

et. al. 2022. *J. Herpetol.* 56:324–335). In another three historic reports, *N. maculosus* placed in aquaria without food were found to cannibalize, one instance resulting in both individuals dying (Hurter 1893. *Trans. Acad. Sci. St. Louis.* 6:251–261; Willey 1918. *Trans. Royal Soc. Canada* 12:95–104; Bennett 1937. *Can. Field Nat.* 51:17–20). Here, I report the first natural case of cannibalism in *N. maculosus*.

At ca. 0830 h on 1 October 2023, an adult female *N. maculosus* (256 mm total length, 112 g before regurgitation) was caught during a snorkeling survey in Trout Lake, Boulder Junction, Vilas County, Wisconsin, USA (46.02033°N, 89.66223°W; WGS 84). The individual's stomach was flushed using gastric lavage, and a juvenile *N. maculosus* (138 mm total length, 15 g) was regurgitated. The juvenile was eaten headfirst with only the front half of the body partially digested (Fig. 1), suggesting it was eaten the night prior. This observation, combined with the aforementioned studies, suggests that *N. maculosus* will commonly eat one another. Further investigations into why *N. maculosus* prey upon each other may help in conservation as the species is under pressure from many human-induced factors (McDaniel et al. 2009. *J. Great Lakes Res.* 35:182–189).

This research was permitted by the Wisconsin Department of Natural Resources (license #SRLN-23-12) and the University of Wisconsin-Madison IACUC (protocol A006669).

MASON J. POLENCHECK, Department of Bacteriology, University of Wisconsin-Madison, 1550 Linden Drive, Madison, Wisconsin 53706, USA; e-mail: mpolencheck@wisc.edu.

NECTURUS MACULOSUS (Mudpuppy). POLYMELIA. Abnormalities in amphibians can be a result of many different factors, including injuries, diseases, pollutants, and UV radiation (Lannoo 2008. *Malformed Frogs: The Collapse of Aquatic Ecosystems.* University of California Press, Berkeley, California. 270 pp.). One such abnormality that is most noticeable is polymelia, or the presence of a complete extra limb. Recent reports of polymelia in the Caudata include *Eurycea spelaea* (Grotto Salamander; Freiburger et al. 2019. *Herpetol. Rev.* 50:544–545), *Onychodactylus japonicus* (Japanese Clawed Salamander; Kambayashi et al. 2021. *Herpetol. Rev.* 52:818–819), and *Paramesotriton deloustali* (Vietnam Warty Newt; Tran et al. 2022. *Herpetol. Rev.* 53:281–282). Here, I report a case of polymelia in *Necturus maculosus*.

At ca. 1930 h on 15 February 2023, an adult male *N. maculosus* (230 mm total length, 72 g) was caught below the Germania Marsh Wildlife Area Dam, Germania, Marquette County, Wisconsin, USA (43.89397°N, 89.25956°W; WGS 84). The individual was found to have an extra limb on top of its right forelimb (Fig. 1). The extra limb was slightly shorter and thinner than the rest of the limbs, and all four digits were present. The extra forelimb did not appear to be functional when observed in a bucket or after release. The individual did have partial functionality of the lower limb, only being able to use the limb to push itself along and not being able to fully direct where it went. Despite the limited functionality of this set of limbs, it did not appear to have difficulty navigating when in the bucket or after release.

At ca. 1730 h on 25 June 2024, another adult *N. maculosus*, this individual a female (239 mm total length, 90 g), was caught during a snorkeling survey on Trout Lake, Boulder Junction, Vilas County, Wisconsin, USA (46.03168°N, 89.65421°W; WGS 84). This individual had an extra limb on its left forelimb (Fig. 1B). The extra limb was much shorter than the other limbs and had three short digits. The extra forelimb did not appear to be functional, but the lower limb was fully functional. This individual also did

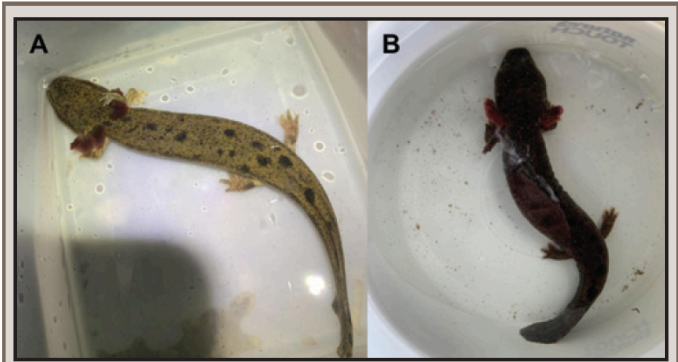


FIG. 1. Polymelia in *Necturus maculosus* on the right forelimb of an adult male from Marquette County, Wisconsin, USA (A) and on the left forelimb of an adult female from Vilas County, Wisconsin, USA (B).

not appear to have difficulty navigating when in the bucket or after release.

It is interesting to note that these two individuals represent populations from two distinct water basins and are separated by ca. 240 km, yet they both had the same deformity. How they each acquired the deformity is not clear but based on the prevalence in each locality (2.5% and 0.4%, respectively), they are both likely natural occurrences.

This research was permitted by the Wisconsin Department of Natural Resources (license #SRLN-23-12) and the University of Wisconsin-Madison IACUC (protocol A006669).

MASON J. POLENCHECK, Department of Bacteriology, University of Wisconsin-Madison, 1550 Linden Drive, Madison, Wisconsin 53706, USA; e-mail: mpolencheck@wisc.edu.

TARICHA SIERRAE (Sierra Newt). PREDATION. Natural history accounts for *Taricha sierrae* are rare. The species was only split off and recognized as a full species (listed previously as a subspecies of *T. torosa* [California Newt]) in 2007 (Kuchta 2007. *Herpetologica* 63:332–350). Following the elevation to species level, only Wiseman (2019. *Herpetol. Rev.* 50:96) and Tan and Wake (Mol. Phylogenet. Evol. 4:383–394) focused their work on this species. Therefore, any newly published accounts focusing on *T. sierrae* would not only have management implications, but would contribute to a better understanding of their natural history.

On 28 August 2023, while conducting lethal *Lithobates catesbeianus* (American Bullfrog) control activities in Sherlock Creek, Mariposa County, California (37.58770°N, 120.06276°W; WGS 84; 330 m elev.), to support sympatric *Rana boylei* (Foothill Yellow-legged Frog), we collected seven adult *L. catesbeianus*, all of which were analyzed for stomach contents in the field. Dissection resulted in the observation of numerous terrestrial and aquatic invertebrates, in addition to a single *T. sierrae* larva which had been consumed by one *L. catesbeianus* (Fig. 1). Historically, no significant threats to *T. sierrae* have been identified. However, our observation clearly demonstrates that invasive *L. catesbeianus* prey on the larvae of this native species.

Lithobates catesbeianus are known to negatively affect native species (Moyle 1973. *Copeia* 18–22). Closely related *Taricha* sp. along the California coast have suffered population declines due to habitat loss and alteration caused by human activity and also from introduced predatory mosquitofish and crayfish (Gamradt and Kats 1996. *Conserv. Biol.* 10:1155–1162). We, therefore, thought it critical to conduct removal efforts of *L. catesbeianus* to assist in the recovery of the federally listed *R. boylei* and *Ac-*

PHOTO BY JEFF A. ALVAREZ



FIG. 1. A larval *Taricha sierrae* removed from the gastrointestinal tract of a lethally collected female *Lithobates catesbeianus* from Sherlock Creek, Mariposa, County, California, August 2023.

tinemys marmorata (Northwestern Pond Turtle) within the Merced River watershed. By demonstrating that *L. catesbeianus* also preys upon *T. sierrae*, management actions, such as invasive species control, in areas with or without *R. boylei* and/or *A. marmorata* may be warranted.

JEFF JONES, U.S. Bureau of Land Management, 5152 Hillside Circle, El Dorado Hills, California 95762, USA (e-mail: jwjones@blm.gov); **JEFF A. ALVAREZ**, The Wildlife Project, P.O. Box 188888, Sacramento, California 95818, USA (e-mail: Jeff@thewildlifeproject.com).

TARICHA TOROSA (California Newt). OVIPOSITION SUBSTRATE. *Taricha torosa* is a medium-bodied, biphasic salamander endemic to the coastal region of California, USA. It reproduces in slow-moving or lentic water bodies during the late winter, spring, and summer (Storer 1925. A Synopsis of the Amphibia of California. University of California Publications in Zoology 27, Berkeley, California. 356 pp.). Males arrive at waterbodies first and females arrive later, ovipositing three to six spherical egg masses attached to submerged vegetation, sticks, or rocks, which are typically 8 to 10 cm below the surface of the water (Storer 1925, *op. cit.*; Miller and Robbins 1954. J. Exp. Zool. 125:415–446). These egg masses may take 14 to 52 days to hatch, depending on water temperature, during which time they are at risk of exposure if the water level decreases and the oviposition substrate is fixed (e.g., a rock; Miller and Robbins 1954, *op. cit.*).

During a routine exclusion fence check at 0945 h on 21 February 2024, I observed three *T. torosa* egg masses oviposited on a metal post supporting an overflow pipe, as well as one egg mass oviposited on a rope tied between the overflow pipe and the metal posts (Fig. 1). All egg masses were located inside a small holding pond adjacent to Briones Reservoir, Contra Costa County, California, USA (37.91888°N, 122.21356°W; WGS 84; 183 m elev.).



FIG. 1. *Taricha torosa* egg masses attached to a metal post and rope in Contra Costa County, California, USA.

The holding pond is ca. 20 m in length, 3 m in width, and 1 m in depth throughout. The egg masses were between 4 and 8 cm below the surface of the water, with no chance to avoid desiccation as the water level decreased. The bottom of the holding pond is covered by submerged vegetation, which ranges in height from a few cm to just under a meter. *Taricha torosa* egg masses were also observed fixed to vegetation throughout the holding pond, though they were primarily clustered in patches of taller submerged vegetation.

This is the first reported account of *T. torosa* ovipositing on technogenic structures; the metal post and rope. Female *T. torosa* typically leave the waterbody immediately after ovipositing, likely due to the frenetic breeding behaviors of the males (Miller and Robbins 1954, *op. cit.*). However, these structures potentially act as an ecological trap, preventing the egg masses from floating with the water level as they would if attached to submerged vegetation. This may lead to the desiccation of the egg masses. In 2023, I observed this holding pond decreasing in depth quickly following the cessation of rains, dropping several centimeters a week until it was less than 10 cm in depth. Other authors have found that amphibians are not able to properly assess the suitability of technogenic structures, which can lead to their entrapment and mortality (Alvarez et al. 2021. Herpetol. Rev. 52:274–278). The tradeoff between avoiding aggressive male *T. torosa* and choosing a suitable oviposition location is important for the reproductive fitness of *T. torosa*. The presence of unfamiliar structures may represent technogenic traps that may reduce their fitness.

JAKOB WOODALL, 2855 Telegraph Avenue, Berkeley, California, USA; e-mail: jwoodall@stillwatersci.com.

TRITURUS MARMORATUS (Marbled Newt). EGG LAYING. *Triturus marmoratus* is a European species inhabiting aquatic habitats in the Iberian Peninsula and France (Montori 2014. Tritón jaspeado – *Triturus marmoratus*. <http://www.vertebradosibericos.org/>, 30 May 2023). *Triturus marmoratus* usually wraps its eggs in submerged vegetation (Marco et al. 2001. Anim. Behav. 61:639–644). On 5 May 2023, at 1115 h, several *T. marmoratus* were observed under a rock near the shore of a pond located in the Alto da Groba, Spain (42.06880°N, 8.82734°W; WGS 84; 630 m elev.). Most were females with at least 60 eggs that had been laid on land (Fig. 1). There is no clear explanation for this aberrant