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Douglas A. James

University of Arkansas, Fayetteville

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THE MEASUREMENTS OF AN AGED BOX TURTLE

Douglas James
University of Arkansas

A female box turtle, *Terepene carolina triunguis* (Agassiz), bearing the inscription "HPF" on the left second lateral lamina of the carapace and "1923" on the right one was found at Fayetteville, Arkansas, on September 5, 1959. The authenticity of the inscription was confirmed by Hubert P. Finger (in litt.) who carved it on the carapace in the spring of 1923 when his family occupied the farm where the specimen was collected. Thus, when it was found there again recently, the turtle was at least 36 years old. The carapace laminae were smooth on recapture having lost all signs of annuli, the indications of yearly growth, and the base of the inscribed "3" contacted the seam between the second and third right lateral laminae of the carapace, suggesting there had been little or no growth subsequent to the time of marking (Ewing, *Copeia*, 1939, pp. 87-92). (This latter area was not distorted in outline as might occur due to cutting, showing that the lack of subsequent growth was not abnormal.) If the estimate made by Nichols (*Copeia*, 1939, pp. 14-20) that a box turtle reaches full growth at about 20 years of age applies to this species in Arkansas, the specimen probably was at least 20 years old when marked, or a total of some 56 years when found anew. Because the turtle could have attained its maximum growth some years prior to being marked, it might have been considerably older than 56 years.

Several box turtles have been reported that were marked and recovered over a span greater than 36 years, or even greater than the possible minimum age of 56 years (Deck, 1927, *Copeia*, no. 159, p. 160; Nichols, *Copeia*, 1939, pp. 14-20; Edney and Allen, *Copeia*, 1951, p. 312; Pope, 1946, *Turtles*, A. A. Knopf, N.Y., p. 118; Price, *Copeia*, 1951, p. 312), but few have been measured and none have been measured in detail. Because most of these aged specimens were released again the measurements are not obtainable. In the belief that such measurements might be useful to age-growth studies of this species the present specimen was measured in detail before being photographed and released. In view of the uncertainties pertaining to the appraisal of the turtle's real age these measurements might best be considered simply as pertaining to a box turtle which had reached a termination in its growth. The terminology used follows Carr (1952, *Handbook of Turtles*, Journal of the Arkansas Academy of Science, Vol. 15 [1961], Art. 6

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Cornell University Press, Ithaca, N.Y.), the measurements are expressed in millimeters and were made with dividers unless indicated otherwise.

The overall dimensions were obtained with dividers (first value) for the linear distance from point to point, and with a flexible rule (second value) for the surface measurement: carapace length (from the depth of the anterior indentation), 122, 152; maximum carapace width, 96, 179; plastron length, 128, 142 (all plastron lengths are maximum values and not the distances from the depths of the anterior and/or posterior notches); pre-hinge plastron length, 53, 58; post-hinge plastron length, 78, 82; maximum pre-hinge plastron width, 67, 69; maximum post-hinge plastron width, 78, 81; maximum height of shell, 74, 97.

In the following laminae of the carapace the first value is the maximum anterior-posterior dimension, the second is the maximum medial-lateral or dorsal-ventral dimension: precentral, 5, 4; first central, 27, 27; second central, 28, 34; third central, 27, 40; fourth central, 29, 36; fifth central, 24, 32; left side — first lateral, 38, 46; second lateral, 30, 53; third lateral, 29, 47; fourth lateral, 27, 35; right side — first lateral, 36, 46; second lateral, 29, 54; third lateral, 30, 49; fourth lateral, 26, 35.

The first value of the measurements of the marginal and postcentral laminae is the length at the marginal ridge of the carapace, the second value is the maximum width from the inner seam to the marginal ridge: left side — first marginal, 17, 10 (partially destroyed); second, 14, 11 (medial and lateral seams obscure); third, 12, 10; fourth, 14, 10; fifth, 15, 13; sixth, 16, 13; seventh, 19, 16 (posterior seam obscure); eighth, 20, 12 (posterior and anterior seams obscure); ninth, 15, 14 (anterior seam obscure); tenth, 15, 14; eleventh, 15, 14 (margin eroded); postcentral, 13, 10; right side — first marginal, 13, 11 (partially destroyed); second, 11, 5 (margin eroded); third, 14, 10 (margin eroded anteriorly); fourth, 15, 10; fifth, 16, 13; sixth, 16, 13; seventh, 20, 15; eighth, 22, 11 (posterior seam obscure); ninth, 15, 15 (both seams obscure); tenth, 15, 14 (both seams obscure); eleventh, 13, 12 (both seams obscure and margin eroded); postcentral, 12, 9 (lateral and dorsal seams obscure). It is evident from the eroded indentations and obscured seams in the anterior and posterior regions of the marginal laminae that some past injury had been inflicted in these areas. Further indications of this were produced by scattered slight blemishes on the upper parts of the carapace.
The first value for each lamina of the plastron is the maximum anterior-posterior dimension, the second value is the maximum medial-lateral dimension: left side -- gular, 28, 15; humeral, 32, 33; pectoral, 22, 34; abdominal, 28, 38; femoral, 42, 40; anal, 40, 32; right side -- gular, 29, 16; humeral, 32, 34; pectoral, 22, 34; abdominal, 27, 38; femoral, 42, 40; anal, 42, 29.

The length of the seams between laminae were determined with dividers by measuring the straight-line distance between the two ends of the seam concerned: carapace seam between the first central and adjacent marginal laminae, 25; between the first and second central, 22; second and third central, 29; third-fourth central, 29; fourth-fifth central, 15; fifth central-postcentrals, 32; left side -- seam common to the first central and adjacent lateral lamina, 23; between the second central and two adjacent lateral laminae, 29; third central-lateral, 26; fourth central-lateral, 28; fifth central-lateral, 18; right side -- first central-lateral, 24; second central-lateral, 27; third central-lateral, 27; fourth central-lateral, 29; fifth central-lateral, 17. Left side -- junction of the first and second lateral laminae, 46; second-third lateral, 46; third-fourth lateral, 41; right side -- first-second lateral, 46; second-third lateral, 48; third-fourth lateral, 41.

The plastron seam between the bilateral gular laminae, 28; between the two humeral laminae, 8; the two pectorals, 17; abdominals, 27; femorals, 10; anals, 40. On the left side -- the gular-humeral seam, 28; humeral-pectoral, 34; pectoral-abdominal, 31; abdominal-femoral, 38; femoral-anal, 37; right side -- gular-humeral, 29; humeral-pectoral, 34; pectoral-abdominal, 32; abdominal-femoral, 37; femoral-anal, 38.

The distance from the tip of the tail to the anal aperture was 11 mm.

The eye color matched Plate 7, L-10 in the color dictionary of Maerz and Rand (1930, A Dictionary of Color, McGraw-Hill, N.Y.). This color is described as Kettledrum or Manzanita or Moro Red +.

The soft parts of the turtle appeared to be too bulky for the shell which prevented the simultaneous closing of both the anterior and posterior lobes of the plastron. The turtle first was weighed three days after capture and totaled 419 grams. Three days later it weighed 408 grams, and in still another three days 400 grams. Considering this rate of decrease, it could have weighed about 429 grams at capture.