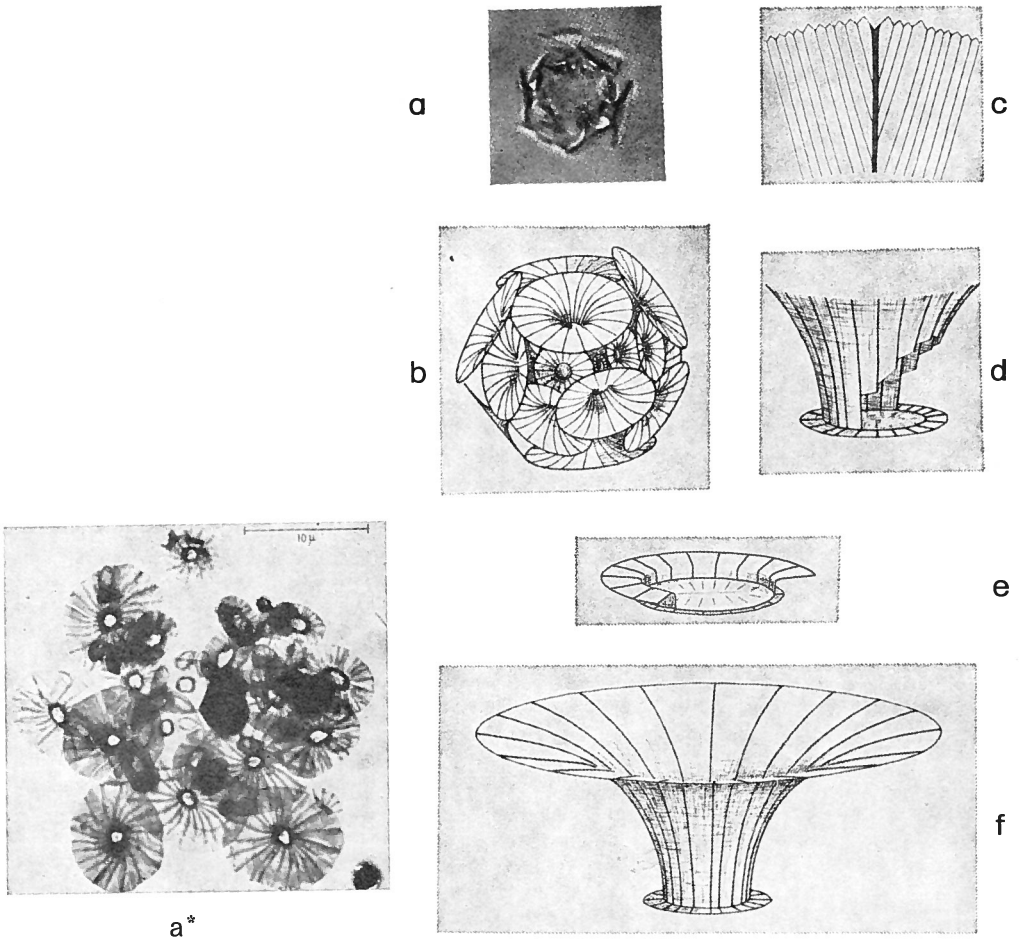
Umbellosphaera irregularis PAASCHE, 1955



Figs. a, b, c, d, e, f, a* — *Umbellosphaera irregularis* n. sp. a) Microphotograph 1000 ×, focused at middle level. b) Sketch of coccolithophorid. c) Detail of micro-structure in upper part of coccolith: radial stripe, and parallel elements in adjacent sections. d) Base of macro-coccolith; in upper part some sections partly removed. e) Sketch of micro-coccolith; a number of sections removed in upper part. f) Sketch of macro-coccolith. Micro-structure omitted in b, d, e, and f. a*) Electron micrographs. Disintegrated coccolithophorid.

Description:

Diameter of protoplast 6-10 µ. Complete organism, having a diameter of 10-20 µ, of a very characteristic, angular appearance due to the peculiar shape of its macro-coccoliths.

Micro-coccolith elliptical (ratio 1.5-1.6). Length of main axis ranging from 1.6 to 3.6 µ, on the average, 2.5 µ. Lower disk elliptical, its length ranging from 1.2 to 2.2 µ, with ratio frequently around 1.65, sometimes up to 2. Periphery

0.1 μ or less in width, comprising about twenty sections. Central area with no marked structure other than a very fine, mainly transversal striation. Upper part 0.2 μ high. Outer brim, attached almost at right angles to the tubular part, 0.2-0.7 μ wide with about twenty radii and a fine micro-structure of parallel stripes, the free ends of which produce a slight dentation of the coccolith edge. Large *macro-coccoliths* almost circular, ratio not exceeding 1.25. Smaller ones more elliptical (ratio up to 1.6). Main axis ranging from 4.6 to 10 μ, the average being 6.7 μ. Lower disk in large macro-coccoliths circular, in smaller ones elliptical (ratio 1.6), its length ranging from 1.6 to 2.4 μ. Periphery 0.3 μ wide, markedly divided into approximately twenty sections. Central area possibly with the same structure as described for micro-coccoliths. Upper part pronouncedly funnel-shaped; outer brim flattened, but never convex. Height never exceeding 4 μ or 2/5 of coccolith diameter. Number of radial stripes 15-25, in most cases 17-20, the sections often very unequal in width. Micro-structure as described for micro-coccoliths, giving an impression of great fragility.

Remarks:

The two species of the new genus *Umbellosphaera*, *U. irregularis* and *U. tenuis*, evidently are closely related. The morphological features of the funnel-shaped upper parts of the macro-coccoliths are the only significant marks of distinction. In the light microscope, the peculiarities in shape of these coccoliths, so distinctive to the exterior appearance of the coccolithophorid as a whole, are recognized readily. In the electron microscope, the much coarser and more irregular micro-structure of *U. tenuis* may serve as a distinction from *U. irregularis*.

Type level:

Recent.

Type locality:

Sample from the Gulf Stream (38°N, 70°W), collected on November 11, 1953.

Depository:

Not given.

Author:

Paasche E. in Paasche E. & Markali J., 1955, p. 97; pls. 3, 4.

Reference:

On Two Species of Umbellosphaera, a New Marine Coccolithophorid Genus. Nytt Magasin for Botanikk, vol. 4, pp. 95-100, 6 pls.