

GRAPTEMYS OCULIFERA (Ringed Map Turtle). **FORAGING BEHAVIOR.** Species in the emydid turtle genus *Graptemys* are highly aquatic, yet dietary studies indicate occasional consumption of terrestrial insects to complement the more typical aquatic prey, which may include insect larvae, snails, clams, mussels, sponges, bryozoans, and algae (e.g., Kofron 1991, *Amphibia-Reptilia* 12:161–168; Lindeman 2000, *Can. J. Zool.* 78:992–1008; Lindeman 2006, *Chel. Cons. Biol.* 5:25–31; Shealy 1976, *Bull. Florida St. Mus. Biol. Sci.* 21:47–111; Webb 1961, *Amer. Midl. Nat.* 65:193–214). Insects may be taken after they fall to the water's surface, but terrestrial feeding by *Graptemys* has not been described. Here I detail observations of one or more male *G. oculifera* repeatedly searching for and taking insects from their terrestrial perches on a floating log.

On the morning of 25 May 2008 I observed a group of *G. oculifera* basking on a floating log lodged behind erosion-control structures beneath the Interstate 59 crossing of the West Pearl River (St. Tammany Parish, Louisiana, USA). From a shaded location on shore ca. 25 m from the log, I used a spotting scope with 30x magnification and built-in digital camera to observe basking by at least six different individuals. Initially, a male was observed straddling the log in a typical basking orientation with neck extended and head up, facing the shore. A small (ca. 1 cm long) winged insect crawled toward the male, made brief contact with the anterior edge of his plastron, and retreated. The male appeared to take no notice of the insect until this contact, then it looked down and quickly grasped the insect in its mouth and re-entered the water. In subsequent observations, a turtle (possibly the same male) was observed facing the log, holding its head above the level of the log. The turtle sometimes sat in this position for several seconds before either submerging or pulling itself up on the log with its forelimbs. On six occasions I observed the turtle pull itself up partway onto the log as if initiating a basking session, but then quickly dropping back into the water before coming completely out of the water; on two of these occasions, it was observed to make quick strikes to take insects from the log, presumably consuming them under water. The insects were unidentified but may have been wasps, based on constrictions observed at their abdomens.

Cagle (1953, *Zoologica* 38:137–144) observed two *G. oculifera* swimming against the current and straining to extend their mouths toward a log, at a point above the waterline, apparently to feed. Carr (2008 *Southeast. Nat.* 7:748–752) described repeated brief terrestrial foraging forays made by *G. pseudogeographica* along a riverbank in Louisiana. He interpreted those turtles' actions as directed at eating herbaceous plants. My observations suggest that terrestrial insects might also have been a target of their foraging behavior. Cagle's and Carr's observations and those detailed here document terrestrial feeding behavior that might explain the origin of some of the terrestrial insects included in dietary samples from species of *Graptemys*. I thank W. Selman for comments on the manuscript.

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MALACLEMYS TERRAPIN TERRAPIN (Northern Diamondback Terrapin). **CONJOINED INDIVIDUALS.** On 13 September 2007, two conjoined Northern Diamondback Terrapin hatchlings were found at Jamaica Bay Wildlife Refuge, a unit of the Gateway National Recreation Area, Queens County, New York, USA (Fig. 1). They were found on a trail, lying on their carapaces, apparently unable to right themselves. The timing and location of this find suggests that they came from one of the few nests in this area to avoid predation, incubated naturally, successfully emerged from the nest, and walked at least a short distance.

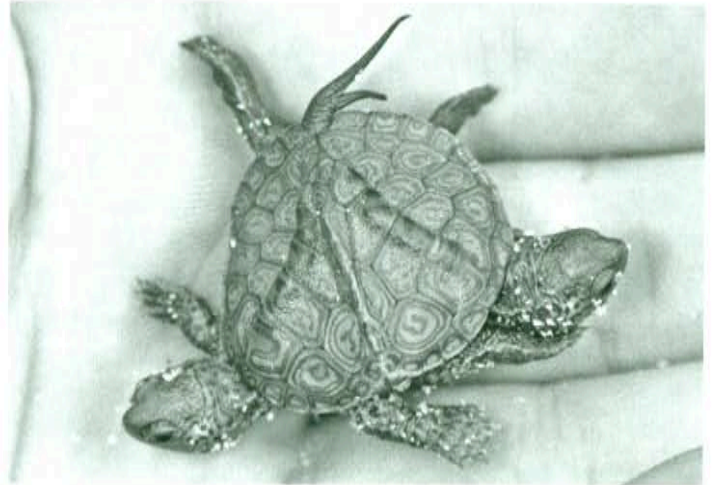


FIG. 1. Photograph of conjoined *Malaclemys t. terrapin* on 13 September 2007, the day they were discovered by a visitor of Jamaica Bay Wildlife Refuge Queens New York. Photo by ELR.

They are being raised at Cold Spring Harbor Fish Hatchery in Cold Spring Harbor, New York. The hatchlings each have two forelimbs, but share hindlimbs. There are also two tails, one larger than the other. Radiographs indicated that the terrapins are joined at the pelvis or just anterior to the pelvis (Fig. 2). The right hatchling seemed underdeveloped and was the weaker of the two. They weighed 6.19 g. The right individual had a 21.9 mm carapace length (measured from nuchal to the shared pygal);

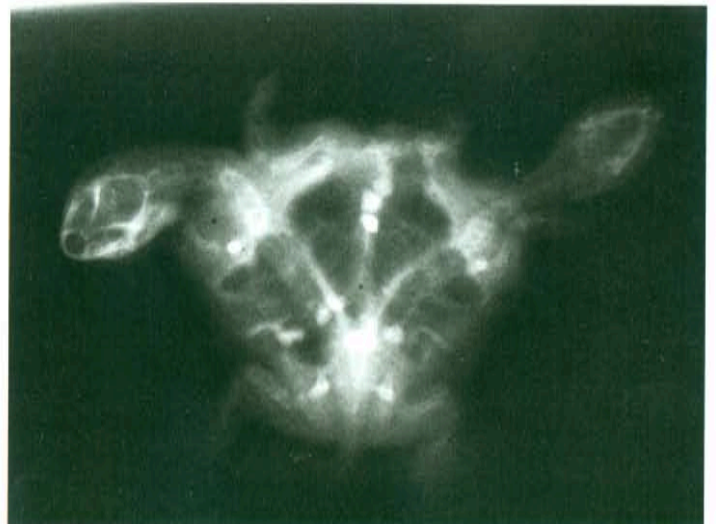


FIG. 2. Radiograph of conjoined *Malaclemys t. terrapin* on 22 July 2008, illustrating attachment at or just anterior of the pelvis.

20.1 mm plastron length; head width of 6.5 mm; and 7 left and 12 right marginal scutes. The left individual had an 18.9 mm carapace length; 20.1 mm plastron; head width of 7.7 mm; and 6 right and 12 left marginal scutes. Combined, measured down the middle, the carapace length was 22.6 mm; the plastron was 24.0 mm; the two tails measured 9.8 and 5.0 mm, respectively.

Approximately a month after they were discovered, 11 November 2007, the right hatchling had developed more and was starting to take more control in combined movements. They were alive and feeding on 11 August 2008.

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MAUREMYS RIVULATA (Balkan Terrapin). **TOURIST HABITUATION AND DIET.** Although *Mauremys rivulata* is known to tolerate human-modified habitats, and remains locally abundant, it is generally wary and most easily observed from a distance. The species is omnivorous, and bread has been noted in diet summaries since 1899 (Loveridge and Williams 1957. Bull. Mus. Comp. Zool.



FIG. 1. *Mauremys rivulata* aggregation in response to tourist-provided bread.

Harvard, 115, 557 pp.; Valakos et al. 2008. The Amphibians and Reptiles of Greece. Ed. Chimaira, Frankfurt am Main, 463 pp.).

On 24 June 2008, I witnessed several dozen Balkan Terrapins converge just below the downstream side (on the in-bound lane of the roadway above) of the bridge on the western outskirts of Skala Eresou on Lesbos Island, Greece, in response to the stopping of a tour bus on the bridge above the water course. The tour bus had paralleled the water course for several kilometers prior to stopping on the bridge, and appropriate aquatic habitat for this species was clearly available for some distance upstream. When, however, the driver tossed bread fragments into the water below, terrapins began to arrive in substantial numbers (Fig. 1) from both up- and downstream. Competition for the bread was, at times, violent and often involved several terrapins. Uwe Fritz (Museum of Zoology, Dresden, pers. com.) reported seeing similar behavior in western Crete and had heard of similar tourist habituation in this species in areas along the south coast of Turkey. These observations suggest that this behavior probably occurs at a number of tourist sites within the range of *M. rivulata*, but has gone unreported until now.

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PSEUDEMYS GORZUGI (Rio Grande Cooter). **KYPHOSIS.** Kyphosis (abnormal convex curvature of the spine) has been reported in several chelonian families, including several emydids, and may result from a variety of environmental factors and ontogenetic miscues (Plymale et al. 1978. Southwest. Nat. 23:457–462). On 17 June 2008, I captured a distinctly kyphotic adult *P. gorzugi* (Fig. 1) in the Black River at Black River Village, Eddy County, New Mexico, USA (32.22327°N, 104.21791°W; WGS 84). The apex of the carapace was slightly left of the midline at the junction of the second and third vertebral scutes, suggesting kyphoscoliosis similar to that reported for *Trachemys g. gaigeae* in New Mexico (Stuart and Painter 2008. Herpetol. Rev. 39:218–219). Scutellation was abnormal with regard to shape of vertebral and costal scutes, and two extra left costals were present posterior to C3. The ratio of shell height to carapace length was 0.54, shell height to carapace width was 0.68, and carapace width to carapace length was 0.80. The cooter appeared to be healthy and was released alive. This is the first report of kyphosis in *P. gorzugi*.

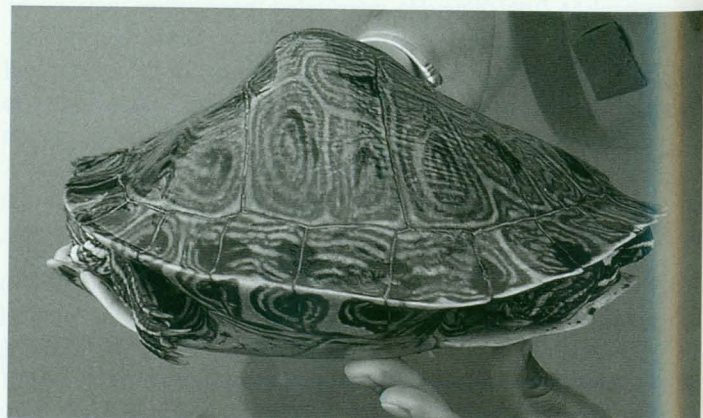


FIG. 1. Kyphotic *Pseudemys gorzugi* from Eddy County, New Mexico.