

Bryophytes from Unchahar, Raebareli, U.P.

Adarsh Kumar and Shazia Kazmi

Botany Department, Feroze Gandhi College, Raebareli-229001

Kumar, A. & Kazmi, S. 2004. Bryophytes from Unchahar, Raebareli, U.P. *Geophytology* 34 (1 &2): 121-123.

Key-words—Bryophytes, Unchahar, Raebareli.

BRYOPHYTIC flora around National Thermal Power Corporation, Unchahar, Raebareli, Uttar Pradesh has been identified. The collections were made from Bikargarh, Gangehra, Kharauli, Kandrawan, Jamnapur, Jagatpur, Arkha and Kaithaul.

The climate of the area is tropical and humid and the soil is mainly alkaline and sandy loam in nature.

The bryophytic flora comprises one thalloid and three leafy forms. The thalloid form belongs to family Ricciaceae and identified as *Riccia grollei* Udar. The leafy forms are identified as *Ceratodon stenocarpus* B.S.G. (family Ditrichaceae), *Barbula consanguinea* (Thw. et Mitt.) Jaeg. (family Pottiaceae) and *Physcomitrium indicum* (Dix.) Gangulee (family Funariaceae).

Riccia grollei Udar in Curr. Sci., 34:126 (1965) Plate 1A, Figs. 1-4

Plants 2-5 mm long and 2-3 mm wide, green, finger print like impression on the dorsal surface of thallus; both simple and tuberculate rhizoids present; scales feebly developed; photosynthetic filament 220µm long, 5-8 cells in one filament, filaments compact with characteristic tuberculate thickening; air pore simple, 10-12µm; chloroplasts numerous in green cells of photosynthetic filaments and in storage zone; neck of archegonia 130µm and venter 80µm; young spores yellowish brown, mature dark brown, 81-90µm along the diameter, isopolar, reticulate, 4-6 angled, tri-radiate mark absent, 7-8 reticulations along the diameter, size of one reticulation 10-14µm, wings absent.

Specimens examined: ERC 3/2002, Loc. Kaithaul, Date: August 16, 2002; Leg.: Shazia Kazmi, Det.: Adarsh Kumar and Shazia Kazmi.

Habitat : The genus was found growing on the mud wall in the south of NTPC, Unchahar.

Ceratodon stenocarpus B.S.G. in Bryol. Eur., 2:146 (1846)

Plate 1B, Figs. 1-5

Plants tufted, branched, green, yellowish brown when dry, up to 1-4mm long; stem covered with leaves of 2-3mm long, 1mm broad base, apex twisted when dry, lanceolate, gradually acuminate, margin smooth, cells rectangular, apical cells 10-12µm x 10-13µm, middle 20-22µm x 10-13µm, basal 37-40µm x 20-22µm; rhizoids brown, branched, septate; plants sterile.

Specimens Examined- ERC 7/2002, Loc.: Mustafabad, Date: August 16, 2002; ERC 1/2002, Loc.: Jamnapur, Date: August 16, 2002; ERC 15/2002, Loc.: Arkha, Date: September 15, 2002; ERC 22/2002, Loc.: Gangehra, Date: January 5, 2003; ERC 34/2003, Loc.: Front of NTPC, Date: February 15, 2003; Leg.: Shazia Kazmi, Det.: Adarsh Kumar and Shazia Kazmi.

Habitat - Mainly wall flora, the growth is dense towards west.

Barbula consanguinea (Thw. et. Mitt) Jaeg. in Ber. S. Gall.

Naturw. Ges., 1877-78:409 (1880)

Plate 1C, Figs. 1-6

Plants yellowish green, growing in dense tufts, simple or branched, approx. 4-25mm in length 1mm in

width; leaves somewhat curled when dry, lanceolate, margin smooth, 1-2mm long, leaf tip obtuse, margins slightly recurved below, costa prominent, cells chlorophyllous, marginal cells 12-20 μ m x 10-12 μ m, apical cells 10-15 μ m x 8-12 μ m, middle cells 15-20 μ m x 12-18 μ m, basal cells 25-30 μ m x 20-22 μ m, rhizoids brown, septate and branched; sporophyte 12-14mm, erect, reddish brown, 9-10mm long, capsule reddish green, immature, ovate-cylindrical, 1mm long, calyptra covering top of the capsule, 2mm long; multicellular gemma approx. 70-100 μ m long, full of chloroplast, present in clusters in the leaf axils.

Specimens Examined- ERC 1/2002, Loc.: Bikagarh, Date: August 16, 2002; ERC 2/2002, Loc.: Gangehra, Date: August 16, 2002; ERC 6/2002, Loc.: Akhorhia, Date: August 16, 2002; ERC 9/2002, Loc.: Kandrawan, Date: August 16, 2002; ERC 14/2002, Loc.: Arkha, Date: September 15, 2002; ERC 17/2002, Loc.: Kaithaul, Date: September 15, 2002; ERC 24/2003, Loc.: Kharauli, Date: January 5, 2003; ERC 26/2003, Loc.: Jamnapur, Date: January 5, 2003; ERC 37/2003, Loc.: Jagatpur, Date: February 23, 2003; Leg.: Shazia Kazmi, Det.: Adarsh Kumar and Shazia Kazmi.

Habitat - The plants were found on the bricks and the mortar fillings between the bricks. The growth is almost uniform in all the directions forming mats on the walls.

Physcomitrium japonicum (Hedw.) Mitt. In Trans. Linn. Soc. Bot. Lond. Ser. 2, 3; 164 (1891) Plate ID, Figs. 1-6.

Plants approx. 2-4mm long, bright green; leaves clustered on top, lower leaves 1mm long, upper leaves 3mm long, lanceolate, margins dentate throughout but sometimes in upper part only, wide base 1mm broad, gradually becoming narrower and more elongated at top, costa prominent, cells chlorophyllous, apical cells 20-30 μ m x 15-20 μ m middle cells 30-60 μ m x 25-22 μ m, basal cells 40-80 μ m x 20-30 μ m; rhizoids reddish brown, septate, branched; seta approx. 3-5mm, capsule globose, 1mm high, operculum small, 5mm high, spores round, brown, 50-54 μ m in diameter.

Specimens Examined - ERC 4/2002, Loc.: Arkha, Date: August 16, 2002; ERC 10/2002, Loc.: Kandrawan, Date: August 16, 2002; ERC 12/2002, Loc.: Bikagarh, Date: September 15, 2002; ERC 13/2002, Loc.: Akorhia, Date: September 15, 2002; ERC 20/2002, Loc.: Jamnapur, Date: September 15, 2002; Leg.: Shazia Kazmi, Det.: Adarsh Kumar and Shazia Kazmi.

Habitat - Poor growth, mainly on the mud walls. The population towards west of the NTPC was comparatively thicker than elsewhere.

ACKNOWLEDGEMENT

We express our sincere gratitude to Prof. S.C. Srivastava, Head, Department of Botany, University of Lucknow for confirming the identification of *Riccia grollei* Udar. We are also thankful to Head, Department of Botany and Principal, Feroze Gandhi College, Raebareli for providing the laboratory facilities.

PLATE 1



A. *Riccia grollei* Udar: 1. Thallus dorsal; 2. Transverse section of thallus; 3. Photosynthetic filaments showing characteristic tubercular thickening; 4. Spores.

B. *Ceratodon stenocarpus* B.S.G.: 1. Plant; 2. A leaf; 3. Leaf cells from upper part; 4. Leaf cells from middle part; 5. Leaf cells from basal part.

C. *Barbula consanguinea* (Thw. et Mitt.) Jaeg.: 1. Plant with sporophyte; 2. A leaf; 3. Leaf cells from upper part; 4. Leaf cells from middle part; 5. Leaf cells from basal part; 6. Gemmae.

D. *Physcomitrium japonicum* (Hedw.) Mitt.: 1. Plant with sporophyte; 2. A leaf; 3. Leaf cells from upper part; 4. Leaf cells from middle part; 5. leaf cells from basal part; 6. Spores.

