
Comparison of Two Mollusc-Dominated Faunas from Cavity Layers in the Lower Cretaceous Edwards Formation of Central Texas

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ABSTRACT

Two sites containing spectacularly preserved faunas were discovered in thin, red, clay-filled, karst layers from the Lower Cretaceous Edwards Formation during access road construction along Interstate Highway 35 (I-35) in Georgetown, Texas. Site 1 was exposed during initial construction in 2006. Site 2, located 230 m (755 ft) south of site 1 and approximately 5 m (16 ft) upsection, was exposed during a driveway addition in 2008.

Site 1 yielded over 900 kg (1,984 lb) of bulk material including ~69,000 macro specimens, 16,000+ of which were well preserved. Site 2 yielded 128 kg (282 lb) of bulk with 7,400+ well preserved specimens. At both sites, specimens show external growth lines and delicate ornamentation exquisitely preserved in single-crystal calcite, with surrounding matrix recrystallized into massive calcite.

Both sites were mollusc-dominated and produced diverse faunas, with 33% of the fauna common to both sites, 32% unique to site 1, and 35% unique to site 2. Each site contains taxa yet to be described and/or new to the Edwards Formation. Site 2 has higher species diversity than site 1, with taxa generally smaller in size. Shared specimens rare at one site can be common at the other. Site 2 has a different foraminifera, algae, and dominant rudist, and more corals, echinoids, and many more worm tubes. Although both sites are located close together and share many similarities, they appear to represent two distinctly different communities. This assumption must be viewed in the context of a karst environment and possible transport of specimens. Visual comparison with wall-rock fauna combined with the preservation of the cavity-fill specimens suggest, but do not prove, limited karst related transport.