Fig. 2. One of the hatchlings of *Chelydra serpentina* at the Lake Mud nesting site, the day after hatching. For the purpose of the photo, the specimen was moved back to the nest location.

Fig. 3. A nest site of *Chelydra serpentina* found on the side of Quebec Highway 117, Lake Massia.

To my knowledge, this is the northernmost successful hatching reported for *C. serpentina* in Quebec. In northern populations, lower temperatures and shorter growing seasons severely reduce recruitment (Bobyn and Brooks 1994. Can. J. Zool. 72:28–37). Despite the northern location of the Lake Mud nesting site, its close proximity to the house potentially created a warmer microclimate for incubation. Indeed, the site was well exposed to the sun and protected from colder winds coming from the north. This may have contributed to the hatching success of this clutch.

On 10 October 2015, I found another nest of *C. serpentina* after a nesting attempt was reported on 9 July 2015 beside Lake Massia, Rouyn-Noranda, by nuisance beaver control trappers. This one was located 5.6 km SW of the other nest, on the south side of Quebec Highway 117 (48.1761°N, 79.3361°W; NAD 83). The nest was dug into the gravel substrate of the roadside, near water (Fig. 3). The female was disturbed by the trappers during the nesting attempt. When I found the nest in fall 2015 I was not able to determine the outcome of the clutch. There were some eggshell residue around the nest site, and scats indicating a recent visit by *Vulpes vulpes* (Red Fox). An examination of the eggshell residue revealed that the eggs were spherical, typical for *C. serpentina*.

I thank Mike Allen for his monitoring of the nest and Jonathan Gagnon for field assistance. Also, I acknowledge Marc J. Mazerolle (Université Laval) and Yohann Dubois (Ministère des Forêts, de la Faune et des Parcs) for their comments on a previous version of the manuscript.

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***CLEMMYS GUTTATA* (Spotted Turtle). COLORATION.** On 9 April 2015, we captured a female *Clemmys guttata* (SCL: 83 mm, SPL: 72 mm, mass = 103 g) at a wetland site in the Coastal Plain of southern Georgia, USA (precise location withheld due to the imperiled status of this species) that possessed abnormal coloration for the species (Fig. 1). When recaptured two years later on 20 April 2017 (SCL: 84 mm, SPL: 72 mm, mass = 119 g) the turtle's coloration had not changed and its growth had been negligible. We suspect this individual is sexually mature and that it reached maturity at a SCL that is a bit smaller than normal (Litzgus,and Mousseau 2004. Southeast. Nat. 3:391–400) or it has ceased growing.

In our description of this specimen below we classify names of colors following Kohler (2012. Color Catalogue for Field Biologists. Herpeton Publishing, Offenbach, Germany. 49 pp.) The carapace of the turtle lacks yellow spots and is tawny to dark salmon in color (color codes 56, 59, 60) with black pigment evident in the sutures between scutes. The plastron is typically pigmented (i.e., yellow-orange with black blotches and a mostly black bridge). The head, neck, and throat are mostly chrome orange to salmon (color codes 74, 251) with the top/interorbital portion of the head grading to light chrome orange (color code 76) and with black pigment

PHOTOS BY JONATHAN D. MAYS (TOP); (DIRK J. STEVENSON (BOTTOM).

Fig. 1. Aberrant female *Clemmys guttata* found in southern Georgia, USA. Carapace and head (top); plastron and underside of head/neck (bottom).

limited to the top third portion of the head and neck, including a large misshapen blotch atop the head. The pupil of the eye is black with the iris chrome orange to salmon (color codes 74, 251). The front and hind limbs are predominantly chrome orange with some scattered flecks of black. The tail is normally pigmented.

Typical coloration for adult *C. guttata* includes the presence of scattered small round yellow spots (which actually are transparent windows in the scutes overlaying deposits of yellow pigment) on the carapace (otherwise normally black or gray), head/neck, and limbs; orange pink or salmon-red skin on the lower surface of the limbs; and gray to black skin on the upper surface of the neck, limbs, and tail. Adult females have orange eyes (Ernst and Lovich 2009. Turtles of the United States and Canada, 2nd Edition. Johns Hopkins University Press, Baltimore, Maryland. 827 pp.).

Based on its color and pattern, this specimen exhibits hypomelanism (e.g., reduced black pigment on the carapace, head, neck, and limbs) or erythrism (unusual/pronounced amount of reddish pigment on head, neck, and limbs). Insofar as we know, there are no reports of wild-caught *C. guttata* possessing this type of coloration (Ernst and Lovich, *op. cit.*).

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***GLYPTEMYS INSCULPTA* (Wood Turtle). RAIL TRAIL NESTING CHALLENGES.** Populations of *Glyptemys insculpta* are thought to be in decline over much of the species' range due to pressures such as land development, subsidized predation, and illegal collection, (e.g., Harding and Bloomer 1979. Bull. New York Herpetol. Soc. 15:9–26; Steele et al. 2010. Terrestrial Vertebrates of Pennsylvania: A Complete Guide to Species of Conservation Concern. The Johns Hopkins University Press, Baltimore, Maryland. 507 pp.). In many places, the turtles must use both natural and human-modified spaces for life activities. *Glyptemys insculpta* prefer nesting sites that are well-drained in sand or loose soil substrate, open to sunlight, and free of vegetation (e.g., Harding and Bloomer, *op. cit.*; Buech et al. 1997. *In* J. Van Abbema [ed.], Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles: An International Conference, pp. 389–391. New York Turtle and Tortoise Society, New York). In many places, abandoned railroad beds have been converted to hiking and biking trails; rail trails retain the structure of the former rail bed, and may undergo maintenance and modifications to facilitate the foot and bicycle traffic. On a recreational bicycle journey in early June 2015, a female *G. insculpta* was observed post excavation at a nesting site on the shoulder of a rail trail in north-central Pennsylvania. The aggregate comprising portions of the rail trail surface at the shoulders (Penn State Center for Dirt and Gravel Road Studies 2013. Trail Surface Aggregate (TSA) Technical Bulletin. University Park, Pennsylvania. 4 pp.) at times becomes comparable in texture, and similar in compaction qualities (e.g., after late winter freeze/thaw cycles and spring rains loosen the surface [pers. obs.]) to the substrate found in natural, "workable" nesting sites preferred by *G. insculpta* (Kaufmann 1992. J. Herpetol. 26:315–321).

To determine whether the turtles were still nesting at the rail trail site, we revisited the area on 19 May 2017. We discovered that *G. insculpta* were nesting at the same site, and were periodically nesting along both shoulders of the 8-km length of trail. We returned to the rail trail for observation approximately bi-weekly from May through mid-October and conducted piecemeal, visual surveys for a total contiguous coverage of 84.2 km. Encountered individuals and predated nests were photographed and documented. While conducting the routine observations along the rail trail, we observed various phenomena as potential challenges for nesting *G. insculpta*:

- Rock falls from the often-steep sided valleys can have enough force when hitting the trail to penetrate through the shoulder surface mix, where nests are excavated, and into the gravel base. Such occurrences would likely have enough energy to destroy eggs in the immediate impact zone.
- High winds associated with severe weather systems had downed trees large enough to penetrate the surface mix, similar to rock falls. Portions of trees felled by the winds jammed down onto the shoulders through the surface and into the base. Again, any nests in the immediate impact zone would have most likely been fatally compromised.
- Intense rainfall triggered significant ground saturation on the upland side of the rail trail to cause ponding that covered the surface mix in places. If flood-like conditions last long enough, submergence and drowning of deposited eggs could occur.
- In addition to flooding, precipitation-mobilized debris flows occurred down the steep valley slopes and then were deposited at the adjacent, upslope shoulder side of the trail. The material was moved from the upslope to the trail and filled the lower drainage ditch up to the shoulder. Local nests could have been completely covered with the freshly transported materials. Even if a nest survived the movement of rock debris, the added overburden could change the thermal characteristics of the nest and impede exit of hatchlings.
- Significant precipitation falling directly onto the main surface of the trail caused substrate erosion and could expose or dislodge eggs.
- Bicyclists, hikers, maintenance crews, and other vehicles dislodged shoulder material and exposed the gravel base, which could also expose nests or dislodge eggs.

The aforementioned phenomena may offer unanticipated challenges to nesting *G. insculpta*, by exposing or damaging eggs, perhaps leading to increased predation activity, changing nest environments, and interfering with hatchlings trying to leave the nest. Human-modified nest sites, such as this trail, may offer the turtles an alternative to natural sites destroyed by development. However, it is important to understand the limitations of these "artificial" sites and study possible methods of mitigating the problems.

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***GOPHERUS AGASSIZII* (Mohave Desert Tortoise). BURROW ASSOCIATE.** Burrowing animals are often referred to as ecosystem engineers as they modify and create habitats that benefit the community and ecosystem (reviewed in Kinlaw 1999. J. Arid. Environ 41:127–145; Jackson and Milstrey 1989. Diemer et al. [eds.],