about 50 m long, and has two entrances. It was excavated out of the naturally occurring siltstone and claystone as shelter from air raids during the Second World War. One of the entrances is not easily accessible due to a large pool of water blocking the entrance. Inside the cave, we observed many *S. strinatii* (more than 80 individuals). At the time of observation, it had not rained in the area for several months and we assumed that many of the *S. strinatii* had moved into the relatively damp cave environment to avoid the dryness of the surrounding woodlands. One *Rana italica* (Italian Stream Frog) and numerous invertebrates were also present (mostly Diptera: Limonidae).

Also discovered was a *Natrix helvetica sicula*, within a crevice in the cave. The *N. helvetica sicula* was about 25 m from the entrance of the cave in complete darkness. The next day, the *N. helvetica sicula* had moved to a rock ledge on the wall, ca. 1.2 m above the cave floor, close to a *S. strinatii* (Fig. 1A). An hour later the *N. helvetica sicula* was swallowing a *S. strinatii* (Fig. 1B), presumably the same individual, inside a crevice just below the previous ledge.

This is the first documented predation of *S. strinatii* by a *N. helvetica sicula* inside a cave. Despite the observations of Salvidio et al. (2017, *op. cit.*) that caves provide a lower predation risk for *S. strinatii* than woodlands, the salamanders may not always be the top predator in caves (Salvidio et al. 2020. Diversity 12:17).

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***TARICHA TOROSA* (California Newt). MISDIRECTED GROUP AMPLEXUS.** Misdirected amplexus, sometimes referred to as Davian behavior or necrogamy, is when a living organism attempts to copulate with a dead conspecific. This behavior is widely reported in anurans but for caudates the only reports are for *Nothopthalmus viridescens* (Pitt et al. 2011. Herpetol. Rev. 42:258; Pintanel et al. 2021. Neotrop. Biod. 7:53–56). In anurans, misdirected amplexus with a dead female can represent a valid reproductive strategy, as the males can squeeze out the eggs to fertilize them (Izzo et al. 2012. J. Nat. Hist. 45:2961–2967; Groffen et al. 2019. Herpetol. Notes 12:43–44). For some caudates, however, this behavior represents an ecological trap in that no successful fertilization is possible due to the female needing to be alive to uptake the spermatophore.

Taricha torosa is a temporally limited scramble breeder (Wells 2007. The Ecology and Behavior of Amphibians, University of Chicago Press, Chicago, Illinois. 1148 pp.). Although similar to scramble-breeding anurans (Wells 2007, *op. cit.*) in the urgency to breed, a male *T. torosa* must complete courtship before his spermatophores are deposited for a receptive female. However, since the first male to mate with a female normally fertilizes the largest portion of her eggs, reproductive fitness consequences may drive male newts to amplex other similar sized caudates, regardless of sex or species, to facilitate successful reproduction. Alvarez (2011. Herpetol. Rev. 42:408–409) hypothesized a similar breeding pressure driving *Anaxyrus boreas* (Western Toad) to amplex with any appropriately sized nearby object. The *T. torosa* breeding season starts first with the arrival of males to a water body, followed later by the females. Attracted by their movement, male *T. torosa* will engage conspecifics entering the water near them, including other males, and several males may attempt amplexus with one individual (Davis and Twitty 1964. Copeia. 4:601–610). Here, we describe a novel situation in which an adult *T. torosa* was observed in amplexus with a mortally injured and

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FIG. 1. A group of three male *Taricha torosa* in a "breeding ball" around an unresponsive and mortally-injured female *T. torosa* in California, USA.

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FIG. 2. Mortally wounded by a crushing bite to the head, a female *Taricha torosa* is amplexed by a male, with another male attempting to dislodge him. Observation took place in California, USA.

unresponsive conspecific female, while two other conspecific males attempted to either remove the male in amplexus or likewise engage in amplexus with the unresponsive female.

At 1957 h on 4 January 2022, in Bonnie's Creek on the Mitsui Ranch in Sonoma County, California, USA (38.33063°N, 122.58178°W; WGS 84; 660 m elev.), we observed a group of three male *T. torosa* engaging in amplexus with an unresponsive, mortally injured female *T. torosa* (80 mm SVL, 170 mm total length; Fig. 1). Upstream, in the same pool, was another male *T. torosa* that suffered crushing bite wounds to the head. Based on the carnassial pattern impressed in the skin and skulls (Fig. 2), the bites appeared to have been inflicted by a *Procyon lotor* (Raccoon). A visual inspection the following morning revealed a rear-foot print of *P. lotor* in the upper section of the pool. Although they were not dead, both newts were unresponsive when initially observed and collected. This observation represents the first report of misdirected amplexus in *T. torosa* and the first time multiple conspecific males were involved in such an event. Misdirected amplexus, in this case, represents a waste of energy as the unresponsive female was unable to accept the male courtship attempts and was dying (Ayres 2010. Herpetol. Rev. 41:192–193). It can also increase the vulnerability of the participants to predation through increasing the size of the prey unit and decreasing the mobility of the amplecting individuals (Magnhagen 2003. Trends Ecol. Evol. 6:183–186).

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***TYLOTOTRITON VERRUCOSUS* (Crocodile Newt). CLAM TRANSPORTATION.** It has been suggested that amphibians, as well as birds and insects, contribute to the dispersal of freshwater bivalves (Kew 1893. The Dispersal of Shells. Kengan Paul, Trench, Trübner & Company, London, UK. 291 pp.). Observations of land transportation of pea clams by salamanders have been reported from Europe, Canada, and Japan (reviewed in Terui and Akiyama 2021. Venus 79:38–43). Here, we report a *Tylototriton verrucosus* transporting a clam belonging to the family Sphaeriidae.

Tylototriton is a genus of salamandrids consisting of 34 species distributed in south and southeast Asia (Frost 2022. Amphibian Species of the World: an Online Reference, Version 6.1, https://amphibiansoftheworld.amnh.org, 16 Feb 2022), inhabiting inland waterbodies where pea clams are common (Dubois and Raffaëlli 2009. Alytes 26:1–85). The *T. verrucosus* was found in a marsh in Yuejiazhai, Yunnan Province, China (24.6004°N, 98.0962°E; WGS 84; 1645 m elev.), on 26 June 2013, with one sphaeriid clam attached to the second finger of the left hand (Fig. 1A). The *T. verrucosus* was an adult male and identified based on external morphology. The total length of the *T. verrucosus* was 133 mm, and the toe was deeply indented by the shell. As with the present case, attachment of clams has been reported to cause finger injuries in amphibians (Wood et al. 2008. Amphibia-Reptilia 29:457–462). The sphaeriid was identified as belonging to the genus *Sphaerium* by the large shell (length = 5.5 mm; height = 4.7 mm; width = 3.2 mm) and the central umbo (Fig. 1B) following Korniushin and Glaubrecht (2002. Zool. Scr. 31:415–459) and Lee and Foighil (2003. Zool. J. Linn. Soc-Lond. 137:245–260). No embryos were found in the brood pouch of the clam. After observation and measurement, the *T. verrucosus* was released back to the marsh, and the clam was deposited as a voucher specimen in the Kunming Institute of Zoology, Chinese Academy of Sciences (KIZ uncataloged).

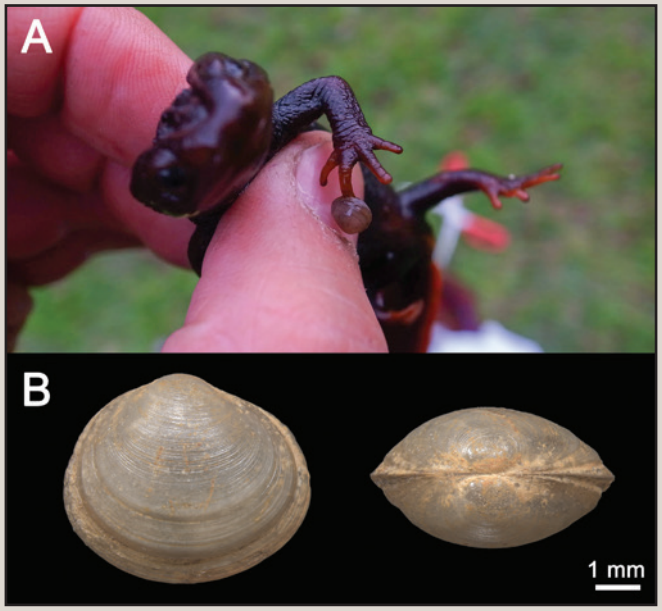

FIG. 1. A) *Tylototriton verrucosus* from Yunnan Province, China with an attached *Sphaerium* sp. clam; B) right valve and apex of the *Sphaerium* sp. clam.

Pea clams have been known to migrate with the newts *Lissotriton helveticus* and *Mesotriton alpestris* (Wood 2008, *op. cit.*), but to our knowledge, this is the first record of land transportation of a *Sphaerium* sp. by *T. verrucosus*. It is also the first report for China and for a tropical area. The transportation of a single *Sphaerium* sp. to a new habitat, as reported here, may contribute to breeding activity at the new habitat because members of this family are capable of self-fertilization (Thomas 1959. Nautilus 72:131–140).

This study was conducted under our MoU and agreements between Kyoto University and the Chinese Academy of Sciences.

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***URSPELERPES BRUCEI* (Patch-nosed Salamander). SEX DETERMINATION.** The sex of many salamanders can often be determined from external sexually dimorphic characters (e.g., nasal cirri, swollen cloacae, sexual size dimorphism, etc.), though these traits are usually exclusive to adult individuals and only apparent within the specific breeding season of a taxon.