PROCEEDINGS
OF THE
CALIFORNIA ACADEMY OF SCIENCES

FOURTH SERIES

VOL. XXIII, No. 10, pp. 171-174, pl. 14 DECEMBER 30, 1937

No. 10

A NEW MARINE TURTLE FROM THE MIOCENE OF CALIFORNIA*

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In a collection of pelagic mammal remains, transmitted to Dr. Remington Kellogg for study and description by the California Academy of Sciences, was the right femur of a very large marine turtle. This specimen is of unique interest as being the first recognizable bone of an extinct cheloniid to be found on the west coast of North America.

Comparisons made of this bone with the femora of extant sea turtles show its closest resemblances to be with the green turtle (*Chelonia mydas*), and yet it differs sufficiently to indicate the possibility of its affinities falling outside of that genus when materials are available for adequate study.

A review of the extinct Cheloniidae shows that of the several genera and species assigned to this family all are based upon very fragmentary specimens, and in nearly every case doubt is expressed as to the validity of the family assignment. Furthermore, with none of these type specimens is there a femur preserved, which precludes the possibility of determining the relationships of the California specimen with extinct forms.

*Printed from the John W. Hendrie Publication Endowment. The manuscript of this paper was filed for publication on April 15, 1929. The delay in its appearance is due to no fault of the author.

The genus *Procolpochelys*, established by Hay[1] on Leidy's species *Chelonia grandaeva*, is from the Miocene of New Jersey, and Case[2] has assigned fragmentary specimens from the Miocene of Maryland to the genus *Chelonia*. These together with the large leatherback, *Psephophorus calvertensis* Palmer,[3] also from the Maryland Miocene constitutes all the recorded occurrences of marine turtles in the North American Miocene.

In view of the meagerness of our knowledge concerning the marine turtles of the Miocene, and the unique geographical occurrence of the California specimen, I propose the new species *californiensis* for its reception, and shall provisionally assign it to the genus *Chelonia* until the discovery of more adequate materials may permit the determination of its true affinities.

Chelonia (?) californiensis Gilmore, new species

Plate 14, figures 1, 6

Holotype: No. 4,379, Mus. Calif. Acad. Sci., Paleo. Type Coll., from **Sharktooth Hill,** Sec. 25, T. 28 S., R. 28 E., M.D.M., **Kern County, California;** collected by Charles Morrice, 1924; Temblor formation, middle Miocene.

The large size of the type femur at once distinguishes this species from all living members of the family. In size it rivals *Dermochelys coriacea* the largest of living turtles, some of which reach a length of nearly nine feet. A specimen in the California Academy of Sciences, measured by Joseph R. Slevin, is eight feet, eight inches long, the same across the spread of the flippers, and weighed 1286 pounds; it was taken off Santa Cruz, California, June 23, 1924.

The largest available femur of *Dermochelys* (pl. 14, figs. 2, 7) in the National Museum collections has a length of seven and three-quarter inches, whereas this fossil femur measures nine and one-quarter inches. The ends are robust and expanded; the distal end being especially stout. The head is strongly developed, but it lacks the globular symmetry of the living sea turtles. In a prone position on the posterior side the head is inclined inward from the perpendicular, whereas in *Dermochelys*, *Caretta*, *Colpochelys* and *Chelonia mydas* (pl. 14, figs. 2-5) it stands erect. The femur is but little bent, and the distal articular end looks more backward than downward when the bone is in its natural position. The greater trochanter is strongly developed and its upper extremity rises above the level of the head as it does in *Caretta* and *Chelonia*. (pl. 14, fig. 1). In *Dermochelys* and *Colpochelys* (pl. 14, figs. 2, 4), however, they are subequal in height. The intertrochanteric fossa is relatively deep. Viewed from the posterior side, (pl. 14, fig. 6) it will be observed that the highest point on the proximal end comes on the median axis of the bone, a feature that at once distinguishes the femur of *Chelonia* from those of *Caretta* and *Dermochelys* (pl. 14, figs. 7, 8) which have the highest extension of this end on the external side.

The shaft is constricted at the middle of its length which measures 55 mm. in transverse diameter. The total length measured parallel with the axis of the bone is 243 mm. Through the head and the trochanter the distance is 112 mm., through the distal end at the center 78 mm. The least diameter of the shaft is 42 mm., and the greatest transverse diameters of the two ends is: proximal 101 mm., distal 120 mm.

[1] Fossil Turtles of North America, 1908, p. 215.
[2] Miocene volume, Md. Geol. Survey, 1904, p. 64, pl. 26, fig. 5.
[3] Proc. U. S. Nat. Museum, vol. 36, 1909, pp. 369-373, pl. 31.

Plate 14

Figures 1–5. Comparative views of turtle femora as seen from above. Slightly more than one-fourth natural size.

Fig. 1. *Chelonia* (?) *californiensis* Gilmore, new species. Holotype No. 4,379, Mus. C.A.S., Paleo. Type Coll., from Sharktooth Hill, Sec. 25, T. 28S., R 28E., M.D.M., Kern County, California.

Fig. 2. *Dermochelys coriacea* (Linné); No. 29,492, U. S. Nat. Mus.

Fig. 3. *Caretta caretta* (Linné); No. 62,754, U. S. Nat. Mus.

Fig. 4. *Colpochelys* sp.; No. 29,015, U. S. Nat. Mus.

Fig. 5. *Chelonia mydas* (Linné); No. 29,342, U. S. Nat. Mus.

Figures 6–10. Comparative views of turtle femora as seen from below. Slightly more than one-fourth natural size.

Fig. 6. *Chelonia* (?) *californiensis* Gilmore, new species. Holotype No. 4,379, Mus. C.A.S., Paleo. Type Coll., from Sharktooth Hill, Sec. 25, T. 28S., R. 28E., M.D.M., Kern County, California.

Fig. 7. *Dermochelys coriacea* (Linné); No. 29,492, U. S. Nat. Mus.

Fig. 8. *Caretta caretta* (Linné); No. 62,754, U. S. Nat. Mus.

Fig. 9. *Colpochelys* sp.; No. 29,015, U. S. Nat. Mus.

Fig. 10. *Chelonia mydas* (Linné); No. 29,342, U. S. Nat. Mus.