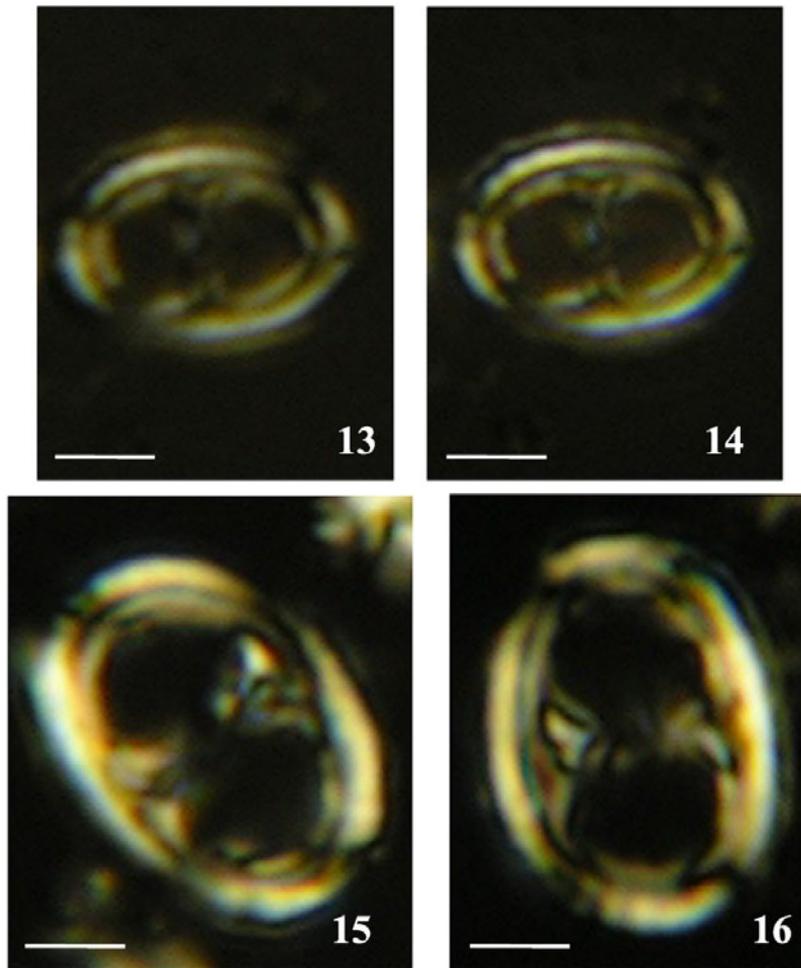
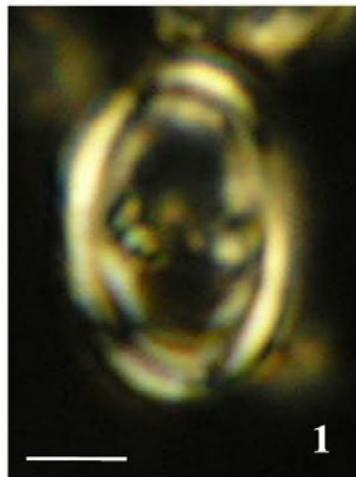


2. *Amphizygus megalops* Blair & Watkins (2009)



Pl. 1, figs 13–16



Pl. 2, fig. 1

Amphizygus brooksii Burnett, 1998, Plate 6.2, Fig. 1

Description: This elliptical coccolith is characterized by a bicyclic rim, a transverse bar, and two symmetrical circular openings that occupy the central area. The proximal rim cycle is very narrow (<1 μm) and shows pronounced birefringence in cross-polarized light. The distal cycle is thin and relatively inconspicuous in the light microscope. Two large circular openings occupy the central area and are separated by a transverse bar. The circular openings are lined with a ring of elements that is largely inconspicuous in light microscope. The transverse bar is slender and is composed of four elements that meet at a central knob or short spine.

Holotype: Plate 1, Fig. 13–14

Holotype size: 6.64 μm in length, 4.0 μm in width, circular opening width: 1.20 μm

Holotype material: Chalk from Locality 13 of the Smoky Hill Member type area (northwestern Kansas)

Etymology: *megalo*-Greek for larger; *ops*-Greek for eye

Occurrence: This species of *Amphizygus* first appears 4.0 m below the FAD of *I. undulatoplicatus* and comprises as much as 1.5% of the assemblage at Locality 13. It is first seen 2.15 m below the FAD of *I. undulatoplicatus* at the Ten Mile Creek and can make up as much as 0.4% of the assemblage.

Remarks: The central knob is highly susceptible to dissolution as even well-preserved Smoky Hill specimens commonly lack the knob. It averages in size 7.12 μm in length and 4.96 μm in width (Table 2).

Amphizygus megalops has been previously placed in synonymy with *Amphizygus brooksii* (see Plate 6.2, Fig. 1 in Burnett, 1998). *Amphizygus brooksii* (Plate 2, Figs. 2–3) is defined by having a bicyclic rim, two circular openings, and a ring of elements that surrounds these openings. The bicyclic rim appears dull in cross-polarized light and is relatively thick. The transverse bar is composed of four bundles of rods that meet at a central spine. *Amphizygus megalops* (Plate 1, Figs. 13–16; Plate 2, Fig. 1) also has a bicyclic rim; however, the two cycles of elements are very thin. In cross-polarized light, the distal cycle of elements remains dull while the proximal rim exhibits pronounced birefringence. The central area has a transverse bar and spine, however, does not appear to be made up of rod bundles. *Amphizygus brooksii* has an Albian through Maastrichtian range (Burnett, 1998). Biostratigraphically, separation of *Amphizygus megalops* from *Amphizygus brooksii* is important as its first appearance is seen near the Coniacian/Santonian boundary.

Amphizygus megalops can be differentiated from other *Amphizygus* species (such as *A. brooksii nanus* and *A. minimus*) by the size of the circular openings. Circular openings measure between 1.0 to 2.4 μm in size and average 42% of the total coccolith length. Circular openings in *A. brooksii nanus* compose 9 to 19% of the total central area width.

In *A. minimus* they compose 8 to 17% of the total central area width (Bukry, 1969), Table 2.

Blair, S.A. & Watkins, D.K., 2009. High-resolution calcareous nannofossil biostratigraphy for the Coniacian/Santonian Stage boundary, Western Interior Basin. *Cretaceous Research*, **30(2)**: 367-384.