FIG. 3. Female *Eurycea rathbuni* cannibal from Primer's Fissure, Texas, USA attempting to consume her second documented conspecific. The salamander was extracted from her mouth and lived.

in the tank together. In the afternoon of 15 August 2018, one of these five *E. rathbuni* was discovered in the process of consuming another salamander. Approximately 1 cm of the victim's tail was protruding from the cannibal's mouth (Fig. 1). The victim was extricated from the cannibal's mouth, and it was noted that the head appeared to have already been mostly digested.

Both salamanders involved were identified based on their elastomer tattoos. The partially digested salamander was identified as ER019 and the cannibal was identified as ER015. Subject ER019 was preserved in ethanol after measurements and photos were taken of both salamanders (Fig. 2). A thorough search of the tub was undertaken, and it was discovered that another salamander from the same tub, ER020, was missing. A thorough search of the building turned up no evidence of ER020, and it was assumed that this salamander was also a victim of cannibalism. The cannibal and the remaining two living salamanders from that tub were immediately moved into individual tanks. The SVL of the cannibal was 15.68 mm greater than its confirmed victim.

In addition to the observations of cannibalism among captive salamanders, we observed one incidence of cannibalism in the wild. A large female salamander captured in a trap in Primer's Fissure on 1 April 2019 was brought back to the zoo. While collecting morphometric data, it regurgitated a smaller conspecific. The cannibal's SVL was 74.24 mm, and the victim's SVL was 34.22 mm (a difference of 40.02 mm). The sex of the victim was unknown.

On 8 May 2020, the above cannibal salamander was grouped with 1.2.1 other *E. rathbuni* for breeding. Feeding was increased to three times per week. On 8 June 2020, the known cannibal salamander was found with the head and shoulders of another smaller female (30.27 mm SVL) in her mouth (Fig. 3). The animals were netted, and the smaller female was released alive. All salamanders were then housed separately.

Factors that may trigger cannibalism include resource scarcity, density, and opportunity. Cannibalism may be a widespread occurrence in this species, given its life history (long lifespan, slow growth, low metabolism, and low reproductive rate) and the stable, low energy environment in which it occurs. Institutions that house this species should take care to prevent cannibalism from occurring, including housing only salamanders of similar size together, maintaining low tank densities, and ensuring that adequate food is always provided.

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CROCODYLIA — CROCODILIANS

***CAIMAN YACARE* (Yacare Caiman). TRIPLETS.** The Broad-snouted Caiman (*Caiman latirostris*) and Yacare Caiman (*Caiman yacare*) are the two crocodilian species that inhabit Argentina (Prado et al. 2012. Cuad. Herpetol. 26. Suppl 1:403–410). They can be easily differentiated based on species-specific morphological features (e.g., cranial and nuchal structures). These two species are broadly sympatric throughout their distribution in Argentina, although the *C. latirostris* appears to be allopatric across a larger area.

In Argentina, ranching occurs for both caiman species, with wild, field-collected eggs placed into artificial incubators until hatching. Once hatched, caiman are raised in captivity until they reach 1.2 m in total length, at which point they are harvested for their skins and meat; additionally, some individuals are released back to the wild. Results from these monitoring programs have indicated that the harvest of eggs from both species is sustainable, with populations continuing to increase over time (Larriera et al. 2008. Publicación Asociación de Amigos de Doñana 18:141–180). Argentinian ranching programs are recognized for their contribution to the conservation and biological knowledge base of both species (Villamarín et al. 2021. *In* Zucoloto et al. [eds.], Conservation Genetics of New World Crocodilians, pp. 1–30. Springer, Cham).

An important part of the program involves recording nesting details (e.g., GPS coordinates, number of eggs) and incubation and hatching data (e.g., incubation temperatures, time taken to hatch). After eggs arrive from the field, they are measured (length and width) and placed into plastic incubation containers inside an incubator. Most eggs from the same nest are usually of a similar size, unless they contain more than one embryo.

Although generally uncommon, multiple offspring hatched from the same egg has been reported for several oviparous reptiles. Twinning is more common than triplets, with very few cases of triplets documented in reptiles (Krauss and Horn 2004. Reptiles Austral. 1(4):14–15). Twinning has been reported in snakes (Marion 1980. Kansas Acad. Sci. 83:98–100), lizards (Hartdegen and Bayless 1999. Herpetol. Rev. 30:141; Mendyk 2007. Biawak 1:26–28; Leaché et al. 2013. Genome Biol. Evol. 5:2410–2419), turtles (Tucker and Janzen 1997. Copeia 1997:166–173; Cooper 2009. Introducción a la Medicina Forense Veterinaria Comparada México: Ed. Acribia; Piovano et al. 2011. Folia Zool. 60:159–166) and crocodilians (Webb et al. 1998. Crocodiles of Australia. New Holland Publishers,

Fig. 1. *Caiman yacare* eggs of varying sizes from the same nest. Red line = 10 mm.

Australia; Platt et al. 2011. Zoo Biol. 30:1–12). Here, we report a case of triplets in *C. yacare*.

On 31 January 2020, 26 eggs were collected from a wild *C. yacare* nest as part of the egg ranching program in Banco Payagua, Formosa, Argentina (26.7069°S, 58.3363°W). Seven of these eggs were of an unusual size and elongated in shape (Fig. 1). The eggs were artificially incubated at 30–32°C in a moist vermiculite substrate. After 32 d, 25 hatchlings emerged from 22 of the 26 eggs. Twenty eggs produced single hatchlings, whereas one egg produced triplets, and another egg produced twins. The remaining four eggs did not hatch, but one of them also contained three incompletely developed embryos. Hatching success (# of hatchings / # of eggs collected and incubated) for this nest was 0.91. The eggs that contained triplets were much larger than those that contained single embryos, but not the egg containing twins. The hatchling triplets were also noticeably smaller than single hatchlings, although measurements were not taken.

As it is a seemingly rare occurrence, limited information is available on the hatching of multiple offspring from single eggs in oviparous species. Unless these events occur in captivity, it will be difficult to determine how often this phenomenon occurs in a species because it cannot easily be observed in nature. As far as we can determine, this is the first record of triplets in a crocodilian species.

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SQUAMATA — LIZARDS

***GARTHIA GAUDICHAUDII* (Chilean Marked Gecko). INCUBATION PERIOD.** *Garthia* is a genus of relatively small (<40 mm SVL) nocturnal geckos (Infraorder Gekkota) and the only genus of reptile endemic to Chile. It is composed of two species: *G. gaudichaudii* and *G. penai* (Demangel 2016. Reptiles en Chile. Fauna Nativa Ediciones. 619 pp.). *Garthia gaudichaudii*, the largest species (39 mm SVL), inhabits semiarid coastal environments of central-northern Chile (Demangel 2016, *op. cit.*). The reproductive biology of this species is scarcely known and is based on anecdotal observations. Females can lay one or two semi-spherical calcareous eggs in communal clutches, which can be found under boulders, rocks, or vegetation (Donoso-Barros 1966. Reptiles de Chile. Ediciones Universidad de Chile. 458 + CXLVI pp.). The eggs are laid between October and December (austral spring) and hatching begins in March (end of the austral summer; Donoso-Barros 1966, *op. cit.*). Under captive conditions oviposition of a single egg was observed during November and the hatching of a juvenile; however, there is no information on the time to hatching (Marquet et al. 1990. J. Herpetol. 24:431–434). Here, we report the incubation period of an egg of *G. gaudichaudii* under laboratory conditions.

On 13 November 2019 during an ongoing study of *G. gaudichaudii* near the coastal area south from the town of Tongoy, Coquimbo Region, Chile (30.3045°S, 71.5101°W; WGS 84; 60 m asl), we manually captured an adult female (32 mm SVL) found under a boulder. The female was transported in a plastic box to the laboratory, located in Santiago, Chile, and upon arrival at the laboratory it was determined to be gravid and relocated to an individual plastic box (20 x 15 x 15 cm) containing an absorbent paper as substrate, a folded piece of cardboard as shelter, and a 6 ml water container. Water was provided ad libitum, and the female was fed three times per week with flour beetle larvae (*Tribolium* sp.) that were dusted with vitamins and calcium (SERA Reptimineral C). The box was placed in an indoor vivarium with natural light from a nearby window and continuous ventilation, with conditions mimicking those recorded in the field site during normal spring days, photoperiod 14:10 h light:dark, and temperatures ranging between 24° and 30°C. Additionally, an infrared light (150 W) was provided.

On 21 November 2019, the female laid one egg. Immediately after, the female was placed in a new individual box to prevent potential damage to the egg. The egg was left undisturbed for the remaining incubation period and visually inspected daily. Temperature during the entire incubation period ranged from 27–32°C. On 4 February 2020 (76 days post-oviposition), the hatchling was observed for the first time (Fig. 1). Its body