**Bidiscus bifrons** Black, 1972

Figs. 1, 2 — *Bidiscus bifrons* sp. nov. 1) Distal view. Lower Gault, Hockwold (H.948). SM 26960, x 6,000. 2) Holotype, distal view. Lower Gault, Mildenhall (H.962). SM 26318, x 5,350.

**Description:**

Diagnosis: A species of *Bidiscus* with a central vortex in the distal shield surmounted by a spine with a square or cross-like structure at its base.

Description: Only the distal surface is known. The sutures between the petaloid elements are straight, and either exactly radial or have a very slight counter-clockwise precession. The ends of the rays are often gently rounded. The central vortex is not equally well developed in all specimens; when well formed, the component crystallites have a right-handed imbrication, and their exposed edges have a clockwise precession. The square, central elevation usually consists of four crystals, and may be surmounted by a spine rising to a total height of 4 μ. Measurements (in microns):

<table>
<thead>
<tr>
<th>Holotype:</th>
<th></th>
<th>d</th>
<th>d'</th>
<th>c</th>
<th>n</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.962</td>
<td>26318 distal view</td>
<td>5.3</td>
<td>5.2</td>
<td>1.6</td>
<td>17</td>
<td>32%</td>
</tr>
<tr>
<td>H.940</td>
<td>26513</td>
<td>4.5</td>
<td>4.5</td>
<td>1.2</td>
<td>12</td>
<td>27%</td>
</tr>
<tr>
<td>H.948</td>
<td>26960</td>
<td>4.4</td>
<td>?</td>
<td>1.1</td>
<td>13</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>26967</td>
<td>4.3</td>
<td>?</td>
<td>1.6</td>
<td>14</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>27040</td>
<td>5.0</td>
<td>4.8</td>
<td>1.3</td>
<td>16</td>
<td>26%</td>
</tr>
</tbody>
</table>

d, d' = major and minor diameters respectively of the distal shield or distal surface.

c = major diameter of the central area.

n = number of component elements in the distal shield, loxolith-ring or other marginal structure.

x = central vortex as percentage of diameter of distal shield.

**Remarks:**

This species resembles *B. cruciatus cruciatus* Bukry, which also has a square or cross-like superstructure at the centre, but differs in being invariably larger than the maximum size of that subspecies (3·4 μ), and in having a more strongly developed vortex underlying the cross.
Type level:

Lower Gault.

Occurrence: Known only from about 25 ft above the base of the Gault at Hockwold (H.948) and 26 ft—67 ft above the base at Mildenhall (H.940, H.962). Middle and Upper Albian.

Type locality:

Mildenhall (Southeastern England).

Depository:

Collection of electron micrographs at the Sedgwick Museum, Cambridge. Holotype: SM 26318; fig. 2; from the Lower Gault of Mildenhall (H.962).

Author:

Black M., 1972, p. 24; pl. 1, figs. 1, 2.

Reference: