

## Preliminary Comments on the Pleistocene Vertebrate Fauna from Clark Quarry, Brunswick, Georgia

*Alfred J. Mead, Robert A. Bahn, Robert M. Chandler, and  
Dennis Parmley*

Recent excavations at a new fossil locality, Clark Quarry, near Brunswick, Georgia, have produced abundant in situ Pleistocene vertebrate fossils. This material significantly adds to the understanding of Georgia's late-Pleistocene coastal plain faunas recently discussed by Hulbert and Pratt (1998). Clark Quarry is situated adjacent to the abandoned Brunswick Canal, a man-made waterway constructed between 1838 and 1839 (Hurst 1957). Geographically, Clark Quarry lies within 2 km of the late-Pleistocene Watkins Quarry described by Voorhies (1971). Historically, the Brunswick Canal is significant as the site of Lyell's 1846 collection of the type specimen for *Mammuthus columbi* (Falconer 1863; Lyell 1849).

The most recent geologic mapping of the region suggests that Clark Quarry lies within the Princess Anne Terrace of the Satilla Formation, a heterogeneous unit characterized by riverine, marsh, and barrier island deposits (Huddleston 1988). The fossiliferous horizon at Clark Quarry is approximately 1 m thick and composed of a well-sorted, sub-rounded to subangular, medium- to coarse-grained quartz sand lacking muddy sediment. Directly below this horizon is a marine sand layer containing fossil bivalves and gastropods.

The majority of large fossils belong to the Columbian mammoth (*Mam-*

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Alfred J. Mead, Robert A. Bahn, Robert M. Chandler, Dennis Parmley, Department of Biological & Environmental Sciences, Georgia College & State University, Milledgeville, GA 31061; e-mails: al.mead@gcsu.edu; bobbahn1@hotmail.com; bob.chandler@gcsu.edu; dennis.parmley@gcsu.edu

*muthus columbi*) and the giant bison (*Bison latifrons*). *Mammuthus columbi* material includes a juvenile partial jaw, adult tooth plates and tusk fragments, numerous cervical and thoracic vertebrae, sternal elements, ribs, long bones, podials, and metapodials. *Bison* material includes a skull with an intact left horn core and a partial right horn core. The estimated horn core spread (tip to tip) is 162 cm, and the left horn core length on the upper curve is approximately 77 cm; these dimensions indicate the species is *Bison latifrons* (Robertson 1974:Table 10.1). Additional *Bison* material includes numerous vertebrae and ribs, three scapulae, six humeri, two radio-ulnae, one femur, one tibia, and numerous podials. White-tailed deer (*Odocoileus virginianus*) and arvicoline rodents also are represented.

Birds are represented by partial major long bones and vertebrae of five orders, seven families, and two subfamilies (Pelecaniformes: Sulidae and Phalacrocoracidae; Anseriformes: Anatidae, Anatinae and Anserinae; Gruiformes: Rallidae; Charadriiformes: Laridae; and Passeriformes: Turdidae and Icteridae). Most of these birds are aquatic species found in coastal, riparian, or standing-water environments (lakes and ponds). The sulid, cf. Northern gannet (*Morus bassanus*), is a winter migrant to the coastal area of Georgia today. A large cormorant (cf. *Phalacrocorax auritus*) is an East Coast and Gulf Coast species, but also may be found inland. This is also true of the larid (cf. *Larus delawarensis*). The anseriform birds (cf. Canada goose, *Branta canadensis*, and a teal-sized duck cf. *Anas crecca*) also may represent migrants. The American coot (cf. *Fulica americana*) can be found year-round across Georgia. The two passerine birds, a thrush (cf. *Turdus ustulatus*) and a black-bird (cf. *Sturnella magna*), represent families that have resident and migrant species in Georgia.

Herpetofaunal material includes fragments of turtle shells and osteoderms. At least one species of large tortoise (cf. *Hesperotestudo crassiscutata*) and two species of emydid turtles are represented. *Alligator mississippiensis* is represented by osteoderms and teeth. The natricine snakes *Nerodia* sp. and *Thamnophis* sp. are represented by numerous vertebrae. Lacertilian vertebrae are present. Ranid frog vertebrae, ilia, and a maxilla also have been recovered as well as vertebrae of the aquatic salamander *Amphiuma*.

Radiocarbon ( $^{14}\text{C}$ ) dating on a partial radio-ulna of *Bison latifrons* produced a date of  $12,350 \pm 70$  RCYBP (UGA-14601). This date compares favorably with 10,000 RCYBP reported for nearby Watkins Quarry (Voorhies 1971). Prior to the discovery of *B. latifrons* at Clark Quarry, the last known occurrence of this taxon had been late Wisconsinan, between 21,000 and 30,000 years ago (Kurtén and Anderson 1980), bringing into question the timing of horn core reduction in the genus *Bison*. Since previous geologic mapping indicates that Clark Quarry lies within the Princess Anne Terrace of the Satilla Formation, the age of the Clark Quarry fossils indicates that the timing of the Princess Anne and Silver Bluff deposits (Markewich and Markewich 1994) may need to be reconsidered. An alternative possibility is that the coastal plain sediments represent a more complex association of asynchronous deposits, and the Clark Quarry sediments represent a more recent episode of fluvial cut and fill within the older sediments of the Princess Anne and Silver Bluff Terraces.

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