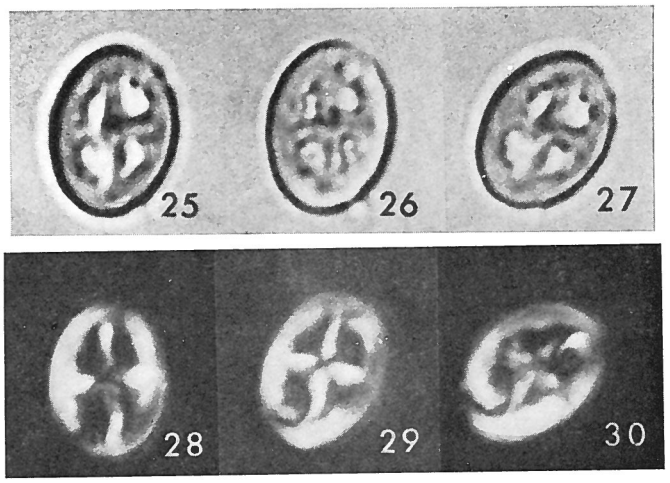
Vagalapilla gausorhethium HILL, 1976



Figs. 25-30 — *Vagalapilla gausorhethium* n. sp., Holotype, UCLA 38289, Loc. No. 6264-b, HTL6302c, Duck Creek Formation 25 lf; 26 hf; 27 rotated 30°; 28 xn, 29 xn, rotated 15°, 30 xn, rotated 30°.

Description:

The following description is based exclusively on observations with the light microscope since this species was not studied herein with the electron microscope.
This species has an elliptical rim (eccentricity 1.2-1.3) which is smooth in outline. The open central area occupies 60 to 65 percent of the longest diameter of the coccolith and is spanned by an axially or nearly axially aligned central cross. A central spine may be present. Under bright field illumination, the rim appears to be constructed of a single cycle of elements. The arms of the central cross appear parallel-sided or very slightly tapered and are offset slightly in a counterclockwise direction about the central juncture. Under crossed nicols, with the principal axes of the ellipse aligned with the nicols, the rim is traversed by very diffuse extinction gyres, the outer portions of the arms are bright and the center of the cross is dark. With the principal axes of the ellipse rotated 30 degrees to the nicols, the rim is traversed by narrow spirally arranged extinction gyres, and the entire cross is bright except for an X-shaped extinction pattern at the juncture of the arms. The arms of the cross appear brighter than the rim and widen from the rim to the central juncture. With the principal axes rotated 60 degrees to the nicols, the rim is bright and is traversed by narrow spirally arranged extinction gyres, the central cross is darker than the rim and the arms appear slightly bent or twisted.
Similar to *V. elliptica* in appearance under brigth field illumination, the present species differs under crossed nicols and with the axes of the coccolith oriented with the nicols by lacking a bright inner rim cycle which is interrupted by the arms of the cross, and with the axes of the coccolith oriented 30 degrees to the nicols by

having a brighter rim, well defined spiral rather than straight diffuse extinction lines and slightly twisted rather than straight appearing arms of the central cross.

Size: Maximum diameter 7 μm.

Derivation of name: *Gausos* from the Greek meaning "crooked" or "bent" + *rhethos* from the Greek meaning "arm". The name refers to the slight bend in the arms of the central cross (observable under crossed nicols).

Type level:

Middle Albian - Lower Cenomanian.
Occurrence: This species is present in the Walnut Marl of the Fredericksburg Group and in the Duck Creek Formation, Grayson Marl and Del Rio Clay of the Washita Group.

Type locality:

Loc. No. 6264-b, HTL 6302c, Duck Ceek Formation, Texas.

Depository:

University of California, Los Angeles.
Holotype: UCLA 38289.

Author:

Hill M.E., p. 157; pl. 3, figs. 25-30.

Reference:

Lower Cretaceous Calcareuos Nannofossils from Texas and Oklahoma. Palaeontographica Abt. B, vol. 156, no. 4-6, pp. 103-179, 15 pls., 5 text-figs., 5 maps.