  in diameter; stipulodes absent; branchlet up to 2 cm long; internodes up to 4 cm long; branchlet 5-7 in a whorl,



Figs. 1-12. *Nitellopsis obtusa* (Desv.) J. Groves. 1. Habit; 2. Bract cells; 3. A whorl; 4. Upper portion of a branchlet and bract cells; 5. A branchlet node and oogonium; 6. Stem node; 7, 8. One tier corona; 9. Bifid end cell (aberration); 10. End cells (acuminate-mucronate); 11. Oogonium; 12. A young whorl. (Scales= 0.2 mm).

straight, incurved (above), reflexed (below), segments 2-3, elongate; end segment 1-2 celled, cylindrical; end cell short, conical, acuminate-mucronate; bract cells 2-4, conical, sometimes absent, cylindrical, resembling the end segment of branchlets; oogonium solitary, egg-shaped, 500  $\mu\text{m}$  long (including corona), 343  $\mu\text{m}$  wide, convolutions 6-9; corona small, one tier, rarely elongate, 43-72  $\mu\text{m}$  long, 57-72  $\mu\text{m}$  wide at base; oospore 286  $\mu\text{m}$  long, 272  $\mu\text{m}$  wide (plant richly fertile but ripe oospores were not found); antheridium (male plant) not found. Bulbils white, stellate.

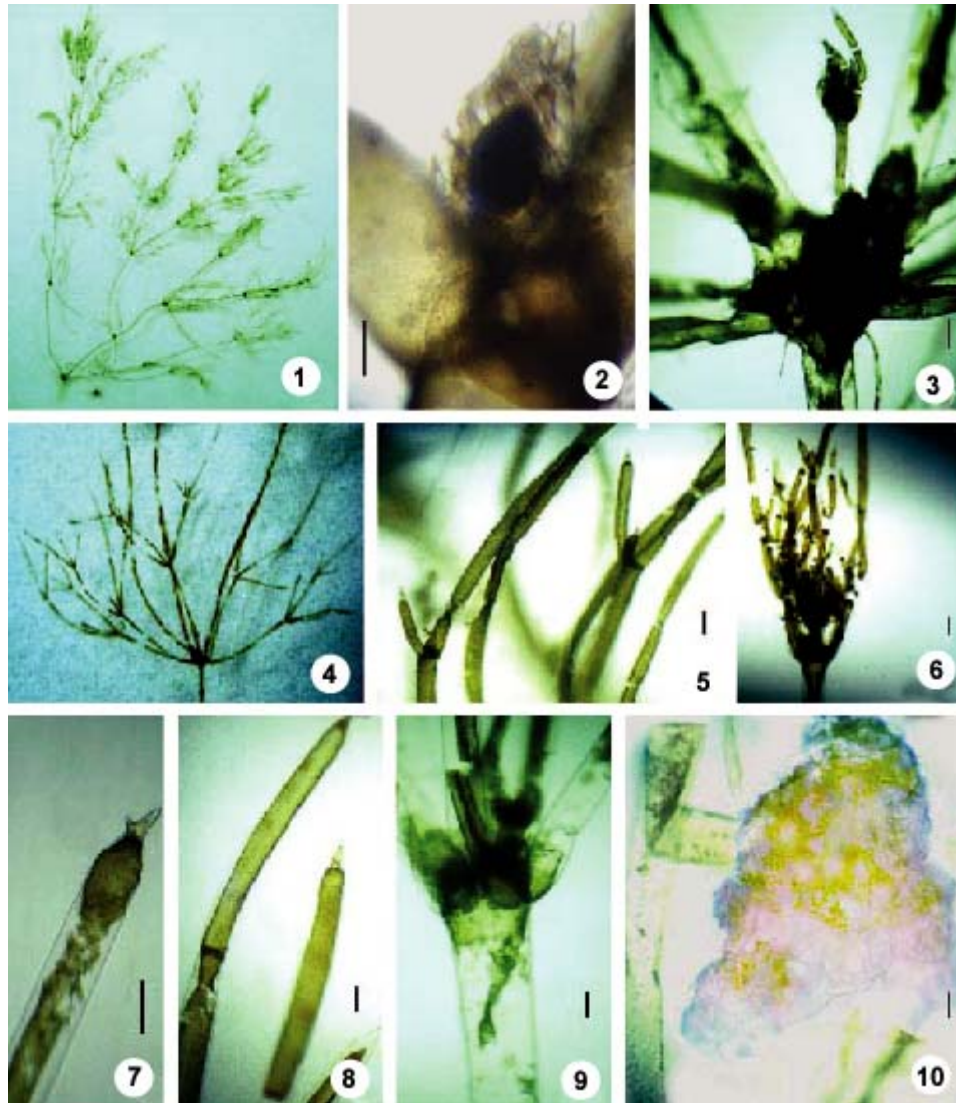


Plate 2. *Nitellopsis obtusa* (Desv.) J. Groves 1. Habit; 2. Oogonium; 3. New shoot arising from stem node; 4. A whorl; 5. Bract cells; 6. A young whorl; 7. Bifid apices of branchlet; 8. Apices of branchlet; 9. Stem node; 10. Bulbil. (Scales= 0.2 mm).

*Specimen examined:* Chapai-Nawabgonj, Mahananda river, 15.03.2004, Nasrin Jahan Diba Col. No.1.

*Ecology:* Freshwater lotic habitat (river) with sandy bottom at 10 cm depth of water. This plant was found from a depth of about 1500 m from Dhal lake in Kashmir (Pal *et al.*, 1962). Existing literature further reveals *Nitellopsis obtusa* is a species which often is found in deep water, from 1-8 m; mainly found in freshwater but also in brackish water in the Baltic Sea.

*Distribution:* *Nitellopsis obtusa* is mainly distributed in Europe but occasionally it is found in Asia and Africa including India, Pakistan, Myanmar, Malaysia, Japan and Iraq.

*Notes:* *Nitellopsis obtusa* does not often produce oospores and vegetative reproduction by star-shaped bulbils is therefore important. Fructification is very low for this species and ripe oospores are rarely found. During the present study ripe oospores were not observed. Fructification is in July-October and is dependent on light intensity (Langangen, 2007). Schubert and Blindow (2003) state that antheridia are occasionally found in *Nitellopsis obtusa*, however, in the present investigation, we did not find antheridia. The plant resembles *Nitella translucens* (Pers.) Agardh but there is no terminal branchlet corona in *Nitellopsis obtusa* and by contrast there are no bract-cells or bulbils in *Nitella translucens* (Wood and Imahori, 1965). The species is easily recognizable by means of its bulbils, which in the examined material are common on most nodes, but best developed on the lower nodes.

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