

New State Record Lengths and Associated Natural History Notes for some Illinois Snakes

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ABSTRACT

Record length snakes of four species and associated natural history information are reported from Carroll and Whiteside Counties, Illinois. Three of the snakes (*Heterodon nasicus nasicus*, *Pituophis melanoleucus sayi*, and *Thamnophis sirtalis sirtalis*) were captured in sand prairie habitat and the other (*Elaphe vulpina vulpina*) on a muddy bank of the Mississippi River. A large brood from the *T. s. sirtalis* (83 neonates) and food items for *H. n. nasicus* are also reported.

INTRODUCTION

Although Boundy (1995) recently reviewed records for maximum lengths of North American snakes, the most recent record of maximum lengths of Illinois snakes was published over thirty-five years ago (Smith, 1961). Herein we report large individuals of four species of snakes collected in Carroll and Whiteside Counties, Illinois with total lengths longer than those cited by Smith (1961). Also reported are June feeding habits for *H. n. nasicus* in sand prairie habitat and a record size brood from the record length *T. s. sirtalis*.

METHODS AND MATERIALS

All snakes were captured by hand during June, 1997, and were subsequently marked, measured, and released at the capture site. For each snake, total length (TL) was measured in millimeters from tip of snout to tip of tail. Locations for three of the snakes were determined with a Global Positioning System. Photographs were vouchered with the Illinois Natural History Survey for the *Elaphe vulpina vulpina* (INHS 1998-1), *Pituophis melanoleucus sayi* (INHS 1998-2), and *Thamnophis sirtalis sirtalis* (INHS 1998-3).

RESULTS AND DISCUSSION

The large western fox snake (*Elaphe vulpina vulpina*) (TL=1600 mm) was captured on 27 June 1997 at 1700 hr hiding in a hollow piece of driftwood at the Thomson Causeway Recreation Area (Carroll Co.). We recaptured this female snake 3 d later in the rotting root of a tree 25 m north of the first capture on the same bank. The record length for the species *E. vulpina* listed in Conant and Collins (1991) is 1791 mm, but neither the locality nor the subspecific designation is reported for this snake. The largest Illinois specimen previously reported for a fox snake was 1297 mm (Smith, 1961).

The bullsnake (*Pituophis melanoleucus sayi*) was captured on 2 June 1997 while basking in a small patch of prickly-pear cactus at the Thomson-Fulton Sand Prairie in Whiteside Co. (41° 55' 8.0" N, 90° 6' 0.9" W). With a TL of 1937 mm, this male snake was larger than the one reported by Smith (1961) with a TL of 1880 mm.

A female plains hognose snake (*Heterodon nasicus nasicus*) (TL=705 mm) was caught on 9 June 1997 at the Thomson-Fulton Sand Prairie in Whiteside Co. (41° 55' 9.8" N, 90° 6' 58.6" W). The largest Illinois specimen previously reported was 593 mm (Smith, 1961).

Predation on turtle eggs by western hognose snakes has been reported for Whiteside Co. (Barten, 1980), Kansas and Nebraska (Platt, 1969), and western Nebraska (Iverson, 1990). On two occasions, 8 June and 11 June 1997, we found hognose snakes with their heads inside *Chrysemys picta* nests consuming eggs. The snakes had eaten 4 and 1 egg(s), respectively, before being collected. A total of 9 snakes was found to have eaten eggs in 1997 (mean number of eggs eaten per snake=4.11; SD=2.23). Overall, 9 of 52 snakes (17.3%) collected in June 1997 had consumed eggs. Platt (1969) reported a maximum of 11.1% or 2 of 18 snakes that he examined contained turtle eggs.

We also observed predation by hognose snakes on six-lined racerunners (*Cnemidophorus sexlineatus*). Platt (1969) reported racerunners as food items for as many as 22.2% (12 of 54 snakes) of western hognose snakes he examined. On 24 June 1996, a hognose snake was found under a board struggling with a racerunner, and on 4 June 1997, a hognose was collected with a partially swallowed racerunner in its mouth. The snake was collected and finished ingesting the lizard while in captivity. The frequencies of 6.7% (1 of 15 snakes) for 1996 and 1.9% (1 of 52 snakes) for 1997 are considerably less than those reported by Platt (1969).

The eastern garter snake (*Thamnophis sirtalis sirtalis*) (TL=1066) individual was caught on 4 June 1997 at the Thomson-Fulton Sand Prairie in Whiteside Co. (41° 55' 17.3" N, 90° 6' 54.4" W). This snake was slightly larger than the largest Illinois specimen reported by Smith (1961, TL=1044). The female gave birth to a litter of 83 viable neonates while in captivity, which is 30 more than the largest Illinois litter size of 53 (Cagle, 1942) reported in Smith (1961). In addition, it may be the largest litter of viable neonates documented; only Martof (1954) has reported a larger litter size of 85, but 7 were dead at birth. Data collected from the neonates of this large litter include mass (mean=1.59 g; SD=0.106 g), SVL (mean=145.61 mm; SD=4.45 mm), and TL (mean=191.18 mm; SD=6.08 mm).

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LITERATURE CITED

- Barten, S. L. 1980. The consumption of turtle eggs by a western hognose snake, *Heterodon nasicus*: a field observation. Bull. Chicago Herpetol. Soc. 15:97-98.
- Boundy, J. 1995. Maximum lengths of North American snakes. Bull. Chicago Herpetol. Soc. 30:109-122.
- Cagle, F.R. 1942. Herpetological fauna of Jackson and Union Counties, Illinois. Am. Midl. Nat. 28:164-200.
- Conant, R. and J.T. Collins. 1991. A Field Guide to Reptiles and Amphibians. Eastern and Central North America. 3rd ed. Boston: Houghton Mifflin Co.
- Iverson, J.B. 1990. Nesting and parental care in the mud turtle, *Kinosternon flavescens*. Can. J. Zool. 68:230-233.
- Martof, B. 1954. Variation in a large litter of gartersnakes, *Thamnophis sirtalis sirtalis*. Copeia 1954:100-105.
- Platt, D. R. 1969. Natural history of the hognose snakes *Heterodon platyrhinos* and *Heterodon nasicus*. Univ. Kansas Publ. Mus. Nat. Hist. 18(4): 253-420.
- Smith, P. 1961. The amphibians and reptiles of Illinois. Bull. Illinois Nat. Hist. Surv. 28:1-298.

