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WINTER ACTIVITY RECORDS OF THE COMMON SNAPPING TURTLE (*CHELYDRA SERPENTINA SERPENTINA*) IN VIRGINIA

— Winter records of reptiles in Virginia have been published on an irregular basis. Mitchell & Kirk (1996) detailed the discovery of a frozen eastern worm snake (*Carphophis amoenus amoenus*) following snow melt and heavy winter rains in January. Rainbow snakes (*Farancia erythrogramma*) are well known for being active in winter. Richmond (1945) observed one being eaten by a hawk on ice in February in New Kent County. An eastern kingsnake (*Lampropeltis getula getula*) was reported to be active in Gloucester County when snow was on the ground in December (Mitchell, 1994). On warm days in January and February, eastern painted turtles (*Chrysemys picta picta*) are often seen basking on logs in ponds and individuals have been caught while swimming in cold water (JCM, pers. obs.). Records of winter activity for common snapping turtles (*Chelydra serpentina serpentina*) in Virginia have not been published. Available activity records occur in late March through October (Mitchell, 1994). Two records of winter activity (December and January) have been reported for eastern locations in North Carolina (Palmer & Braswell, 1995).

On 21 January 1996 a male snapping turtle (221 mm carapace length [CL], 151 mm plastron length [PL], 2.45 kg) was discovered by a local citizen on the bank of the South River near Grottos, Rockingham County, Virginia. It was found about 3 m above the edge of the river adjacent the Grand Caverns commercial property. The turtle was seen initially on 20 January and apparently had not moved for at least 24 h. The river had flooded above this location two days earlier from the heavy rains (4.1 cm over the 19th and 20th) and snow melt that caused extensive flooding in the Shenandoah Valley. Daytime highs were 15 and 12° C and lows were 5 and -7° C on these two days, respectively (National Climatic Data Center, 1996). The person who made the initial observation brought the turtle to The Wildlife Center of Virginia because he had noticed blood around the mouth. The oral cavity was healthy without wounds or lesions, and there was no active bleeding. No injuries or lesions were found on shell or skin of the limbs, neck, or head. Several leeches, probably *Placobella* sp., were attached to skin folds of the neck and legs. The turtle was released on 24 January in the South River at the original location.

Another male common snapping turtle (338 mm CL, 241 mm PL, 8.1 kg) was brought to The Wildlife Center on 16 February 1996 after it was found immobile and exposed on the ground some 18 m from Narrow Passage Creek northwest of Woodstock, Shenandoah County, Virginia. Temperatures in the three days preceding this observation averaged 3.7° C (0.56 to 8.9 highs) and -3.7° C (-7.2 to -1.1, lows). No rain fell during this period. The turtle had no apparent injuries or problems except for a well-healed L-shaped scar (47 × 40 mm) on the second and third pleural scutes on the left side of the carapace. It was picked up on 19 February and released near its original location.

The first observation suggests that the snapping turtle was dislodged from its overwintering site by the flood and was apparently injured slightly during the event. The second observation has too few associated data to allow us to speculate on why it was on land in mid-February.

The effects of flooding on reptiles are not well investigated. Mitchell & Geogel (1996) described a northern water snake (*Nerodia sipedon sipedon*) that had apparently been injured in a flood event in the Blue Ridge Mountains. Severe flood events in Virginia, especially those that occur in winter, undoubtedly cause injury and mortality of numerous reptiles but go unnoticed by the scientific community. All observations of winter activity and displacement by flood events should be reported.

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PREDATION OF MARBLED SALAMANDER (*AMBYSTOMA OPACUM* [GRAVENHORST]) EGGS BY THE MILLIPED *UROBLANIULUS JERSEYI* (CAUSEY) — Millipedes (class Diplopoda) are detritivores, feeding mainly on leaf litter and other forms of decomposing plant material. They have not hitherto been implicated in predation of amphibians or their eggs, although Schubart (1947) mentioned that a specimen of *Heterotyge*

araguayensis (Schubart) (family Spirostreptidae) devoured an unidentified Brazilian hydrid with which it had been confined overnight. It is unknown if the frog was killed by the conditions of its confinement or by defensive allomones produced by the milliped. It is therefore of interest to record our observations of apparent predation of amphibian eggs by millipeds in Virginia.

On 7 October 1987 six adult *Ambystoma opacum* were found guarding their egg clusters in the Maple Flats region of the George Washington National Forest, 13 km S of Stuarts Draft, Augusta County, Virginia. All were found under decaying logs in dry vernal ponds. The soil under the logs was moist and the salamanders were found in depressions with their eggs. In two of the nests we found several individuals of the milliped genus *Uroblaniulus* crawling among the eggs. Five millipeds were found in one clutch and three in another. All eggs, attending females, and millipeds were collected for subsequent examination.

Each egg was examined closely for indications of punctures and mutilation, however, none were found. We were also unable to see actual predation in the field. The stomachs of the six females contained only one beetle larva, earthworm remains, and what appeared to be a salamander egg, but no millipeds. This suggests that *Uroblaniulus jerseyi* may enjoy some immunity from predation by these females. Adult marbled salamanders are predators of a variety of invertebrates (Surface, 1913; Bishop, 1941) but millipeds have not yet been reported in their diets.

Carnivory is an exceptional lifestyle among millipeds. The literature on this subject was reviewed by Hoffman & Payne (1969) who documented only twelve published references while adding several observations from personal experience. Most of the known cases involve species belonging to the two related orders Julida and Spirostreptida and probably reflect only facultative carnivory. Among Nearctic forms, several members of the endemic family Parajulidae (order Julida) were referenced by Hoffman & Payne (1969). Two are notable. An undescribed genus and species from southern Georgia was found feeding in numbers on the flesh of a decomposing deer head. An unidentifiable species of the parajulid genus *Uroblaniulus* was found attacking the pupa of a sawfly in central Virginia (Morris et al., 1963). Pending revision of *Uroblaniulus* the name *U. jerseyi* (Causey, 1950) may be used to designate this milliped. It seems to be the same species that was found among the salamander eggs as described above, suggesting a preferential rather than opportunistic interest in animal tissue as a food resource. It may be worthy of note that only females were found