

degrees of geothermal influence may represent important breeding sites for some of YNP's amphibians (see Klaver et al. 2013. *West. N. Am. Nat.* 73:184–197).

We regard it noteworthy that additional examples of leucism in amphibians have been documented in northern YNP. Peterson and Patla (pers. comm.) found a metamorphosed *Ambystoma mavortium* in Rainy Lake on 12 July 1999. McMenamin (2009. *Yellowstone Sci.* 17:19–21) reported a pond population of *A. mavortium* in which almost every larva lacked nearly all pigmentation.

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SPHAEROTHECA ROLANDAE (Roland's Burrowing Frog) and **UPERODON GLOBULOSUS** (Indian Balloon Frog). **INTER-SPECIFIC AMPLEXUS**. Amplexus may vary within species geographically and temporally according to population density (Wells 2007. *The Ecology and Behavior of Amphibians*. University of Chicago Press, Chicago, Illinois. 1148 pp.). Amplexus normally occurs between a single male and female of the same species, but sometimes deviations can be seen such as multiple-individual amplexus (Ayres 2008. *North-West J. Zool.* 4:327–330; Mollov et al. 2010. *Biharean Biol.* 4:121–125; Oliveira et al. 2014. *Herpetol. Notes* 7:119–120). Heterospecific amplexus in anurans is well known from the New World (Marco and Lizana 2002. *Ethol. Ecol. Evol.* 14:1–8). The behavior may arise due to a lack of available females for male anurans, such that they will engage in amplexus with almost anything, from dead conspecifics (Ayers 2010. *Herpetol. Rev.* 41:192–193), the fingers of human observers, or inanimate objects (Streicher 2008. *Herpetol. Rev.* 39:75). However, the phenomenon is scarcely reported from India.

At 2330 h on 31 July 2018, during the recent biodiversity assessment program at North Orissa University Campus, Baripada, Odisha, India, we found a male *Sphaerotheca rolandae* mounted on a female *Uperodon globulosus* (21.9257°N, 86.7699°E; WGS 84) (Fig. 1). The male had gripped the female in axillary amplexus. However, the amplexus was not followed by release of gametes. *Uperodon globulosus* is a widely distributed species in India and neighboring regions in Bangladesh, Bhutan, and Nepal (Garg 2018. *Zootaxa* 4384:1:1–88). *Sphaerotheca rolandae* is a secretive species in the Eastern Ghats, spending most of its time underground. They are mostly seen at night, especially after rain (Deuti 2014. *Rec. Zool. Surv. India* 114:119–144). Although both are common species in Odisha and occur in similar habitats, interfamilial amplexus between these two species has not been reported (Dutta 1997. *Amphibians of India and Sri Lanka* [Checklist and Bibliography]. Odyssey Publishing House, Bhubaneswar, India. 342 pp.).

To date, only intraspecific and interspecific amplexus has been reported for these species (Bhattarai et al 2018. *IRCF Rept. & Amph.* 25: 29–30; Sayyed and Nale 2018. *IRCF Rept. & Amph.* 24:193–196) and the present observation is the first record of



FIG. 1. Interfamilial amplexus between a male Roland's Burrowing Frog (*Sphaerotheca rolandae*) and a female Indian Balloon Frog (*Uperodon globulosus*) from Odisha, India.

interfamilial amplexus between anurans in the Microhylidae and Dicroglossidae from India.

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TESTUDINES — TURTLES

ACTINEMYS MARMORATA (Northern Pond Turtle) and **ACTINEMYS PALLIDA** (Southwestern Pond Turtle). **SPECTACLE RETENTION**. The retention of eye caps, eye shields, or spectacles is not unusual in some reptilian groups. Snakes, particularly those housed in sub-optimal conditions for the species, may retain these spectacles for long periods, occasionally requiring intervention for removal (Kahn and Scott 2011. *The Merck Veterinary Manual*. Merck & Co., Whitehouse Station, New Jersey). Turtles, which do not retain spectacles as adults, do possess them while in the egg. These structures likely protect the eye while the turtle is developing, but under normal conditions, these spectacles are shed prior to hatching or during the hatching process.

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FIG. 1. Post-emergent *Actinemys* sp. with two retained spectacles. Presumed to be 1-day post-emergence.

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FIG. 2. Post-emergent *Actinemys* sp. shown post-self-release of a single spectacle, with the second spectacle retained.

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FIG. 3. Post-emergent *Actinemys* sp. immediately following the manual removal of the second spectacle. Both eyes appeared fully developed and functional.

We conducted a study that focused a mixed population of *Actinemys pallida* and *A. marmorata*—both are California, USA species of special concern—to gain knowledge on their

habitat use and to inform management decisions during future habitat enhancement projects (Thompson et al. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press, Berkeley, California. xv + 390 pp.). In 2016, we encountered post-emergent pond turtles (species undetermined) in the process of emerging from their nest. Upon close examination, one individual turtle showed opaque-white coverings across both eyes and was behaving as if blind (Fig. 1). An immediate literature search and request for information from experts on both *A. marmorata* and *A. pallida* revealed no indication that eye spectacles were expected to be observed on post-emergent turtles.

The post-emergent turtle was temporarily housed while a determination of the turtle's fate was received from resource agencies. During this containment, the post-emergent turtle was frequently observed intermittently raising a single front limb and rubbing the region around each eye socket, suggesting that it might be attempting to remove the structures. While being housed, one of the spectacles self-released, leaving an eye that appeared well developed and functional (Fig. 2).

Coincident with receiving direction from the California Department of Fish and Wildlife, the turtle was taken to our reptilian veterinarian (LMA). The turtle was closely examined, and it was determined that the retained spectacle would need to be manually removed. The post-emergent turtle was held in one hand, and using a moistened cotton swab, the surface of the spectacle was very lightly brushed from left to right, along the axis on the margin of the eyelid. A single sweep loosened and removed the spectacle, revealing an apparently fully developed and functional eye (Fig. 3). The second spectacle was collected and stored for later reference.

Following manual removal of the second spectacle, the turtle was monitored to determine that its vision allowed reasonable navigation within an enclosure made up of natural substrates. After a brief monitoring period, the turtle was released into Moorhen Marsh, Martinez, California, adjacent to its nesting site.

Retained spectacles in post-emergent or hatchling turtles are not often reported, likely because the understanding of spectacle formation and possible retention in post-emergent turtles is not well-understood by many field biologists. A contributing factor may be that turtles in the process of emerging from a nest are rarely observed. This observation is, to the authors' knowledge, the first report of the retention of spectacles in *A. marmorata* and/or *A. pallida*. This observation demonstrates that manual removal of spectacles by a trained veterinarian can restore vision in a post-emergent turtle that may otherwise be left without vision during a critical time in the phenology of newly emerged turtles.

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