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(Pseudemys scripta) from Coahuila, México, by John M. Legler**

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*** START OF THE PROJECT GUTENBERG EBOOK A NEW SUBSPECIES OF SLIDER TURTLE
(PSEUDEMYNS SCRIPTA) FROM COAHUILA, MÉXICO ***

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August 16, 1960

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BY
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**A New Subspecies of Slider Turtle
(Pseudemys scripta) from Coahuila, México**

BY

In September, 1958, the author and two colleagues collected a large series of *Pseudemys* in small ponds and in a river in the basin of Cuatro Ciénegas, Coahuila. The specimens prove to represent a previously unrecognized subspecies of *Pseudemys scripta*. The subspecies is named in honor of Edward Harrison Taylor who has contributed more than any other person to our present knowledge of the herpetofauna of México.

***Pseudemys scripta taylori* new subspecies**
(Pls. 9-12, Figures 1 & 2)

Holotype.—Univ. Kansas Mus. Nat. Hist., No. 46952, adult female, alcoholic; 16 km. S Cuatro Ciénegas, Coahuila, México; 6 September 1958; original number 1694 John M. Legler.

Paratypes.—A total of 52 specimens as follows (numbers or series of numbers marked with an asterisk are for specimens prepared as dry shell with soft parts in alcohol): KU 46932-4*, 46949-51, 46953-67, 46969 (females), 46935*, 46936-48, 46968 (males), same data as holotype, 6 to 8 September 1958; UU 3416 (male), same locality, 29 to 30 July 1959; KU 46971, 46973* (females), 46972 (male), 46970, 46974 (juveniles), 6 mi. W Cuatro Ciénegas, 3 to 6 September 1958; IU 43585, 43587-9 (females), 43586, 43590 (males), same locality, 11 July 1958; CNHM 55655 (female), same locality, 22 August 1939; KU 46976 (female), Río Chiquito, 10 km. S Cuatro Ciénegas, 9 September 1958; UU 3415 (female), 8.5 mi. SW Cuatro Ciénegas, 1 August 1959.

Diagnosis.—A subspecies of *Pseudemys scripta* most closely resembling *P. s. elegans*, but differing from that subspecies in having: 1) extensive black plastral pattern, all parts of which are interconnected, covering approximately half of plastron; 2) tendency toward melanism, in large adults of both sexes, especially noticeable on posterior part of plastron; 3) cutting edge of lower jaw coarsely serrate; 4) tendency for femoral edges of plastron to be reflected ventrally, especially in males; and, 5) pectoral scute longer than gular.

TABLE 1. MEASUREMENTS (IN MILLIMETERS) OF THE HOLOTYPE (46952) AND NINE ADULT, TOPOTYPIC PARATYPES OF PSEUDEMYSS SCRIPTA TAYLORI NEW SUBSPECIES. HEIGHT WAS MEASURED IN A VERTICAL LINE FROM THE CENTER OF THE PLAGSTRON.

Collection and Catalogue No.	Sex	Length of Carapace	Width of Carapace	Length of Plastron	Width of Plastral Forelobe (Humeropectoral)	Width of Plastral Hind Lobe (Mid-femoral)	Height	Width of Head
KU 46948	♂	179	127	157	71	69	69	28
KU 46941	♂	148	107	129	59	59	57	25
KU 46968	♂	139	99	116	55	54	57	25
KU 46937	♂	128	100	115	54	52	47	21
KU 46944	♂	105	82	93	46	43	38	19
KU 46932	♀	214	158	196	86	84	87	37
KU 46952	♀	202	149	186	87	86	79	33
KU 46957	♀	188	138	167	79	80	68	31
KU 46959	♀	156	118	149	71	71	70	29
KU 46962	♀	132	101	119	58	53	51	24

Description of holotype (measurements given in Table 1).—Carapace oval in dorsal aspect, slightly narrowed behind, nearly straight across anterior margin, bluntly serrate behind; shell deep, highly arched in cross section; height of shell 53 per cent of width; surface of shell having longitudinal striations; middorsal keel weakly developed, scarcely discernible except on third central lamina; lateral margin of carapace not at all reflected, posterolateral margins flared outward; central laminae all broader than long, the first urn-shaped.

Ground color of carapace (hereinafter, colors are those of preserved specimen) dark olive; upper surface of each marginal scute having round or oval black mark, two such marks on each marginal of first pair; marks on margin of anterior half of carapace having pale orange-yellow borders, marks more posteriorly having indistinct borders or no border; upper surface of carapace having numerous, irregularly arranged black marks on a faint reticulum of pale lines; one or two large oval marks on each lateral scute arranged more or less vertically, other marks on laterals irregular in size and arrangement; central scutes having three to five longitudinally arranged, narrow black marks on each scute.

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Ground color of plastron pale yellow, anterior half extensively marked with black along laminal seams; all plastral markings interconnected; undersurfaces of marginals on anterior half of shell having pale centers; undersurfaces of posterior marginals and posterior half of plastron solid black.

Plastron more or less evenly rounded in front, slightly indented on gular border; posterolateral free edge of plastron reflected slightly downward; posterior border of plastron having wide shallow anal notch; plastral laminae, in order of length—abdominal, anal, pectoral, gular, femoral, humeral; abdominal lamina longer than combined lengths of pectoral and humeral or humeral and gular.

Head moderately wide; snout slightly pointed in dorsal view, curving evenly backward and downward from nostrils in profile; upper jaw notched in middle, cutting edges finely and unevenly serrate, crushing surfaces having distinct ridge bearing fine denticulations but no large teeth; cutting edges of lower jaw coarsely and evenly serrate, tooth at symphysis relatively large; raised ridges of lower crushing surfaces each having low blunt tooth and many fine denticulations.

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Major markings of head and neck as follows: narrow stripe beginning at posterior edge of eye and extending downward and backward (across tympanum) on side of neck to shoulder (stripe wider behind than at origin); wide stripe from lower posterior corner of eye extending downward, across mandibular articulation (and below tympanum) on throat to shoulder (wider at origin than behind); postorbital mark, four to five millimeters wide, approximately 26 millimeters

long, connected to eye by narrow isthmus anteriorly and continuous with narrow stripe on upper part of neck posteriorly; stripe on mandibular symphysis widened and bifurcated posteriorly, its two branches enclosing one wide and two narrow stripes; wide stripe beginning in middle of mandibular ramus and running backward to point below mandibular articulation on each side; top of head, sides of snout, and areas between above-mentioned major stripes, marked with numerous, fine, often indistinct pale lines.

Pale dorsal stripe on fleshy portion of each finger, those of second and fourth fingers continuous to mid-humeral region, those of other fingers broken on anterior face of antebrachium; upper and lower pale stripes of antebrachium joined in mid-humeral region.

Coloration of living specimens.—Ground color of soft parts dark olive to slate gray or black; ground color of carapace olive to slate gray; ground color of plastron pale yellow, markings blackish, tinged with brown in younger specimens, sooty black in most adults. Postorbital mark red; other markings on soft parts cream to buffy yellow.

Geographic range.—*Pseudemys scripta taylori* is known only from ponds, and the Río Chiquito in the basin of Cuatro Ciénegas. The discovery of *taylori* brings to six the number of valid subspecies of *scripta* known in México (*elegans*, *gaigeae*, *hiltoni*, *nebulosa*, *ornata*, and *taylori*) and to three (*elegans*, *gaigeae*, and *taylori*) the number known in Coahuila. My own studies of these six subspecies indicate that they are, beyond reasonable doubt, members of a single polytypic species (*scripta*). I tentatively follow Williams (1956:153) in rejecting "*cataspila*" as an invalid name.

Three specimens of *Pseudemys scripta* obtained by Robert G. Webb in the Río Chiquito at a point 8 mi. W of Nadadores, 2100 ft., where the river flows out of the basin of Cuatro Ciénegas, have many characteristics in common with *taylori*, but resemble *elegans* closely in several characters as follows: no extensive melanism; plastral markings tending to be brownish; anterior plastral markings smudgelike, isolated or nearly isolated; markings on lateral scutes tending to have vertical, linear arrangement; cutting edge of mandible weakly serrate; femoral edges of plastron not reflected ventrally; one or more fine, pale lines between two major stripes on antebrachium; gular longer than pectoral in one specimen, longer than femoral in both specimens. The nature of these specimens suggests that parts of the Río Salado drainage north and east of Cuatro Ciénegas are in a zone of intergradation between *taylori* and *elegans*. I have examined what I consider to be typical examples of *P. s. elegans* from the region of Múzquiz (CNHM 28843-45, 55625-45), and from Don Martín Reservoir (KU 33524). These localities are, respectively, approximately 70 miles north-northeast and 100 miles east-northeast of Cuatro Ciénegas. The specimens from Múzquiz are presumably the same that Carr (1952:262) treated as "... *elegans-cataspila* intergrades, but with a strong leaning toward eastern *elegans*..." Populations of *P. scripta* in central eastern Coahuila (between the above-mentioned localities and Cuatro Ciénegas) probably are a conglomerate of only two subspecies (*elegans* and *taylori*), not including *gaigeae* (as was suggested by Hamilton, 1947:65 and by Carr, op. cit.:241, map 17:262).

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Specimens reported by Schmidt and Owens (1944:101) as *P. s. gaigeae* (from several localities in the region mentioned above) have been examined in the course of my study and prove to be *P. floridana texana*. A specimen reported by Shannon and Smith (1949:399; IU 4094, Hidalgo Co., Texas) as being either *gaigeae* or an *elegans-gaigeae* intergrade, has been examined and is here regarded as a typical specimen of *elegans*. I regard *P. s. gaigeae* as a subspecies of the upper Río Grande and disrupted parts of that drainage; the range of that subspecies meets that of *P. s. elegans* somewhere between the Big Bend region and Piedras Negras. In any event, the influence of *gaigeae* is not so widespread as other authors (Carr, loc. cit.; Hamilton, loc. cit.; Hartweg, 1939:3-4) have indicated.

Further collecting in the Río Salado and its tributaries east and north of Cuatro Ciénegas will be necessary before the exact range of *P. s. taylori* can be determined.

Variation.—Characteristics ascribed to the holotype pertain in general to all specimens in the hypodigm, except as noted below. The postorbital mark is in contact with the eye on one or both sides in 46 per cent of the specimens (narrowly separated from eye in remainder) and is in contact with a neck stripe (on one or both sides) in 35 per cent of the specimens. The pattern of the antebrachium is as shown in Fig. 2 in all specimens except that the thin lateral stripe is obliterated by melanism in older specimens of both sexes. The lateral edges of the posterior plastral lobe are reflected downward, at least slightly, in all but one specimen (an adult, kyphotic female). The first central lamina is straight-sided in juveniles and becomes urn-shaped only in adults. The relative height of the shell tends to increase with a general increase in size in both sexes.

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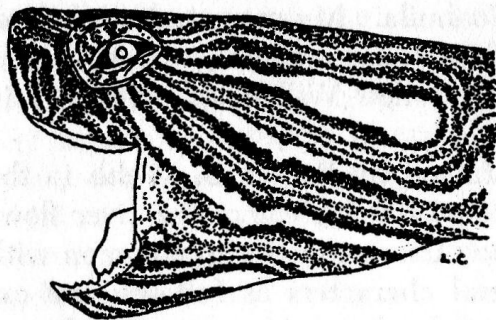


FIG. 1. *Pseudemys scripta taylori* new subspecies: left side of head, female paratype (KU 46933), × 1.

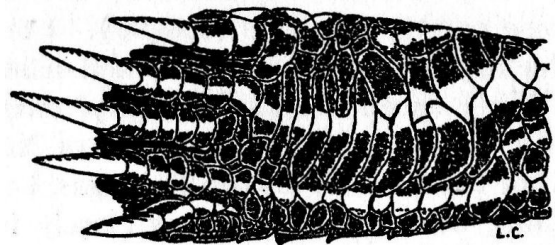


FIG. 2. *Pseudemys scripta taylori* new subspecies: anterior view of left antebrachium, female paratype (KU 46934), × 1.

Comparisons.—Of the five other subspecies of Mexican *P. scripta* mentioned above, three subspecies (*gaigeae*, *hiltoni*, and *nebulosa*) form a natural group herein referred to as the *gaigeae* group. *Pseudemys s. taylori* is distinguished from members of the *gaigeae* group by elongate, red postorbital mark (yellow or orange in the *gaigeae* group), extensive black plastral pattern (narrow—or if wide, brownish—in *gaigeae* group), and serrate lower jaw (nearly smooth in *gaigeae* group).

The subspecies *P. scripta taylori* differs from *P. scripta elegans* as indicated in the following comparative list of characteristics:

<i>P. s. taylori</i>	<i>P. s. elegans</i>
1. Extensive black plastral pattern, all parts of which are interconnected. Plastral pattern	1. Plastral pattern consisting of separate brown smudges (at least anteriorly). Plastral

- partly obliterated by melanism in old individuals of both sexes.
- 2. Markings of carapace in form of indistinct ocelli.
- 3. Cutting edge of mandible serrate.
- 4. Foreclaws of mature males unmodified.
- 5. Gular shorter than pectoral (91 per cent of specimens), gular and femoral subequal.
- 6. Shell relatively higher, posterior lobe of plastron relatively narrower (Fig. 3).
- 7. Lateral edges of posterior plastral lobe reflected downward.

- pattern obliterated by melanism only in adult males.
- 2. Markings of carapace having linear and vertical.
- 3. Cutting edge of mandible smooth.
- 4. Foreclaws of mature males greatly elongated.
- 5. Gular longer than pectoral (90 per cent of specimens) and longer than femoral (all specimens).
- 6. Shell relatively lower, posterior lobe of plastron relatively wider (Fig. 3).
- 7. Lateral edges of posterior plastral lobe unmodified.

Four specimens of *P. s. ornata* (MCZ 46392-3, 46397, 46400, two adult females and two adult males) from the Río Soto la Marina drainage of Tamaulipas differ from *P. s. taylori* as follows: plastral pattern diffuse and brownish, not black; gular longer than pectoral; cutting edge of lower jaw only slightly serrate; stripe on mandibular symphysis isolated, not joined with ventral neck stripes to form inverted Y; postorbital stripe (yellow in preservative) connected to eye by narrow isthmus and continuous with neck stripe to shoulder.

In *P. s. taylori* there is an obtuse ridge or prominence across the bridge, on a line joining the free lateral edges of the plastron; the area between the ridges is nearly flat. The bridge forms a distinct plane on each side between the mentioned ridge and the outer edges of the marginals. In cross section this plane forms an angle of 30 to 45 degrees with the horizontal plane of the plastron. The higher bridge and deeper shell of *taylori* result in a slightly higher center of gravity in this subspecies than in the specimens of *elegans* and *ornata* I have examined. In the two subspecies last named the longitudinal ridges on the plastron are indistinct or wanting and the bridge forms a lesser angle with the horizontal plane of the plastron.

The largest female of *taylori* (218 mm.) is shorter by some 30 mm. than the smaller female in the series of *ornata* from Tamaulipas whereas the largest male of *taylori* (179 mm.) is shorter by some 80 mm. than the smaller male from Tamaulipas. *Pseudemys s. taylori* probably is smaller, on the average, than either *elegans* or northern populations of *ornata*.

There seems to be no reliable published record of the color of the postorbital mark in living examples of *P. s. ornata* from Tamaulipas. Williams (1956:147, 154) indicated that this color may be red or yellow for Mexican and Central American populations of *ornata* in general and Günther (1885: Pl. 6 b) indicated that the color was yellow in *Emys cataspila*; however, both of the observations mentioned were presumably based on preserved rather than living specimens. The postorbital marks of a live specimen of *ornata* (KU 40131) from southern Veracruz were yellowish to buffy with a pinkish tinge anteriorly (*vide* notes of Robert G. Webb and a color photograph by him).

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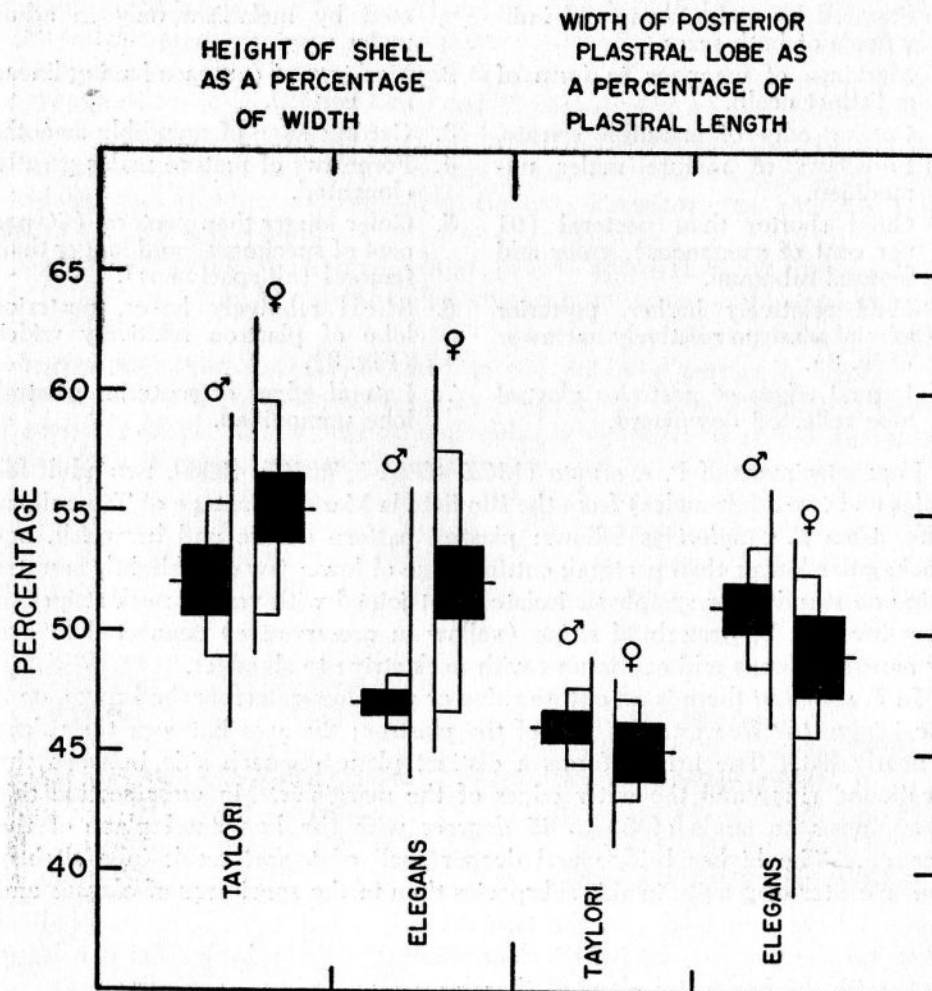
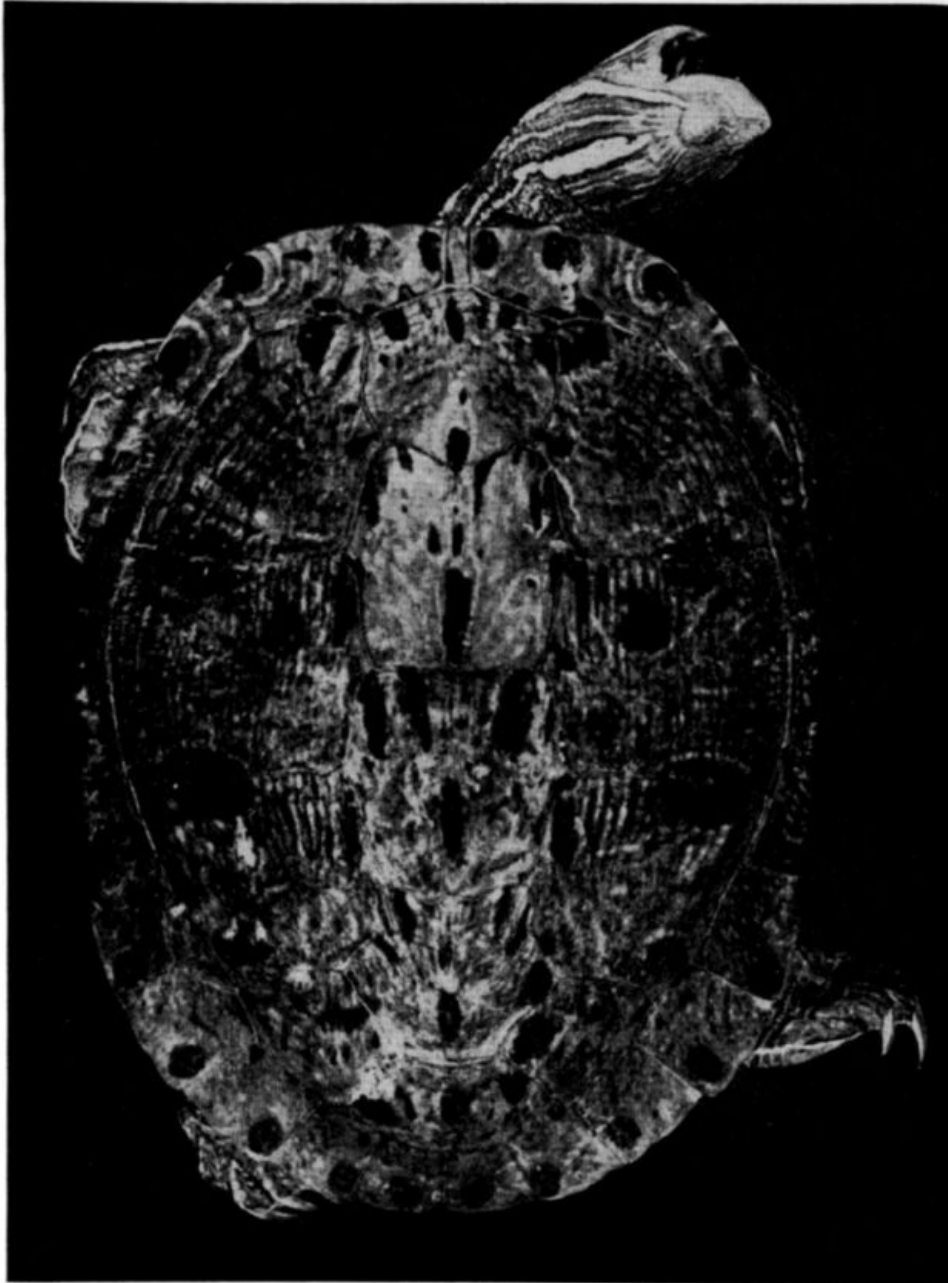


FIG. 3. Relative height of shell (expressed as a percentage of width) and relative width of posterior plastral lobe (expressed as a percentage of plastral length) in two subspecies of *Pseudemys scripta*. The data presented are for 62 specimens (40 ♀, 22 ♂) of *P. s. taylori* and 37 specimens (13 ♀, 24 ♂) of *P. s. elegans*. Horizontal and vertical lines represent the mean and range, respectively, whereas open and solid rectangles represent one standard deviation and two standard errors of the mean, respectively.

PLATE 9

PLATE 9

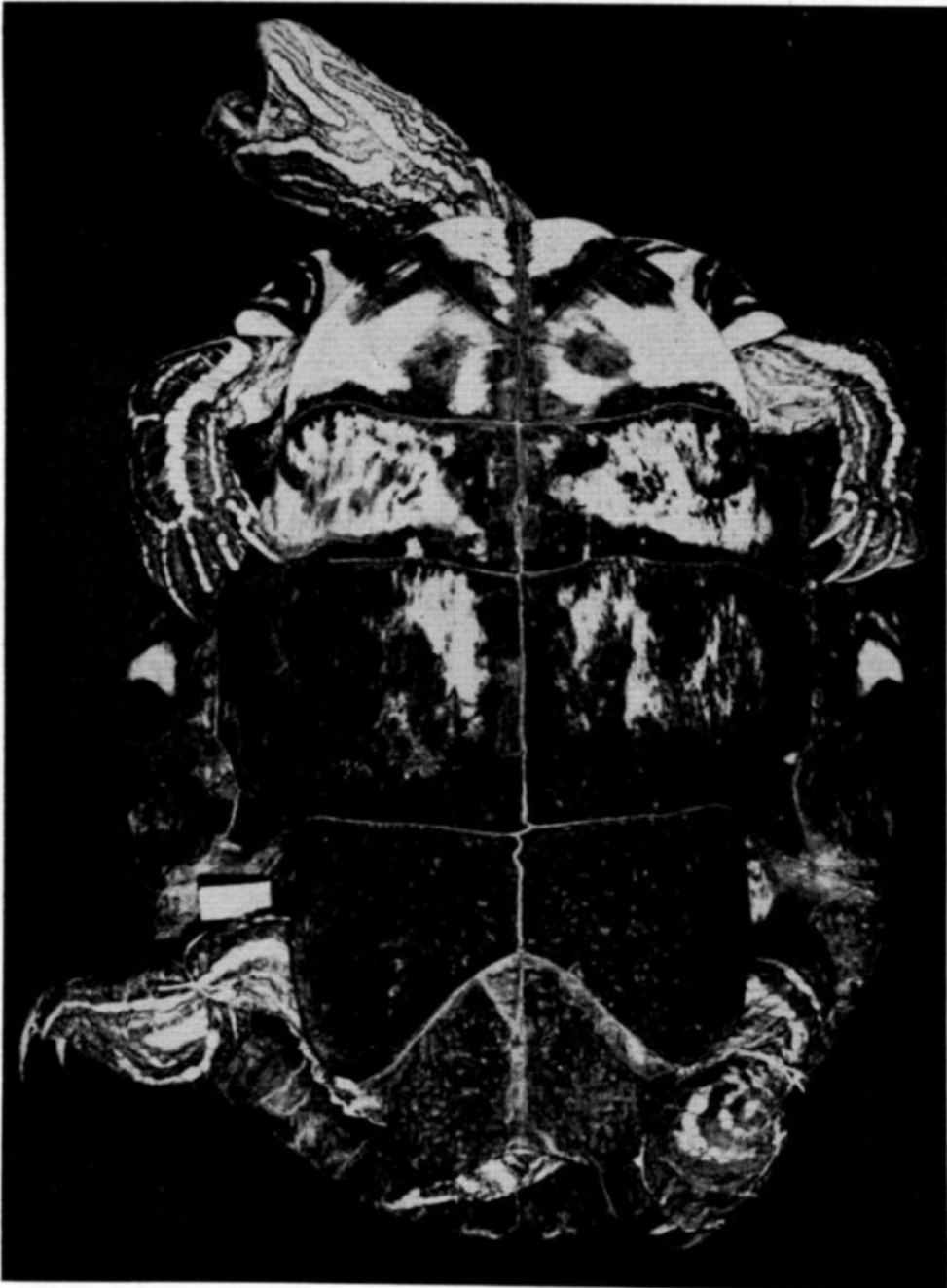


Pseudemys scripta taylori new subspecies: dorsal view of holotype (KU 46952), approximately 11/16 natural size.

Pseudemys scripta taylori new subspecies: dorsal view of holotype (KU 46952), approximately 11/16 natural size.

PLATE 10

PLATE 10

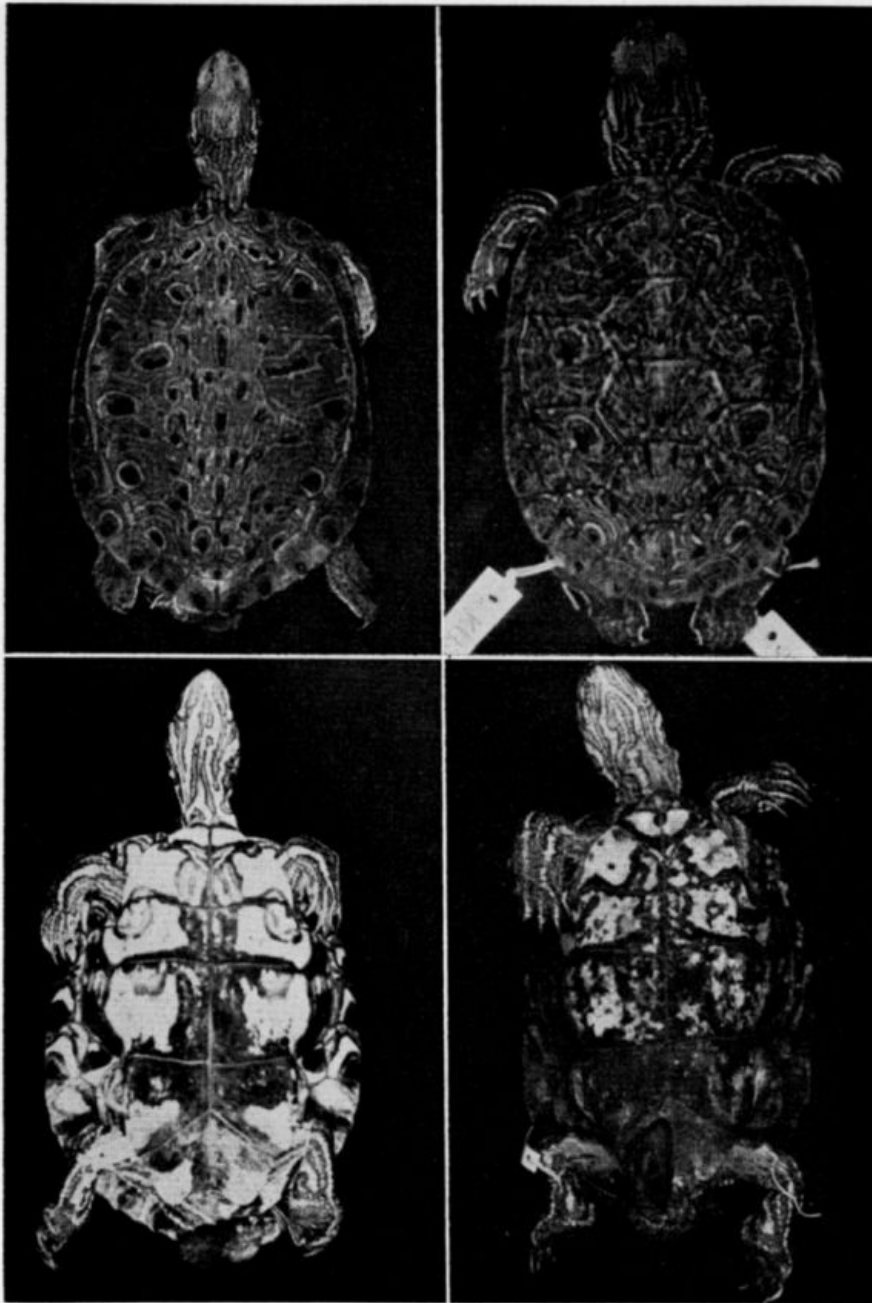


Pseudemys scripta taylori new subspecies: ventral view of holotype (KU 46952), approximately 11/16 natural size.

Pseudemys scripta taylori new subspecies: ventral view of holotype (KU 46952), approximately 11/16 natural size.

PLATE 11

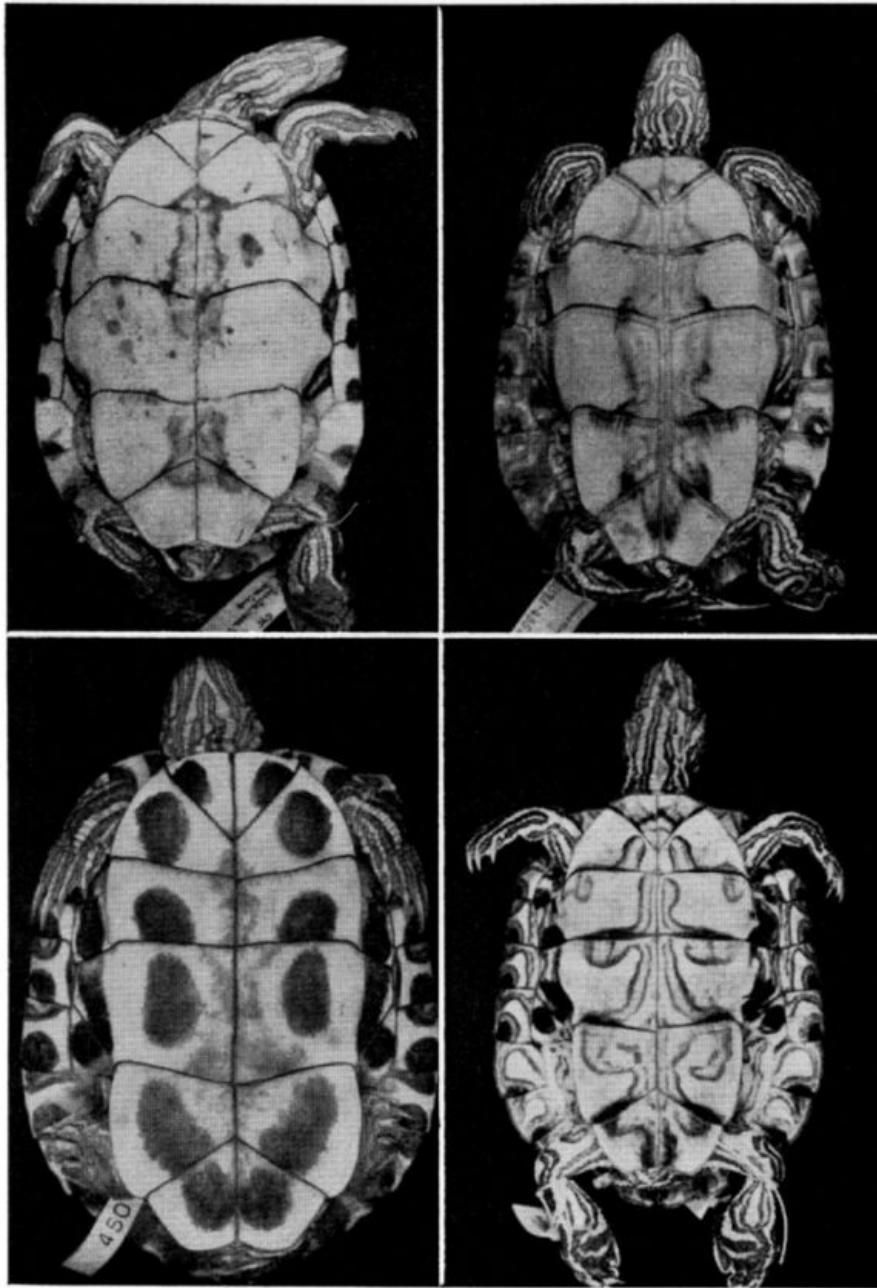
PLATE 11



Paratypes of *Pseudemys scripta taylori* new subspecies: *Left*—dorsal and ventral views of KU 46943, male, 16 km. S Cuatro Ciénegas, $\times \frac{3}{8}$; *Upper right*—KU 46974, juvenile, 6 mi. W Cuatro Ciénegas, $\times \frac{5}{16}$; *Lower right*—KU 46968, male, 16 km. S Cuatro Ciénegas, $\times \frac{3}{8}$.

Paratypes of *Pseudemys scripta taylori* new subspecies: *Left*—dorsal and ventral views of KU 46943, male, 16 km. S Cuatro Ciénegas, $\times \frac{3}{8}$; *Upper right*—KU 46974, juvenile, 6 mi. W Cuatro Ciénegas, $\times \frac{5}{16}$; *Lower right*—KU 46968, male, 16 km. S Cuatro Ciénegas, $\times \frac{3}{8}$.

PLATE 12



Ventral views of four subspecies of *Pseudemys scripta*: Upper left—*P. s. ornata* (KU 40131 ♀), Río Playa Vicente, San Andrés Tuxtla, Veracruz, $\times \frac{1}{3}$; Upper right—*P. s. gaigeae* (IU 43583 ♀), 1 mi. E La Cruz, Chihuahua, $\times \frac{3}{8}$; Lower left—*P. s. elegans* (CNHM 55627 ♂), Múzquiz, Coahuila, $\times \frac{2}{3}$; Lower right—*P. s. taylora* new subspecies (KU 46970 juvenile), paratype, 6 mi. W Cuatro Ciénegas, Coahuila, $\times \frac{11}{16}$.

Ventral views of four subspecies of *Pseudemys scripta*: Upper left—*P. s. ornata* (KU 40131 ♀), Río Playa Vicente, San Andrés Tuxtla, Veracruz, $\times \frac{1}{3}$; Upper right—*P. s. gaigeae* (IU 43583 ♀), 1 mi. E La Cruz, Chihuahua, $\times \frac{3}{8}$; Lower left—*P. s. elegans* (CNHM 55627 ♂), Múzquiz, Coahuila, $\times \frac{2}{3}$; Lower right—*P. s. taylora* new subspecies (KU 46970 juvenile), paratype, 6 mi. W Cuatro Ciénegas, Coahuila, $\times \frac{11}{16}$.

Natural history.—Specimens of *P. s. taylora* were caught in hoop nets in clear deep pools and in the Río Chiquito. No specimens were collected or observed in marshy situations where the water was shallow or stagnant. Individuals were seen only near dusk and in early morning when a number floated just below the surface with only their heads showing. They were never seen on land during our short stay in the basin. The few stomachs that were opened contained vegetable material. In terms of number of specimens trapped, *P. s. taylora* was the most abundant turtle in pools at and near the type locality (Webb and Legler, 1960).

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Relationships and phylogeny.—The basin of Cuatro Ciénegas now drains, via the Río Salado, into the lower Río Grande. Brief descriptions of habitats and topography in the basin are given by Gilmore (1947:148-150, fig. 2) and Webb and Legler (1960). In the more northern parts of the Salado drainage (for example, in the Río Sabinas near Múzquiz) slider turtles are typical *P. s. elegans*. Assuming that conditions which permit genetic exchange between populations of turtles

in the Salado drainage system differ in no major respect from conditions in other parts of the range of *Pseudemys scripta*, it is logical to suppose that the differentiation of *P. s. taylori* at Cuatro Ciénegas was preceded by the isolation of a population in that basin.

The Río Chiquito drains through a narrow gap in the northeastern end of the basin of Cuatro Ciénegas. Interruption of this stream would effectively isolate aquatic habitats in the basin.

It is here proposed that *P. s. taylori* is a relict of an earlier, lower Río Grande stock, part of which became isolated in the basin of Cuatro Ciénegas in postpluvial times. The morphological similarity of *P. s. taylori* and *P. s. elegans* indicates that both were derived from this parent stock; similarity of both subspecies to populations of *P. s. ornata* in Tamaulipas suggests that the latter subspecies may also be a derivative of the mentioned stock of the lower Río Grande.

The proposed former isolation of the basin of Cuatro Ciénegas is supported by evidence found in studies of other turtles in the basin. Of the four kinds of turtles known to occur there (*Terrapene coahuila*, *P. s. taylori*, *Trionyx spinifer emoryi*, and *Trionyx ater*), all but *T. spinifer* seem to be endemic. These three kinds comprise a graded series, in regard to their degree of differentiation from closest known relatives, as follows: 1) *Terrapene coahuila* is morphologically the most generalized and primitive of living box turtles; the species is unique in its highly aquatic mode of life (see Legler, 1960:532-534, for brief discussion of relationships within genus *Terrapene*); 2) *Trionyx ater* seems to represent a relict population of pre-*Trionyx spinifer* stock; presumably, *spinifer* has reinvaded the basin of Cuatro Ciénegas in relatively recent times and, as noted above, *spinifer* and *ater* now occur sympatrically (at least in a geographic sense) in the basin (Webb and Legler, *op. cit.*); and, 3) evidence presented above suggests that *P. s. taylori* intergrades with *P. s. elegans* outside the basin.

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The three endemic populations of turtles at Cuatro Ciénegas therefore, differ by varying degrees from their closest living relatives. This variation in degree of difference possibly results from varying periods of isolation. Probably the basin of Cuatro Ciénegas has been isolated from, and reconnected to, the lower Río Grande drainage at several times in the past. The relationships of fishes in the basin, now under study by other workers, also suggest that the basin was isolated more than once.

Remarks.—Local names for the above-mentioned localities in the basin of Cuatro Ciénegas are as follows: Anteojo (6 mi. W Cuatro Ciénegas); El Mojarral (8.5 mi. SW); and Ojo de Agua de Tío Candido, on Rancho Orozco (16 km. S). The Río Chiquito is referred to by some natives as "Río Colorado" and by some as "Río Salado." The local name for *P. s. taylori* is *tortuga negra* (the name is used also for *Terrapene coahuila*).

Acknowledgments.—For permission to examine specimens in their care, I wish to thank Doris M. Cochran, Smithsonian Institution (USNM), Ernest E. Williams, Museum of Comparative Zoology (MCZ), Rollin H. Baker, Michigan State University (MSU), Hobart M. Smith, University of Illinois (IU), and Robert F. Inger, Chicago Natural History Museum (CNHM). Pete S. Chrapliwy, John K. Greer, Robert G. Webb, and Kenneth L. Williams all contributed field data concerning the specimens of *P. s. taylori* that they collected. I am especially grateful to Webb for donating two specimens to the University of Utah (UU). Special gratitude is expressed to Wendell L. Minckley and Robert B. Wimmer for assistance with field work at Cuatro Ciénegas. Daniel Rodríguez, Cuatro Ciénegas, guided us to the various ponds at and near the type locality. Robert R. Miller, Robert G. Webb, and Donald Tinkle read the manuscript and offered helpful criticisms. Figures 1 and 2 were drawn by Lorna Cordonnier.

Comparative materials examined (total of 135 specimens).—*P. s. elegans* (52 specimens): KU 2897-8, 3195, 18337, 18341, 18345, 18347, 18364, 45027-31, 45033, 46750, 46863, and John M. Legler 1394 and 1435, various localities, Kansas; KU 16400, Howard Co., Texas; KU 39983-4, 8 mi. N and 2 mi. W Piedras Negras, Coahuila; KU 33525, 33527-9, La Gacha, Coahuila; CNHM 28843-5, 55625-45, Rancho las Ruscias, Múzquiz, Coahuila; KU 39982, 2 mi. S and 3 mi. E San Juan de Sabinas, Coahuila; KU 33524, Don Martín Reservoir, Coahuila; *P. s. elegans* × *taylori* (3): KU 53785-7, 8 mi. W. Nadadores, Coahuila; *P. s. gageae* (39): MCZ 54724, Elephant Butte Reservoir [Sierra or Socorro Co.], New Mexico; KU 51158-61, 51202-3, Lajitas, Brewster Co., Texas; KU 51162-6, 51204-6, 51315, 1 mi. NW Ojinaga, Chihuahua; KU 33884, 51167-72, 51207-20, 3 mi. N and 5 mi. E Meoqui, Chihuahua; IU 43583-4, La Cruz, Chihuahua; *P. s. ornata* (9): MCZ 46392-3, Río Purificación, Rancho Sta. Ana, Tamaulipas; MCZ 46397, E of Güémez, Tamaulipas; MCZ 46400, Jiménez, Tamaulipas; KU 40161-2, Alvarado, Veracruz; KU 40131, San Andrés Tuxtla, Veracruz; V. E. Thatcher 98, 15 mi. N Teapa, Tabasco; KU 40139, Cantemo[c], Tabasco; *P. s. taylori* (23 in addition to type series): KU 51438, 51442, 53788-53801 topotypes; KU 53802-5, 8.5 mi. SW Cuatro Ciénegas, Coahuila; KU 51439-41, 10 km. S Cuatro Ciénegas, Coahuila; *P. floridana texana* (10 from Coahuila): KU 39985, 2 mi. W Jiménez; CNHM 55654, Allende; CNHM 55646, Cd. San Juan; CNHM 55648, Hermanas; CNHM 55649-53, Lampacitas; KU 33526, Don Martín Reservoir.

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