

CHELYDRA SERPENTINA (Common Snapping Turtle). **REPRODUCTION.** On the morning of 7 June 2001, we observed a 2.9 kg female *Chelydra serpentina* digging a nest at the edge of a gravel road in Utica Marsh, an urban wetland next to the Mohawk River and lying partially within the city limits of Utica, New York, USA. The nest site was 53 m from the water on a direct line and within a ca. 30 x 60 m cleared area with a gravel road running along one margin. On closer inspection of the nesting activity, we found several damaged *C. serpentina* eggs from a prior nest in the soil being dug up by the female. As she continued digging, additional eggs surfaced. Palpation of the pelvic region of the laying female indicated that she had a full load of shelled eggs ready for oviposition. We left the animal undisturbed for an hour, and upon return, found the female covering the nest. We found numerous additional broken eggs around the nest site. Palpation indicated that no eggs remained in her body cavity. Twenty-three eggs were recovered from this nest and collected for hatching in the lab. Three undamaged eggs were salvaged from the previous nest of an estimated 15–20 eggs total.

To our knowledge, this represents a rare instance of *C. serpentina* using a previously excavated nest for her own, thus destroying the eggs of the first female. Anecdotal evidence provided by others suggests that this phenomenon has been observed in several species, including *C. serpentina*, *Glyptemys insculpta*, and sea turtles. One published study of nesting in *Malaclemys terrapin* reported that females would occasionally dig up other nests in high density nesting areas, but such incidents represented less than 2% of total nesting events (Burger 1977. *Am. Midl. Nat.* 97:444–464). We have been unable to find published reports of this type of nest destruction by *C. serpentina*, and such activity was not documented by Congdon et al. (1987. *Herpetologica* 43:39–54) in their thorough study of nesting ecology of *C. serpentina*.

Although predation of *C. serpentina* nests by other species is well established, it remains puzzling as to what mechanism other than chance led to this observed nest destruction by *C. serpentina* in a low-density nesting area containing only six nest sites within this 1800 m² nesting area. Difference in soil structure does not seem to be a factor nor does relative openness of each nest site in the area. One could speculate whether olfactory cues may have contributed to selecting the first nest as the site to excavate.

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DERMOCHELYS CORIACEA (Leatherback Sea Turtle). **MIGRATION AND DISPERSAL.** While relatively large numbers of *Dermochelys coriacea* forage seasonally in temperate waters off Atlantic Canada (Bleakney 1965. *Can. Field Nat.* 79:120–128; Goff and Lien 1988. *Can. Field Nat.* 102:1–5; James and Herman 2001. *Chelon. Cons. Biol.* 4:202–205), the nesting origins of these animals are generally unknown. Until now, the only direct evidence of the nesting origins of leatherbacks found off eastern Canada came from a single animal bearing a flipper tag applied in French Guiana that was in Placentia Bay, Newfoundland, on 17 September 1987 (Goff et al. 1994. *Can. Field Nat.* 108:72–73). Here we report on the discovery of two previously marked female

D. coriacea captured while conducting field research off the coast of Cape Breton Island, Nova Scotia, in the summer of 2002.

The first turtle, measuring 162 cm curved carapace length (CCL), was captured at 1500 h on 30 August 2002 at 46°49.891'N, 60°03.139'W. During examination, an Avid IV Multi-tag reader detected a Passive Integrated Transponder (Trovan #00-061D-4876) implanted in the turtle's right shoulder muscle. A small amount of scar tissue on the epidermis (approximately 2 cm²) corresponded to the area above the implantation site. It was later established that the turtle had been tagged on 6 July 2001 at Kolukumbo Beach, at the eastern end of the Galibi Nature Reserve in Suriname (approx. 05°51.384'N, 54°07.813'W).

The second turtle (157 cm CCL) was captured at 0930 h on 7 September 2002 at 46°47.290'N, 60°11.180'W. Monel flipper tags (V1260, V1261) were discovered on the margins of both rear flippers. It was later confirmed that the turtle had been tagged on 12 May 2000 at Gandoca Beach (9°34.991'N, 82°35.091'W), on the southern end of the Caribbean coast of Costa Rica. At that time, the animal measured 156 cm CCL. She was observed nesting a second time at the same beach on 20 May 2000.

Although *D. coriacea* demonstrates a high degree of fidelity for island nesting sites, mainland nesters frequently nest across broad areas of coastline. This is true of the assemblage of *D. coriacea* in French Guiana and Suriname—now considered the world's largest nesting colony—where there is regular shifting of nesting activity between these countries in alternate nesting seasons and even in the same nesting season (Spotila et al. 1996. *Chel. Cons. Biol.* 2:209–222). The tag recovery from Suriname and the earlier flipper tag recovery from French Guiana, therefore, likely represent a common nesting origin. In fact, these two animals were tagged at sites that are less than 50 km apart.

The discovery of the turtle tagged in Costa Rica provides the first evidence of representation of an insular Caribbean nesting colony in the Canadian foraging population of *D. coriacea*.

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DERMOCHELYS CORIACEA (Leatherback Sea Turtle). **PENIS DISPLAY.** *Dermochelys coriacea* males spend their entire lives at sea, where they are rarely encountered by researchers. Basic morphometric data on males is thus very limited, as it is typically only available from stranded turtles. Collaboration with commercial fishers has enabled us to examine and tag male and female *D. coriacea* in temperate waters off Nova Scotia, Canada. Sexual dimorphism in mature animals may be most evident in tail length, with males possessing a tail a minimum of two to three times longer than that of females of a comparable curved carapace length. However, penis display during handling can also readily identify a male

turtle. Penis extrusion has been observed in snapping turtles (*Chelydra serpentina*) (de Solla et al. 2001. *Chelon. Cons. Biol.* 4:187–189), however, only in animals held off the ground. We observed partial, or complete penis extrusion in five of seven male *D. coriacea* that were captured at sea as part of a satellite telemetry study. Penis display was in all cases associated with full plastron contact with a tagging platform mounted on a boat. Penis display by leatherbacks in this context likely represents a displacement behaviour associated with handling (deSolla et al, *op. cit.*), rather than a sexual or defensive response. As sexual dimorphism in tail length is more apparent in mature and large subadult turtles, penis display may be of greatest utility in the identification of juvenile males.

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GLYPTEMYS MUHLENBERGII (Bog Turtle). **DIET.** Bog Turtles are omnivorous, opportunistic feeders that apparently eat whatever acceptable food source is most abundant and easiest to obtain (Ernst and Barbour 1989. *Turtles of the World*. Smithsonian Institution Press, Washington, D.C. 313 pp.). In Virginia, Bog Turtles have been observed eating tent caterpillars (*Malacosoma* sp.), earthworms (Annelida), and unidentified berries (Mitchell 1994. *Reptiles of Virginia*. Smithsonian Institution Press, Washington, D.C. 352 pp; Carter 1997. M.S. Thesis. Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 79 pp.).

In the summer of 1999, Virginia Department of Game and Inland Fisheries (VDGIF) biologists gathered additional information on *G. muhlenbergii* diet in Virginia during a mark-recapture population study in Floyd County. On 11 August 1999, a 9+ year-old, adult female *G. muhlenbergii* (max CL: 92 mm, max PL: 82 mm, mass: 122.5 g) deposited a fecal pellet in a holding bucket. Initial study of the scat revealed beetle exoskeleton parts which Richard Hoffman of the Virginia Natural History Museum in Martinsville, Virginia, identified as the remains of a Japanese Beetle (*Popillia japonica*), a common, exotic pest species.

On 18 August 1999, a 10+ year-old, adult female turtle (max CL: 95 mm, max PL: 86 mm, mass: 126.0 g) from a different location in Floyd County, also deposited a fecal pellet while being held for data collection. Initial study of this scat sample revealed over 30 small dark and light brown seeds. On average, the larger, dark brown seeds were 0.035 mm long and 0.016 mm wide and were considered mature. The smaller, lighter brown seeds on average were 0.020 mm long and 0.014 mm wide and were considered immature. Tom Wieboldt, Assistant Curator of the Virginia Tech Herbarium in Blacksburg, Virginia, identified the source for both types as low-bush blueberries (*Vaccinium vacillans*), a common woodland shrub species.

Based on the amount of these food items in the two scat samples, both Japanese beetles and low-bush blueberries can be considered components of *G. muhlenbergii* diet in Virginia.

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MALACLEMYS TERRAPIN TERRAPIN (Northern Diamondback Terrapin) **DIET.** *Malaclemys terrapin* is an inhabitant of salt marshes, tidal creeks, and estuaries ranging from Cape Cod, Massachusetts south to the Florida Keys and as far west as Texas. This species is especially well adapted for crushing mollusk shells, gastropods, and crabs (*Littorina*, *Mytilus*, *Uca*, and *Callinectes*) (Ernst et al. 1994 *Turtles of the United States and Canada*, Smithsonian Inst. Press, 578 pp.) but is a generalist that will also eat plant material, fish, and insects. Here we report a possible new prey item for the northern subspecies, *Malaclemys t. terrapin*, which suggests scavenging tendencies

In July 2000, a gravid female Diamondback Terrapin was found on Stone Harbor Boulevard, Stone Harbor, New Jersey (39°03'N, 74°46'W) and was taken to the nearby Wetlands Institute of Stone Harbor, New Jersey. The mortally wounded individual was euthanized and necropsied for parasite analysis (Werner et al. 2002 *Bull. New Jersey Acad. Sci.* 47[2]:21–24). Upon gross analysis of the large intestine, two live black larder beetle larvae (Dermestidae: *Dermestes ater*) were discovered. During the 2000 nesting season, 66 mortally wounded females were euthanized and necropsied but this was the only individual that showed evidence of predation on dermestid beetle larvae. Because dermestid beetles feed on carrion, we speculate that these individual larvae were feeding on carrion in the salt marsh at the time of ingestion by the terrapin. It is thus possible that the female *Malaclemys* had been recently feeding on carrion and ingested the two larvae. The carrion may have been floating on surface waters or perhaps the female was feeding on land before nesting. It is unknown whether or not *Malaclemys* will feed on land (R. Wood, pers. comm.). It is also unknown how these larvae survived the digestion process.

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TERRAPENE CAROLINA TRIUNGUIS (Three-toed Box Turtle). **AQUATIC BEHAVIOR.** *Terrapene carolina triunguis* is primarily terrestrial, although there have been reports of aquatic behavior, such as moving into water during the heat of summer and entering water to drink (Dodd 2001. *North American Box Turtles: A Natural History*. Univ. Oklahoma Press, Norman, Oklahoma. 231 pp.). We observed four instances of aquatic behavior in