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***ANEIDES AENEUS* (Green Salamander). MAXIMUM SIZE.** *Aneides aeneus* is a partially arboreal cliff specialist distributed discontinuously across the Appalachian Highlands and Cumberland Plateau ecoregions of the eastern United States. Maximum size in *A. aeneus* has been reported as 140 mm, with typical body size ranging from 83–125 mm total length (Conant and Collins 1998. Reptiles and Amphibians and Eastern and Central North America. Houghton-Mifflin, New York. 616 pp.). We encountered a number of individuals exceeding this average size range and approaching the record size for *A. aeneus* during a survey of several populations at the interface of the Appalachian Plateau and Valley and Ridge physiographic provinces in southwest Virginia during summer 2013.

One site, in particular, possessed multiple individuals exceeding this average size range and one individual exceeding the reported record size for the species. This site, located on the High Knob Massif in Wise Co., Virginia, is a previously undocumented locality for *A. aeneus* at a complex system of exposed sandstone outcrops extending over an approximately 3-ha region on a sheltered, north-facing slope of High Knob (36.89253°N, 82.62955°W; datum: WGS 84). We captured two individuals exceeding the typical size range for *A. aeneus* at this site on 8 July 2013 and 20 August 2013 (126.5 mm and 137.0 mm total length, respectively). A third individual, a female captured on 09 October 2013, measured 148.0 mm total length (78.0 mm SVL) and surpasses previously reported size records for the species by 8 mm. This individual appeared to be in the later stages of regrowth of a small portion of an autotomized tail tip, suggesting a potential size of up to 150 mm total length. All body size measurements were made with a set of Vernier calipers in the field, and, when possible, were verified via repeated measurements by two independent observers. Vouchers for all specimens were deposited in the University of Virginia's College at Wise Herpetological Collection (UVWHC 2013-01–2013-03).

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***ANEIDES LUGUBRIS* (Arboreal Salamander). LEUCISM.** Leucism has been reported in a number of plethodontid salamanders: *Plethodon* (Hayslett et al. 1998. Herpetol. Rev. 29:229–230; Mendyk et al. 2010. Herpetol. Rev. 41:189–190), *Desmognathus* (Mitchell 2002. Banisteria 20:70–74), *Phaeognathus* (Graham et al. 2009. Herpetol. Rev. 40:197), *Eurycea* (Miller and Braswell 2006. Herpetol. Rev. 37:198), and *Aneides* (Williams et al. 2013. Herpetol. Rev. 44:114– 115). In the genus *Aneides*, color variation has been documented for *A. ferreus* (Dyrkacz 1981. Herpetol. Circ. 11:1–31; Houck 1969. Herpetologica 25:54), *A. flavipunctatus* (Hensley 1959. Publ. Mus. Michigan State Univ. 1:135–159; Seeliger 1945. Copeia 1945:122), and *A. aeneus* (Williams et al. 2013, *op. cit.*).

Here we present the first record of leucism in *Aneides lugubris*. At 2205 h on 31 May 2013, an adult leucistic *A. lugubris* was found in Cañon Salsipudes, 23 km N of Ensenada, Baja California, Mexico (31.97875°N, 116.76974°W; datum: WGS84; elev. 123 m). The individual exhibited lack of normal pattern and appeared cream colored, except for small dorsal yellow-colored spots and the darkly pigmented eyes (Fig. 1). It was found foraging on the stream bank among riparian vegetation dominated by Arroyo Willow (*Salix lasiolepis*) and Western Sycamore (*Platanus racemosa*).

FIG. 1. Leucistic *Aneides lugubris* from Salsipuedes, Baja California, Mexico.

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***CRYPTOBRANCHUS ALLEGANIENSIS ALLEGANIENSIS* (Eastern Hellbender). CANNIBALISM.** Although cannibalism in the Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*) has been previously reported (Nickerson and Mays 1973. The Hellbenders: North American Giant Salamanders. Milwaukee Public Mus. Press; 106 pp.; Petranka 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C. 587 pp.; Phillips and Humphries 2005. *In* Lannoo [ed.], Amphibian Declines: The Conservation Status of United States Species, pp. 648–651. Univ. California Press, Berkeley, California), additional cases are worthy of note, since only a few specific reports of this behavior have been recorded from wild caught hellbenders, and there has been no discussion on the possible causes of this behavior. Cannibalism was first reported in *C. a. alleganiensis* by Reese (1903. Sci. Monthly 62:526–531). In captivity, he observed a larger hellbender consuming a conspecific about half the size of the larger one (sizes of either animal were not provided). He was able to remove the ingested smaller specimen with forceps, and it swam away unharmed when released in its enclosure. Smith (1907. Biol. Bull. 13:5–39) reported a two-year-old hellbender in northwestern Pennsylvania, when placed in quiet water after capture, regurgitated a partly digested 6-cm larva of its own kind. The size of the larger specimen was between 12.0 cm and 12.3 cm. The only other reported observation of cannibalism in this species from a wild specimen is that of Humphries et al. (2005. Herpetol. Rev. 36:428) who reported that a larger, wild-caught adult male *C. a. alleganiensis* (37.2 cm TL) regurgitated a smaller individual (18.5 cm TL) in the field. The North Carolina population where this occurred is very dense

FIG. 1. Cannibalized juvenile *Cryptobranchus alleganiensis*, Transylvania Co., North Carolina.

and comprised of all size classes (J. Humphries, pers. comm.; L. Williams, pers. obs.). Here we report another field case of cannibalism from a North Carolina population.

On 29 June 2010 an adult female (39 cm TL) *Cryptobranchus a. alleganiensis* was collected from a fast riffle, in a section of the French Broad River, Transylvania Co., North Carolina (the site is recorded with the North Carolina Wildlife Resources Commission and is withheld to protect the specific location). After data collection, the specimen was held in a mesh bag and lowered into the water in strong, swift current in preparation for its release. During this process and after being subjected to the strong current, it regurgitated a smaller hellbender (21 cm TL) while still in the mesh bag. The consumed hellbender was decaying, and there was a strong odor of rotten flesh (Fig. 1). From our observations and photographs of the carcass, it appears that the adult hellbender grasped the smaller hellbender laterally on its right side (tooth marks identified on dorsolateral surface of body confirmed by North Carolina Zoo pathologist Brigid Trovan). Unfortunately, this regurgitated hellbender was not saved due to its advanced state of decay. The locality where this observation was made contains a robust, reproductively active population of hellbenders of all age classes.

In a similar example, Max A. Nickerson (pers. comm.) informed us of wild caught Ozark Hellbenders (*C. alleganiensis bishopi*) eating smaller conspecifics from the North Fork of the White River in Missouri when they were placed in coolers under crowded conditions. On 12 March 1972 two Ozark Hellbender gilled larvae (9.5 and 13.0 cm TL) were cannibalized when placed in a cooler with 12 adults, between field collection and arrival at Nickerson's laboratory in Milwaukee, Wisconsin. In March 1977, three gilled larvae and eight adults were placed in a cooler which was primarily ice filled and transported to the St. Louis, Missouri, area overnight en route to Milwaukee. Nickerson's purpose of cooling these animals was that it might prevent cannibalism. However, all three larvae had been consumed before water and ice were drained and replaced upon arrival in St. Louis. All of these gilled larvae were reported by Nickerson et al. (2003. Southeast. Nat. 2:619–629), but his observation of their cannibalism was not mentioned in that publication.

Cryptobranchus a. alleganiensis feeds primarily on crayfish but also eats other aquatic food including snails, freshwater crabs, fish (Nickerson and May 1973, *op. cit.*), frogs (Smith 1907, *op. cit.*), and other salamander species (Alexander 1927. Buffalo Soc. Nat. Sci. 7:13–18; Hill 2011. Herpetol. Rev. 42:580; and pers. obs.). Hellbenders are opportunistic foragers and scavengers and are attracted to food by visual, chemical, and tactile stimuli (Nickerson and Mays 1973, *op. cit.*). It is possible that cannibalism in this species is a density-dependent behavior, primarily related to population size. Denser populations may provide adults with more opportunity to find younger, smaller hellbenders during foraging activities. All reported cases of hellbender cannibalism have come from dense populations (Smith 1907, *op. cit.*; Humphries et al. 2005, *op. cit.*) or in captive situations where they were crowded. Another possible contributing factor to hellbender cannibalism is that in denser populations less food may be available and cannibalism may increase due to fewer or more dispersed food resources. A similar explanation of this behavior has been suggested for other salamanders (Duellman and Trueb 1986. Biology of Amphibians. McGraw Hill, New York. 670 pp.). Our observations and reports from other field biologists working with hellbenders suggest that crayfish are less abundant in denser hellbender populations than in smaller or possibly declining hellbender populations.

We thank Max Nickerson for sharing his observations of cannibalism in hellbenders and for allowing us to publish them. Thanks to Brigid Trovan for examining our photographs. We also thank the many volunteers who worked with us throughout our hellbender surveys for their time and efforts.

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***GYRINOPHILUS PORPHYRITICUS* (Spring Salamander). DIET.** Brook Trout (*Salvelinus fontinalis*) can have strong predatory and competitive effects on the survival and growth of *Gyrinophilus porphyriticus* (Lowe et al. 2004. Ecol. Appl. 14:164–172; Resetarits 1995. Oikos 73:188–198). However, *G. porphyriticus* still co-occur with Brook Trout in many headwater streams of the Appalachians (Petranka 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C. 587 pp.). In this study, we report on the diets of larval and adult *G. porphyriticus* occurring within six headwater streams of New Hampshire, including three streams with Brook Trout and three streams without Brook Trout.

Salamanders were collected from six headwater streams at Hubbard Brook Experimental Forest, New Hampshire, USA (43.93333°N, 71.75000°W; datum NAD 83): Kineo Brook, Falls Brook, Zigzag West Brook, Bagley Trail Brook, Steep Brook, and Cushman Brook. Salamanders were collected from 200 m survey reaches in each stream by overturning all rocks of appropriate size. Salamanders were collected by dipnet from July–August 2012. Three streams had natural barriers that prevented fish from reaching the survey reaches, while survey reaches in the remaining streams were known to have fish (Warren et al. 2008. Northeast. Nat. 15:375–390). Fish presence or absence was confirmed in every stream by deploying minnow traps in survey stretches for 24 h.

Stomach contents of salamanders were collected using a non-lethal and non-anesthetic technique of stomach pumping (Cecala et al. 2007. J. Herpetol. 41:741–745). Before stomach flushing, all salamanders were weighed (± 0.1 g) and measured (SVL; nearest cm). Stomach contents were stored in 95% EtOH and examined under a dissecting scope. Prey items were