

A NEARLY COMPLETE SHELL OF THE EXTINCT TURTLE, TRACHEMYS SCULPTA

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INTRODUCTION

A nearly complete articulated carapace and plastron of an Emyid turtle, discovered in 1928 by Dr. J. W. Gidley in Pleistocene deposits in the vicinity of Melbourne ("Golf Course locality"), Brevard County, Florida, appears to be referable to the little known *Trachemys sculpta* Hay. In being the most perfectly preserved specimen yet found of this species, it contributes much to a better understanding of the skeletal anatomy and is, therefore worthy of the detailed description that follows.

TRACHEMYS SCULPTA Hay

Plates 1, 2, and 3

The type specimen upon which the above species was established consists of a complete nuchal bone, from the Pleistocene of Hillsboro County, Florida.

In the original description¹ Hay provisionally associated with the type specimen certain other parts of the carapace, none of which is known to pertain to the same individual. Subsequently other scattered bones of the carapace were described² by the same authority. It is obvious, therefore, that it is the nuchal bone alone that must be relied upon to furnish the characters which distinguish *Trachemys sculpta* from the other species of the genus.

The identification of the present specimen (Cat. No. 11839, U. S. N. M.) as belonging to *T. sculpta* rests upon the similarity in size, proportions and other features of the nuchal bone with the type. The broad rounded carina within the area of the first vertebral; the long narrow nuchal scute that is raised into a strong ridge; deeply sunken sulci and similarity in the sculpture of their dorsal surfaces these two bones are in full accord.

I am aware of the fact that some herpetologists no longer regard *Trachemys* as a valid genus but include its species under the genus

¹ Hay, O. P., Fossil Turtles of North America, Carnegie Institution of Washington, 1908, p. 351, pl. 54, figs. 4-9.

² Eighth Ann. Rept. Geol. Surv. of Florida, 1916, pp. 68-70, pl. 7, figs. 8-10.

Pseudemys. For the present, however, I shall follow Hay, who recognizes no less than nine extinct species all referred to *Trachemys*. Five of these, *T. euglypha* (Leidy), *T. sculpta* Hay, *T. jarmani* Hay, *T. nuhocarinata* Hay, and *T. delicata* Hay were founded upon specimens from Florida. All except *T. delicata* a supposed Pliocene species are from the Pleistocene. *T. bisornata* originally described from the Pleistocene of Texas has also been recognized³ among Florida materials.

While there is reason to question the validity of some of these species, as most of them were founded on fragmentary specimens, more abundant and better preserved materials are necessary before a revision can be attempted.

Specimen (Cat. No. 11839, U. S. N. M.) here identified as *Trachemys sculpta* Hay is a nearly complete uncrushed shell, lacking the third and eleventh peripherals from the left side, and the eighth and tenth from the right side; neural seven and eight, and the pygal. The plastron lacks the epi-ento-and xiphiplastra.

The carapace is strongly arched in all directions. Viewed from above it is subovate in outline, broad in front, obtusely pointed behind. The median anterior border shallowly concave. In a straight line its greatest length is about 280 mm., the greatest transverse diameter at mid length being about 230 mm. In elevation this specimen is relatively greater than any of the living species of *Pseudemys* in the National collections; its maximum height being 137 mm. Along the center of the carapace, within the areas of the vertebral scutes the surface is somewhat swollen above the general contour of the shell, culminating within vertebrals three and four in obtusely rounded keels that are interrupted by the vertebral sulci separating these dorsal scutes. The margin of the carapace behind the inguinal notches is thin and comes to an acute edge that is shallowly scalloped. The anterior margins are obtusely rounded except at the center which is also acute. The sulci are everywhere deeply impressed.

The entire dorsal surface is beautifully and ornately sculptured with grooves, ridges and low pustular elevations. The areas within the vertebral scutes are smoothest, but here too some sculpture is present in the form of faint ridges and grooves that in general radiate from the central region of each scute. On the costal bones traversed by the intercostal sulci the sculpturing is much less pronounced than on the others. The costals are traversed by grooves and ridges that generally run parallel with the length of the animal. Many of the ridges are broken up at varying intervals, thus forming elevations of various sizes. The areas bordering the costo-peripheral suture is crossed at right angles by regular ridging, that forms a band extending

³ Eighth Ann. Rept. Geol. Surv. of Florida, 1916, p. 67.

almost entirely around the circumference of the carapace. The peripheral surfaces are ornamented with coarse ridges the trend of direction varying with their position on the shell. In the anterior ones these ridges have a diagonal trend away from the center of the carapace becoming parallel with the length of the shell on the third and continuing so to the sulcus on peripheral seven. In the succeeding peripherals the area in front of the sulcus the ridging is at right angles to the free border, while posterior to the sulcus the diagonal trend continues. The under surface of the plastron is without distinctive ornamentation, only a slight roughening of the hypo- and hypoplastral areas.

The nuchal has a length of 56 mm., a width in front of 24 mm. and a maximum width of 63 mm. These same measurements of the type, taken in the same order, are 55 mm., 29 mm., and 63 mm., respectively. The anterior edge is obtuse and slightly notched on either side of the nuchal scute.

The form and proportions of the neurals are clearly shown in Figure 1. Their dimensions are given in the table.

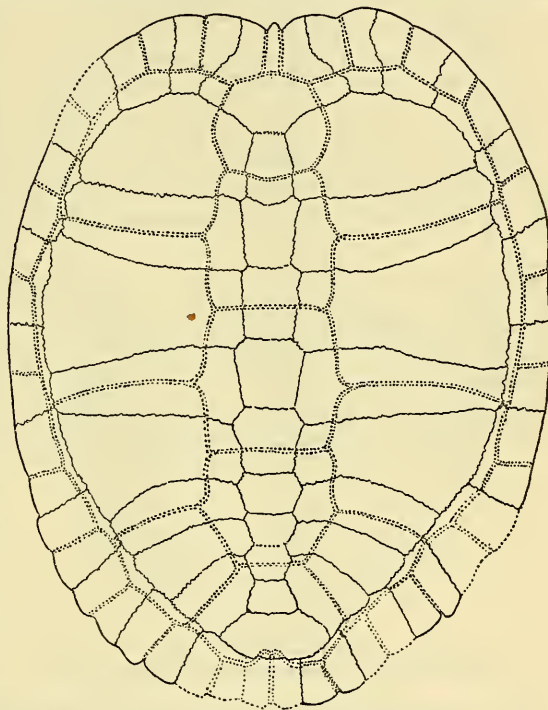


FIGURE 1.—CARAPACE OF TRACHEMYS SCULPTA HAY. CAT. No. 11839, U.S.N.M. NEARLY ONE-THIRD NATURAL SIZE

Element	Length	Width
	Millimeters	Millimeters
Neural 1	34.0	19.5
2	26.0	22.0
3	30.0	22.7
4	27.0	27.7
5	28.0	30.0
6	18.7	25.0
7	15.0	21.0
8	15.0	20.0
Suprapygal 1	16.7	20.0
2	24.0	45.0

One of the outstanding structural features of *T. sculpta* seems to be the great distal expansion of costals three and five and the consequent narrowing of costals two and four. *T. hilli* (Cope) shows the costals to be fairly uniform in width as they are in most extant species of *Pseudemys*. So little is known of the costals of the other extinct species of *Trachemys* that they do not permit of comparison being made with the present specimen.

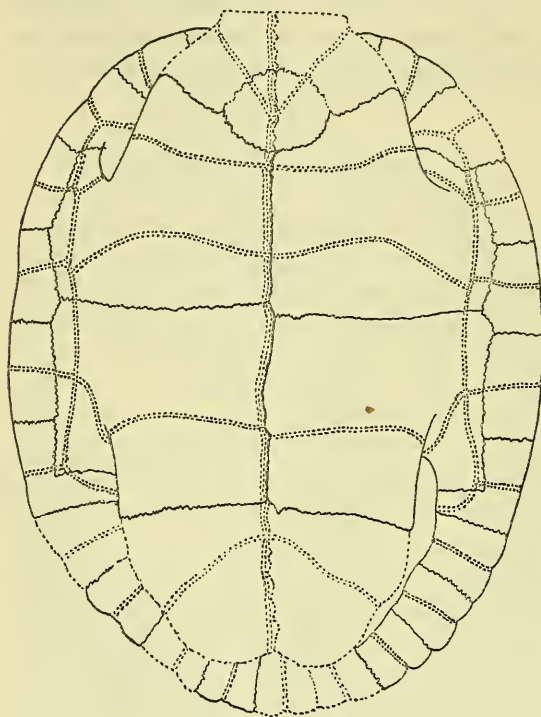


FIGURE 2.—PLASTRON OF TRACHEMYS SCULPTA HAY. CAT. NO. 11839, U.S.N.M. NEARLY ONE-THIRD NATURAL SIZE

Excepting peripheral one which presents an acute free border the others are obtuse and only slightly everted. Over the bridge an obtuse keel intervenes between the upper and lower portions of the shell. The free borders of the posterior peripherals are acutely edged and distinctly scalloped.

The sulci are everywhere deeply impressed. The form of the various scutes may be clearly determined from Figure 1. The table gives the dimensions of the vertebrals.

The nuchal scute is long and narrow and raised into a strong ridge, that projects slightly beyond the free edge. The sulci separating the costal from the marginal scutes traverses the peripherals some distance below the costo-peripheral sutures from the nuchal to the eleventh peripheral, where it rises and crosses the midline on the posterior border of the suprapygals, a condition occasionally found in the West Indian *Pseudemys rugosa* and *P. palustris*. In *T. hilli* (Cope) this sulcus crosses the midline below the suture on the pygal, and the sulci more nearly coincide with the costo-peripheral sutures, as they do in most specimens of *Pseudemys* that have come under my notice.

Scute	Length	Width
	<i>Millimeters</i>	<i>Millimeters</i>
Vertebral 1-----	53	48
2-----	55	55
3-----	58	59
4-----	53	58
5-----	49	65

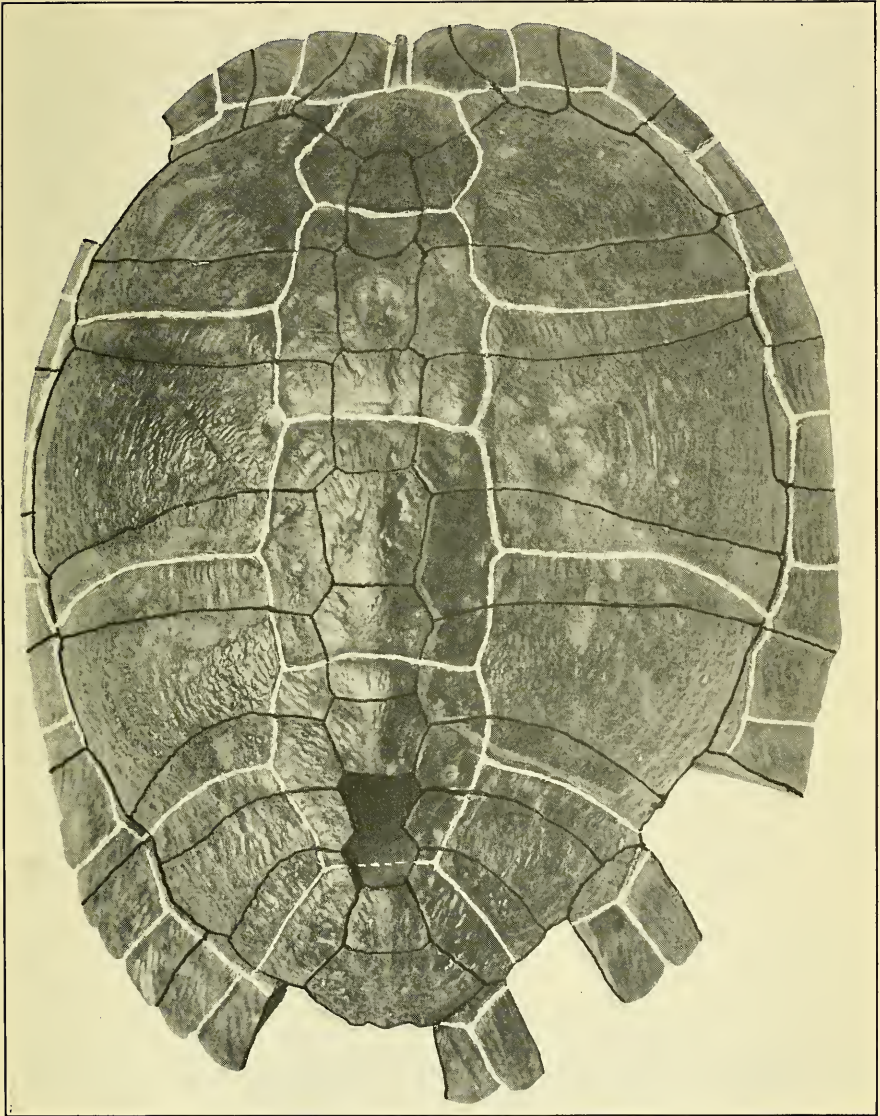
The plastron is shown in Figure 2 with the missing epi-ento- and xiphiplastral bones restored from related species. The plastron is flat, turning up slightly at the anterior end. Its surface is indistinctly sculptured. The anterior lobe has a width of 132 mm., width of posterior lobe 130 mm. The bridge is 118 mm. wide. The entoplastron has a greatest transverse diameter of 45 mm. The hypoplastra at the midline are 70 mm. long; the hypoplastra 81 mm. The pectoral scutes are 36 mm. long at the center; the abdominals 74 mm. The pectohumeral sulcus passes 4 mm. posterior to the entoplastron.

In the ornate sculpturing of the carapace, the alternate widening and narrowing of the costal plates, and the costo-marginal sulci running well below the peripheral sutures, except on the pygal, *Trachemys sculpta* has its closest resemblances in the West Indian *Pseudemys palustris*. In height of shell, however, the extinct form greatly exceeds any of the living species of *Pseudemys* except *P. ornata*.

EXPLANATION OF PLATES

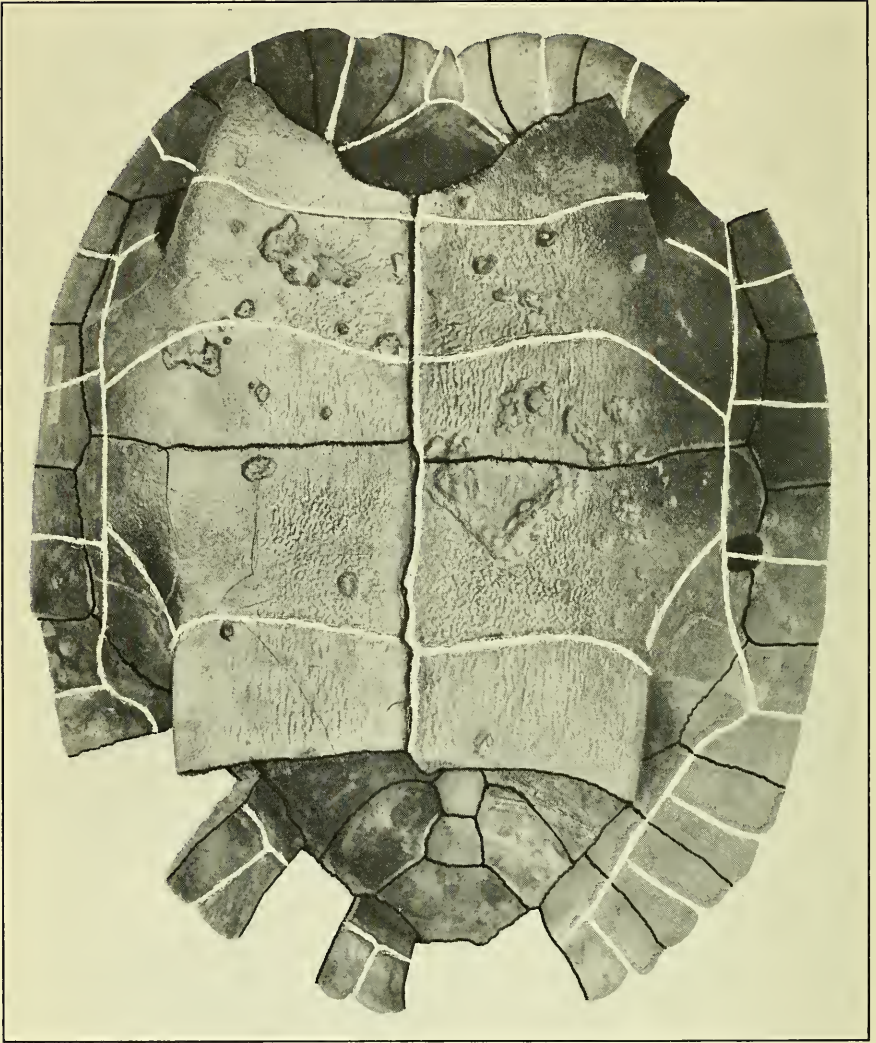
PLATE 1

Trachemys sculpta Hay, Cat. No. 11839, U.S.N.M. Carapace viewed from above. Specimen from "Golf course locality," Brevard County, Florida. About one-half natural size.



TRACHEMYS SCULPTA. CARAPACE FROM ABOVE

FOR EXPLANATION OF PLATE SEE PAGE 6.



TRACHEMYS SCULPTA. PLASTRON AND CARAPACE FROM LOWER SIDE

FOR EXPLANATION OF PLATE SEE PAGE 7.

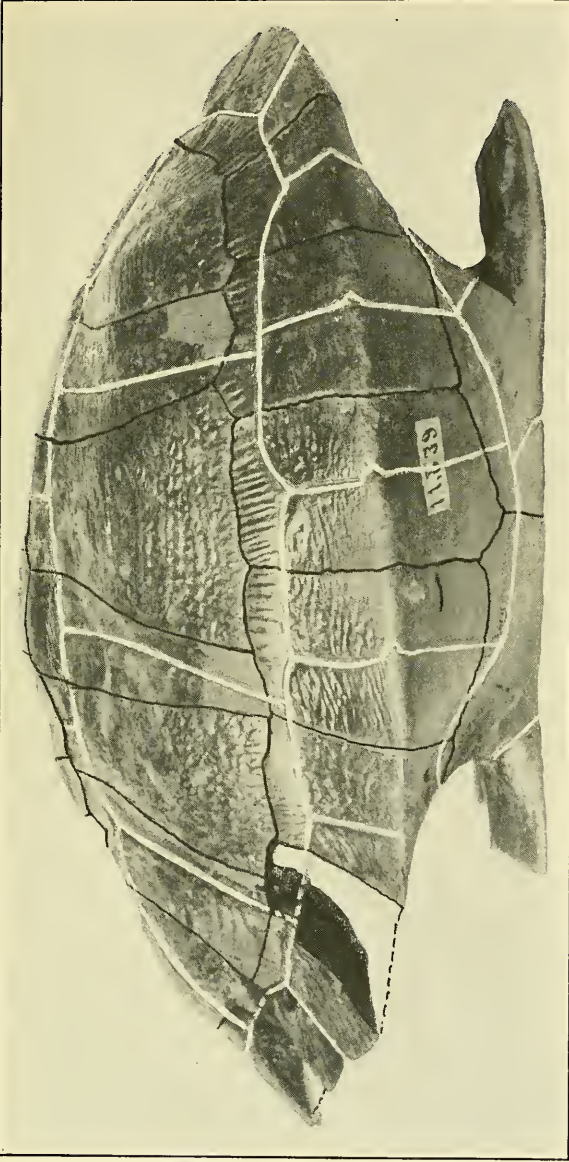
PLATE 2

Trachemys sculpta Hay, Cat. No. 11839, U.S.N.M. Plastron and carapace viewed from the lower side. Less than one-half natural size.

PLATE 3

Trachemys sculpta Hay, No. 11839, U.S.N.M. Viewed from the right side
Slightly more than one-half natural size.

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TRACHEMYS SCULPTA. FROM THE RIGHT SIDE

FOR EXPLANATION OF PLATE SEE PAGE 8.

