
1969 Watznaueria coronata (GARTNER) BUKRY, p. 32, PLIO, Figs. 11-12; Pl. 11, Figs. 1-2.
? 1971 Ellipsagelosphaera coronata (GARTNER) BLACK, p. 398, Pl. 30, Fig. 6.
Original diagnosis: "Elliptical placolith with small notch developed in each element of proximal shield" (GARTNER 1968, p. 17).

Emended diagnosis: A species of *Watznaueria* having a broadly elliptical rim of two unequal shields and a central area closed by a floor of closely attached narrow elongated elements, which are the central extensions of the elements of proximal shield.

Description: *W. coronata* has two unequal, broadly elliptical shields with a subcircular to elliptical central area of width about one-third of the width of the coccolith. The distal shield is composed of two cycles. The outer cycle is wide and consists of 26 to 32 wedge-shaped crystals, separated by straight or slightly curved sutures. The elements of this cycle are imbricated counter-clockwise and slopes gently from the inner to peripheral side of the coccolith, when observed in distal view. The inner cycle of the distal shield is narrow and is composed of radially oriented tabular crystals. This inner cycle is often dissolved, in which case the distal shield shows only one cycle (Pl. 3, Fig. 6). The central floor is relatively flat, and is composed of the inward extensions of proximal elements, which join along a median line parallel to the long axis of the coccolith.

Remarks: The rim of *W. coronata* is birefringent and shows nearly straight extinction bands, which are at an angle about 15" to the plane of vibration of the polarizer or analyzer. The central area is either non-birefringent or only slightly birefringent. The specimens of *W. coronata* photographed in the light microscope (Pl. 2, Figs. 15-16; Pl. 3, Figs. 1-2) are etched and overgrown, thus making it difficult to relate with SEM photomicrograph of a well preserved specimen (Pl. 2, Fig. 17). We consider *E. forbesii* as a subjective junior synonym of *W. coronata*, because both have a similar central structure. BLACK (1971) used the presence of an elliptical perforation at the center as one of the distinguishing criterion of *W. coronata*. The type specimen of *W. coronata* GARTNER (1968, Pl. 23, Fig. 27) has a narrow nearly parallel-sided central opening at an angle to the long axis of the coccolith, which appears to be the result of dissolution and not a characteristic of this species, as shown by the paratype (GARTNER 1968, Pl. 23, Fig. 28), which lacks such an opening.

Differential diagnosis: *W. coronata* differs from *Lotharingus sigillatus* (Pl. 3, Fig. 7) and *Lotharingus barozii* by the lack of a central cross, and from *Lotharingus velatus* BOWN &
COOPER (1989) by the presence of elongated, instead of granular, crystallites in the central floor.

*W. coronata* differs from *W. barnesae* by having a larger and wider central area. Between crossed nicols, the inner cycle of the distal shield of *W. coronata* has similar birefringence and is difficult to distinguish from the outer cycle. In contrast, the inner cycle of the distal shield of *W. barnesae* and *Watznaueria variabilis* RAHMAN & ROTH (in press) is separable from the outer cycle by its distinctive birefringence and extinction patterns (Pl. 3, Figs. 3-4). *W. coronata* differs from *Watznaueria ovata* BUKRY (1969) (Pl. 3, Fig. 5) by having a central floor, and from *Watznaueria manivitae* BUKRY (1973) by having a smaller size and the lack of a strongly birefringent and central area (Pl. 3, Figs. 8-9).

**Geologic range:** Previous workers reported *W. coronata* in the Cretaceous from Berriasian to Cenomanian (BUKRY 1969; GARTNER 1968; BARRIER 1977). This species occurs sporadically in samples from 534A-104-1, 52-53 cm to 534A-99-1, 10-11 cm, ranging from Kimmeridgian to early Tithonian.