

THE MACROFAUNA OF THE TEHUACANA LIMESTONE MEMBER (DANIAN, KINCAID FORMATION) OF CENTRAL TEXAS, WITH THE DESCRIPTION OF A FEW NEW TAXA FROM THE PISGAH MEMBER

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ABSTRACT

Field work in Texas has led to the discovery of the most diverse marine fossil site yet known in the U.S. Paleogene. This fauna is within the Tehuacana Limestone, a member of the Kincaid Formation, and is of Danian age. The fauna lived on and within a hard-substrate environment, allowing much more diversity than in soft-bottom environments. The fauna differs from that of all other known Paleocene sites, in which just a handful of species occur in both the soft and hard substrate environments. Also surprising is the existence of several taxa, previously known to date only from the Cretaceous, surviving past the K-Pg boundary event. The non-molluscan faunal content is treated here, but not to the same level as the Mollusca. The following new family is proposed: Nodolargenidae. The following new genera and subgenera are proposed: *Nodolargena*, *Sassella*, *Straticostatum* (*Paginacosta*), *Crassaseila*, *Pseudolatirus*, *Gentilifulgur*, *Pagonia*, *Proceraedis*, *Tritiaria* (*Eotritiaria*), *Paleofusus*, *Lupira* (*Serrlabra*), *Lyria* (*Paleolyria*), *Nodovoluta*, *Cenorhytis*, *Bieleraxis*, and *Multitrochia*. The following new species and subspecies are proposed: *Acar beadata*, *Arcopsis subrhombus*, *Arcopsis tumulus*, *Grammatodon superstes*, *Porterius? strangensis*, *Glycymeris laevigata*, *Gregariella frosti*, cf. *Neopycnodonte lapidicina*, *Lucina* (*Lucina*) *multivittae*, *Lucina* (*Callucina*) *tehuacanensis*, *Lucina* (*Cavilinga*) *crassiplica*, *Eomiltha strangensis*, *Crassatellina paleocaenica*, *Crassatellina paleocaenica regularis*, *Pteromeris nodulina*, *Baluchicardia? eoplata*, *Tellina* (*Moerella*) *brevis*, *Tivelina texana*, *Tivelina trigonalis*, *Diplodonta* (*Diplodonta*) *frosti*, *Diplodonta* (*Microstagon*) *paleocaenica*, *Caryocorbula? praefigera*, *Parmicorbula? sublaevis*, *Corbulamella palaeocenica*, *Pandora? paleocenica*, *Cuspidaria* (*Tergulina*) *texana*, *Cadulus* (*Gadila*) *praepalmerae*, *Solariella microstriata*, *Clava* (*Semivertagus*) *scriba*, *Bittium prekoeneni*, *Kapalmerella gelus*, *Kapalmerella hilli laevis*, “*Turritella*” *calax*, *Vermicularia? columella*, *Tripsyche* (*Tripsyche*) *strapplei*, *Capulus gelus*, *Priscosficus johnfoxi*, *Priscosficus nodulina*, *Littorina elongata*, *Littorina* (*Prosthenodon*) *incertus*, *Sansonia texana*, *Nodolargena frosti*, *Natica* (*Carinacca*) *kincaidensis*, *Polinices* (*Polinices*) *tehuacana*, *Attenuata? danica*, *Zebinella tehuacana*, *Chevallieria texanopsis*, *Caecum* (*Meioceras?*) *texanum*, *Vitrinella praelaevis*, *Vitrinella discus*, *Solariorbis planulatis*, *Teinostoma regularis*, *Calyptrophorus velusus*, *Cymatium* (*Cymatium?*) *danianum*, *Sassella mixta*, *Sassella frosti*, *Straticostatum* (*Paginacosta*) *figus*, *Cerithiscala tehuacana*, *Cerithiscala parvibrasosa*, *Acirsa* (*Notacirsa*) *texana*, *Amaea* (*Confusiscala*) *paleocaenica*, *Opalia* (*Opalia*) *tehuacana*, *Papuliscala? acus*, *Crassaseila ripleyana*, *Crassaseila paleocenica*, *Cerithiella acuta*, *Taioma calxa*, *Taioma? argilla*, *Parvisipho? spiralis*, *Euthriofusus stephensoni tehuacanis*, *Laevibuccinum constrictum danianum*, *Mitrella* (*Canaliensis*) *fortis*, *Tritiaria* (*Eotritiaria*) *formosa*, *Tritiaria* (*Eotritiaria*) *formosa laevis*, *Latirus? asperpellis*, *Pseudolatirus acuelatus*, *Pagonia spiralis*, *Conradconfusus texanus*, *Falsifusus problematicus*, *Aquilofusus? antiqua*, *Tumidosipho tehuacana*, *Tumidosipho tehuacana protocarinata*, *Gentilifulgur praemortoni*, *Proceraedis imbricata*, *Proceraedis tegumenis*, *Paleofusus bellus*, *Paleofusus bellus diminutus*, *Paleofusus parvicrassus*, *Paleofusus elegantissima*, *Eocithara* (?) *laurencei*, *Poiriera* (*Paziella*) *delera*, *Hexaplex nascium*, *Lupira* (*Serrlabra*) *danianum*, *Lyria* (*Lyria?*) *elongata*, *Lyria* (*Paleolyria*) *tehuacana*, *Volutocorbis texanus laevis*, *Nodovoluta coronata*, *Cryptochorda paleocaenica*, *Volutomorpha ultima*, *Fulgurofusus spinosus*, *Cenorhytis groesbecki*, *Eoancilla lapidicina*, *Olivella tehuacanensis*, *Popnoeum tabulatum*, *Fusulculus texanus*, *Ptychatractus cataractus*, *Palaeorhaphis? laevis*, *Turricula frosti*, *Turricula imbricata*, *Crenaturricula minuta*, *Lutema gracilis*, *Cochlespira* (*Tahusyrinx*) *laevis*, *Coronia argilla*, *Coronia argilla lata*, *Coronia argilla tenuia*, *Oxyacrum gracilis*, *Campylacrum texanum*, *Campylacrum texanum crassum*, *Eoturris fallsensis*, *Terebra* (*Mirula*) *mexia*, *Unitas petiti*, *Unitas euani*, *Sveltella novus*, *Acteon pseudotypica*, *Acteon pseudotypica fossa*, *Eoacteon punctatus*, *Eoacteon punctatus taenia*, *Tornatellaea globosa*, *Tornatellaea linifera*, *Bieleraxis discoidea*, *Bieleraxis altis*, *Discotectonica paracutissima*, *Multitrochia tehuacana*, *Multitrochia tehuacana crassae*, *Multitrochia tehuacana laevis*, *Toulminella alabamensis curta*, *Acrocoelum? cancellata palaeocenica*, *Mathilda* (*Echinimathilda*) *duogenta*, *Doliella parnitens*, *Creonella hebetertia*, *Puposyrnola shirleyae*, *Puposyrnola multibaca*, *Puposyrnola obliqua*, *Puposyrnola? confusa*, *Cylichna* (*Cylichnopsis*) *elliptica*, *Retusa* (*Cylichnina*) *praemoryi*, aff. *Onithochiton macronodulina*, and *Holospira? fallsensis*. The species *Holospira? fallsensis* is the first land snail recorded from marine sediments in the Paleogene of the Gulf and Atlantic Coastal Plains. In addition, the Fasciolariidae and Melongenidae of the U.S. Paleocene and Eocene are revised and a new division of genera is proposed.