

Oldest North American primate

Primates appear at or immediately after the beginning of the Eocene, in the global carbon isotope excursion (CIE) marking the Paleocene–Eocene Thermal Maximum. We presented evidence for dispersal of *Teilhardina* from Asia to Europe to North America in the first 25 kyr of the CIE (first 25 kyr of the Eocene; ref. 1). Beard claims to refute the direction of dispersal by reporting a new, possibly older species, *Teilhardina magnoliana*, from the Tuscahoma Formation, Mississippi, southern North America (2).

Claim of an older age is based on three species of dinoflagellate *Apectodinium* found with *T. magnoliana*. These *Apectodinium* overlap through an 800-kyr interval, spanning the upper half of planktonic foraminiferal zone P5 and all of P6A, starting at or immediately after the beginning of the Eocene (3). The mere presence of *Apectodinium* does not indicate an acme of relative abundance. Attempts to locate the CIE in the Tuscahoma Formation failed (4). Beard indicates that *T. magnoliana* was deposited in an estuarine environment, below a major eustatic sea-level fall, but the CIE represents sea-level rise; lowstands are not known within it (5). Thus, *T. magnoliana* cannot be dated more precisely than the 800-kyr P5–P6A window. Primates are already known in North America from the last 775 kyr of this interval (1).

What is the probability that Beard's find came, by chance, from the first 25 kyr of the 800-kyr window, predating North American primates known previously? This is improbable: 25/800, 1 chance in 32, or $P = 0.031$.

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