CHAPTER IV

CYANOPHYTA
Present chapter describes the taxonomy of the species belonging to division Cyanophyta (Blue-Green Algae). In a series of papers Kawal Mathur (1980b, 1981, 1982) described a Cyanophycean genus Spirulina in the various formations of Miocene-Pliocene Archipelago Group exposed on Havelock Island, Outram Island and Sir Huge Rose Island. The two species, viz., Cayeuxia andamanica sp. nov. and Baratangia densituba gen. et sp. nov. have been discovered in calcareous coarse grained sandstone exposed at South Creek classified under Lower Palaeocene-Lower Eocene Baratang Group. Discovery of Cyanophycean algae in the Lower Palaeocene to Lower Eocene rocks of Baratang Island is significant as Wray (1977, p. 43) states that Cyanophycean algae seem to be unrecorded in the Cenozoic.

**SYSTEMATIC DESCRIPTION**

Family : Cyanophyceae
Genus : *Baratangia* gen. nov.
Type species : *Baratangia densituba* gen. et sp. nov.

(Pl. 6, figs. 1, 2, 3).

Generic diagnosis : Irregular nodular filamentous masses; filaments coenocytic, radially arranged and compact towards...
the central portion but quite loose, curving or flexuous in the peripheral zone; distinctly beaded giving a grid like appearance towards the center of the nodule; branching at a narrow angle of 20-25° is more common.

Remarks: The present genus resembles closely *Parachaetetes* Dëninger known from Late Ordovician to Palaeocene (Johnson, 1969, pls. 9-11) in its gridlike appearance of the central portion. However, a coenocytic nature of the filaments in the new genus helps separating them.

*Bevocastria* Garwood known to occur in Carboniferous rocks (Johnson, 1961b, p. 96, pl. 23, figs. 1-3) has beaded and branching filaments like the present genus. However, in the former, angle of branching is distinctly wider and a differentiation into compact central filaments and loose peripheral filaments is not present.

The present genus differs from *Cayeuxia* Frollo (Johnson, 1969, p. 37, pl. 25, figs. 1-3; pl. 26, figs. 1-2) in not having a right angle branching and conspicuous beaded appearance. Genus *Cayeuxia* occurs in Middle Jurassic-Upper Cretaceous sediments.

Etymology: The generic name is after the place of its occurrence.

Horizon and locality: Calcareous coarse grained sandstone exposed at South Creek, Lower Paleocene to Lower Eocene Baratang Group.
**Baratangia densituba** sp. nov.

*(Pl. 6, figs. 1, 2, 3)*

**Material**: Holotype no. MACS G/MF/265.

Paratype nos. MACS G/MF/266 and MACS G/MF/267.

**Dimensions**:

<table>
<thead>
<tr>
<th>Type No.</th>
<th>Diameter of filaments</th>
<th>Length of one bead</th>
</tr>
</thead>
<tbody>
<tr>
<td>G/MF/265</td>
<td>32-42 μm</td>
<td>38-42 μm</td>
</tr>
<tr>
<td>G/MF/266</td>
<td>40-45 μm</td>
<td>46-56 μm</td>
</tr>
<tr>
<td>G/MF/267</td>
<td>20-25 μm</td>
<td>30-35 μm</td>
</tr>
</tbody>
</table>

**Description**: Nodular thallus formed by branching coenocytic filaments being distinctly beaded, and rather loosely disposed.

**Etymology**: Named after the occurrence of characteristic dense tube.

**Genus**: *Cayeuxia* Frollo, 1938

*Cayeuxia andamanica* sp. nov.

*(Pl. 6, fig. 4)*

**Material**: Holotype no. MACS G/MF/264.

**Dimensions**:

- Length of thallus: 1620 μm
- Width of thallus: 1120 μm
- Diameter of tubes: 30-35 μm
Description: Thallus irregular nodule, filaments radially arranged, fairly dense; diameter of filaments more or less constant.

Remarks: Present species differs from Cayeuxia chiplonkari (Badve and Nayak, 1984, p. 182, pl. 2, fig. 3) coming from the Nimar Sandstone, Bagh Beds, M.P. in having an irregular nodular mass and much smaller filament diameter.

From C. kurdistanensis Elliott (Johnson, 1969, p.37, pl. 26, fig. 1; Fluge, 1979, p. 586, pl. 3, fig. 1) occurring in the Lower Cretaceous of Iraq and Iran, Aptian of Texas and Upper Jurassic of Sulzfluh Island, the present species differs in having larger filament diameter.

In C. moldavica Frollo (Johnson, 1961b, p. 96, pl. 29, figs. 1-3; Johnson, 1968, p. 10, pl. 1, figs. 1-2) coming from Lower Cretaceous of France, Italy, Black Escarpment, Middle East, Texas and Jurassic of Hungary, tubes have more variable diameter and hence distinct from the present species.

C. anae Dragastan (Misik, 1979, p. 705, pl. 1, fig.16) found in the Lower Neocomian of West Carpathians differs from the present species in having very long, parallel filaments.

Etymology: Named after Andaman Islands from where it is first described.

Horizon and locality: Calcareous coarse grained sandstone exposed at South Creek, Lower Palaeocene to Lower Eocene Baratang Group.
PLATE 6

Figs 1, 2, 3  Baratangia densituba gen. et sp. nov.  p. 48

1. Holotype no. MACS G/MF/265  X 75
2. Paratype no. MACS G/MF/266  X 136
3. Paratype No. MACS G/MF/267  x 95

Fig. 4  Caveuxia andamanica sp. nov.  p. 50

Holotype no. MACS G/MF/264  x 70