Sea turtles (Chelonioida Baur, 1893) have a long fossil record stretching back to the late Early Cretaceous (late Aptian/early Albian; Hirayama, 1998). At present, all taxa are assigned to one of two extant lineages within crown chelonioids (Hirayama, 1994, 1997, 1998; Joyce et al., 2004; Lehman & Tomlinson, 2004); one leading to living chelonioids (= “Pancheloniidae” sensu Joyce et al., 2004), and the other to the living Dermochelys coriacea (Vandelli, 1761) (= “Pandermocheley” sensu Joyce et al., 2004). The latter group includes the extinct Protostegidae Cope, 1872a, a diverse Cretaceous clade containing some spectacular Late Cretaceous giants, such as Archelon Wieland, 1896, with a maximum snout–tail length of up to 4 m (Wieland, 1896).

Protostegids are the only fossil sea turtle group known from Australia (Kear, 2003). Currently, three taxa are recognized: the small-bodied (<1 m carapace length) Notochelone costata (Owen, 1822); the slightly larger (approximately 50%) Bouliacheles suteri Kear and Lee, 2006; and the poorly known gigantic form Cratochelone berneyi Longman, 1915. Cratochelone berneyi was established on the basis of an incomplete shoulder girdle, forelimb, and anterior portion of the plastron from the Lower Cretaceous (upper Albian) Toolebuc Formation of Hughenden, northern Queensland. The fragmentary holotype (Queensland Museum F14550) suggests a sea turtle of up to four meters maximum snout–tail length (Longman, 1915). Gaffney (1981, 1991) reviewed the status of the taxon and provisionally retained it within the Protostegidae. Kear (2003) subsequently provided an emended diagnosis based on the characters of Longman (1915) and Long (1998). Although numerous reports have discussed features of C. berneyi (e.g., Zangerl, 1960; Molnar, 1991; Gaffney 1981, 1991; Long, 1998; Kear, 2003), none have yet provided a detailed reassessment of the holotype and no additional remains have been recovered. The purposes of this paper are to redescribe the holotype and only known specimen and to assess the phylogenetic position of the species.

**Systematic Paleontology**

**Testudines Batsch, 1788**

**Cheilonioidea Baur, 1893**

**Protostegidae Cope, 1872a**

**Cratochelone Longman, 1915**

**Type Species**—Cratochelone berneyi Longman, 1915.

**Diagnosis**—As for the type and only species.

**Cratochelone Berneyi** Longman, 1915

(Figs. 1, 2; Table 1)

**Holotype and Only Specimen**—QM F14550; fragmentary associated postcranial elements including: proximal sections of left humerus, radius, and ulna; articular portions of left scapula and coracoid; left lateral wing of entoplastron; and distal portion of a dactyloid processes, probably from the left hyoplastron.

**Localities, Horizon, and Age**—Sylvania Station, near Hughenden in central northern Queensland, Australia (see Longman, 1915). The only known specimen is thought to have been collected in the Eromanga Basin, from exposures of the Toolubuc Formation of the Rolling Downs Group (Longman, 1915). The Toolubuc Formation is dated as latest mid to late Albian, within the Pseudoecratium lubbdrookiae dinoflagellate Zone/upper Coptospora paradoxo-Phimomollenites pannosus spore-pollen Zone (Moore et al., 1986; McMinn and Burger, 1986).

**Revised Diagnosis**—Among protostegids, Cratochelone berneyi is diagnosed by the following unique combination of derived (∗ = apomorphy) and primitive character states: resembles Archelon and Protostega Cope, 1872b, in large body size (∗, i.e., estimated snout–tail length up to four meters); differs from basal protostegids, including Bouliacheles, Notochelone, Santanachelys Hirayama, 1998, and Terlinguachelys Lehman and Tomlinson, 2004, in having highly vascularized limb bone articular surfaces; resembles primitive protostegids such as Santanachelys in having elongate scapular neck; and resembles Terlinguachelys in having angle of divergence between scapular processes approximately 100°.

**Description**

The holotype of Cratochelone berneyi is extremely fragmentary, consisting of parts of the forelimb, shoulder girdle, and anterolateral part of the plastron from the left side (Fig. 1). Currently no other remains are confidently attributed to the taxon; this is despite sea turtles being among the most common tetrapod fossils in Lower Cretaceous (Albian) marine deposits of Australia (Molnar, 1991). The most conspicuous feature of the holotype specimen is its large size. Longman (1915:28) estimated a maximum snout–tail length of “over 12 feet” or around four meters. In contrast, later approximations arbitrarily recorded C. berneyi as being only around two meters long (Molnar, 1991; Long 1998; Kear, 2003); these smaller estimates are inconsistent with the limb bone and girdle fragment dimensions noted here (Table), which indicate that C. berneyi is comparable in size to large Late Cretaceous protostegids such as Archelon (see Wieland, 1896; Zangerl, 1953). Longman’s (1915) initial estimate thus appears realistic, suggesting that C. berneyi was indeed a giant Early Cretaceous sea turtle.

**Pectoral Girdle**—The pectoral girdle of QM F14550 comprises the articular or ganoid portions of the left scapula and coracoid. The scapula (Fig. 2A–D) includes the broken bases of the blade or dorsal process and acromion or ventral process (= “precoracoid” of Longman, 1915). These broken bases are elliptical in cross-section and diverge from one another at an angle of between 100° and 110°. The anterodorsal edge of the scapular blade forms a blunt ridge that extends along the dorsal surface of the glenoid neck. The neck itself is elongate and distinctly waisted, similar to those of chelonoids and stem sea turtle taxa (sensu Kear and Lee, 2006) such as Toxochelys Cope, 1873 (Lehman and Tomlinson, 2004). The ganoid articular surface is convex, becoming slightly concave towards its dorsal margin. The lobate ganoid facet is offset approximately 120° from the triangular coracoid facet.

The preserved proximal end of the coracoid (Fig. 2E, F) has a tear-drop-shaped ganoid articular surface, with the scapular facet offset approximately 150° from the ganoid facet. The shaft of the coracoid is constricted abruptly below the proximal ganoid head.

**Limb Elements**—Limb elements of QM F14550 are the proximal portions of the left humerus, radius, and ulna. The humeral head (Fig. 2G–I)