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New Caribbean Locality for the Extinct Great White Shark *Carcharodon*

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of low relief (< 8 m) and the highlands, a karst plateau rising to roughly 40 m above sea level. The highlands, specifically the Highlands Formation (Brasier and Donahue, 1985), are composed of horizontally bedded reef limestones of Pliocene age (Watters et al., 1992).

Darby Sink (also known as Darby Cave and Darby's Cave; 17°38'N, 61°50'W; UTM 299 527) is the largest and best known of a series of distinctive, sheer-walled, karst collapse features that open from the highlands plateau. Darby Sink is approximately 25 m deep, undercut along its northern margin, and large enough (~ 5400 m²) to support a mesophyllic forest.

Carcharodon is represented by a single upper tooth (Fig. 1) which we extracted from the eroding Pliocene limestone wall, some six meters above the floor at the northern end of Darby Sink. Much of the tooth is missing, but the remaining portion includes features diagnostic of this genus. The tooth conforms in size and morphology to *Carcharodon megalodon* (Agassiz, 1843), an extinct great white shark.

Applegate and Espinosa-Arrubarrena (1996) suggested that the oldest *C. megalodon* specimens date to the middle Miocene, while the youngest dated specimen with stratigraphic control is from the late Pliocene—up to but not beyond the Tertiary/Quaternary boundary. Applegate and Espinosa-Arrubarrena rejected Pleistocene records for this species on the grounds that such specimens are, “reworked materials or teeth dredged from the ocean floor where [they] could easily be Pliocene.” The pre-Quaternary global range of the genus *Carcharodon* includes sites from Europe, North America, Australia, South America, East Indies, New Zealand, New Caledonia, and elsewhere in the West Indies (Carroll, 1988; personal obs.), although Applegate and Espinosa-Arrubarrena argued that the aberrant Eocene New Zealand record should be “disregarded until [it] can be validated.”

The Barbuda specimen has been deposited in the Museum of Antigua and Barbuda (MAB), St. John's, Antigua, under accession number MAB 997-008. Since we cannot determine from which side of the jaw this specimen came, we have refrained from designating “medial” and “lateral.” Using Hubbell's (1996) protocol as a guide, the measurements of MAB 997-008 are: maximum natural width = 73.75 mm; maximum height = 101.05 mm; left margin in labial view = 120 serrations; right margin in labial view = 84 serrations. No angle was discerned. Diagnostic features of the species include the great size, triangular shape, and the fine serrations along the margins of the tooth (J. Maisey, pers. comm.). Other species of the genus *Carcharodon* exhibit large size or serrations, but this combination is apparently unique to *C. megalodon*. Comparative specimens abound in the American Museum of Natural History's (AMNH) Department of Vertebrate Paleontology (e.g., AMNH-VP 13220).

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The current exposure of Barbuda, an island of the Limestone Arc, northern Lesser Antilles, West Indies, is but a fraction of a much larger submerged carbonate bank. Modern subaerial Barbuda is composed of two geological and physiographical units—the marginal plain, consisting of Pleistocene and Holocene deposits

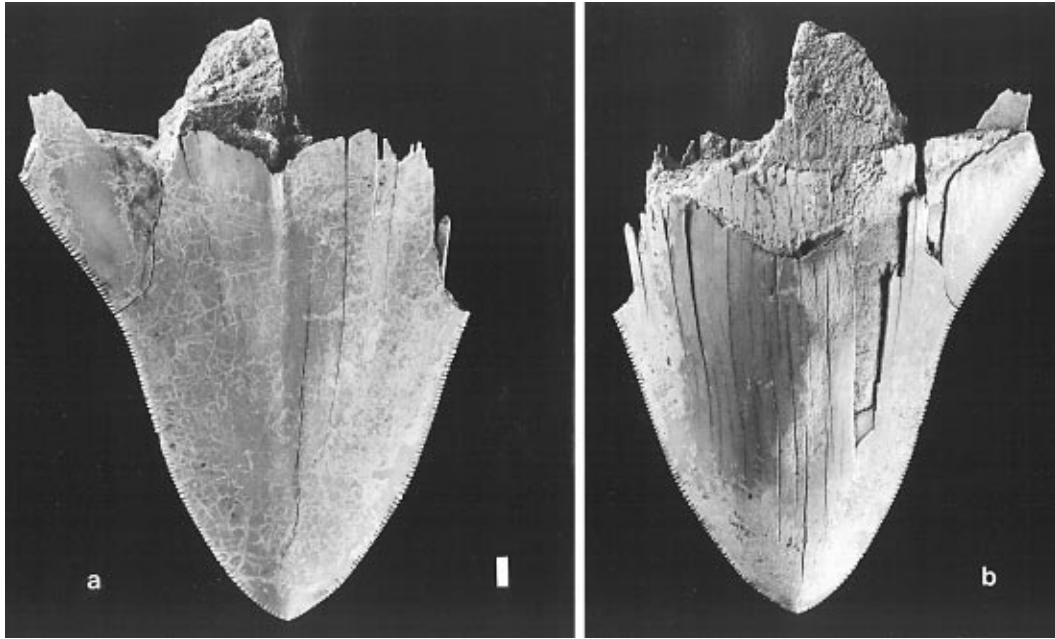


FIG. 1. Partial upper tooth of *Carcharodon megalodon* (MAB 997-008) recovered from Pliocene strata of Barbuda. a, labial view; b, lingual view. Scale bar = 5 mm.

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