

measured on each skink to the nearest mm. A small slit was made on the left side of the abdomen and the left testis was removed from the male and the left ovary was removed from the females for histological examination. Oviductal eggs were counted and measured in situ. No histological examination was performed on them. Removed gonads were embedded in paraffin, sections were cut at 5  $\mu$ m, and stained by Harris hematoxylin followed by eosin counterstain. Histology slides were deposited at BPBM.

The male exhibited spermiogenesis in which the lumina of the seminiferous tubules were lined by sperm or metamorphosing spermatids. Tubules of the epididymides were packed with sperm. Both females each contained two oviductal eggs (6  $\times$  10 mm each). One follicle in the ovary of both females was undergoing vitellogenesis (yolk deposition) as evidenced by a ring of basophilic yolk granules on the inner periphery of each follicle. These observations indicate *C. aramia* produces clutches of two eggs and can produce a second clutch, later, in the same period of reproduction. My data is the first information on *C. aramia* egg production. Examination of *C. aramia* from additional months are needed to clarify all events in the reproductive cycle.

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**CARLIA RHOMBOIDALIS (Blue-throated Rainbow-skink). ENDOPARASITES.** *Carlia rhomboidalis* is known to occur in mesic habitats in northeastern Queensland, Australia (Cogger 2014. Reptiles & Amphibians of Australia. 7<sup>th</sup> edition. CSIRO Publishing, Collingwood, Victoria, Australia. 1033 pp.). There is a report of the plasmodiid, *Fallisia copemani* (Paperna and Landau 1990. Ann. Parasitol. Hum. Comp. 65:16–21) and the alveolate *Isospora carliae* (Apicomplexa: Eimeriidae) in *C. rhomboidalis* (Paperna 2006. Folia Parasitol. 53:249–254), but we know of no helminths reported for *C. rhomboidalis* and herein initiate a helminth list for this species.

We examined ten *C. rhomboidalis* (mean SVL: 47.4 mm  $\pm$  5.5 SD, range: 41–56 mm) collected in 1971 from Queensland, Australia (20.9176°S, 142.7028°E; WGS 84) and deposited in the University of Michigan, Museum of Zoology (UMMZ) as (UMMZ 132576, 132576A, 132576B, 132578, 132578A–C, 203010, 203010A, 203054). The specimens had been preserved in 10% formalin and stored in 70% ethanol. The body cavity was opened by a longitudinal incision and the digestive tract was removed and opened. The esophagus, stomach, small intestine, and large intestine were examined for helminths under a dissecting microscope. Each helminth was placed in a drop of lactophenol on a glass slide, a cover slip was added and identification was made after study under a compound microscope. Identifications were made utilizing Anderson et al. (2009. Keys to the Nematode Parasites of Vertebrates, Archival Volume, CAB International, Wallingford, Oxfordshire, United Kingdom. 463 pp.), Gibbons (2010. Keys to the Nematode Parasites of Vertebrates, Supplementary Volume. CAB International, Wallingford, Oxfordshire, United Kingdom. 416 pp.) and for *Pseudorictularia dipsarilis*, Owen and Moorhouse (1980. Bul. Mus. Nat. d'hist. Nat. Ser. 4, 2:1013–1017).

Found were 1, 1, 2, *Abbreviata* sp. (larvae encysted in cysts) in the stomach wall of UMMZ 132576, 132578, and 20310, respectively; 1 *Oswaldocruzia* sp. in the small intestine of UMMZ 203054; 16 Rictulariidae gen. sp. (larvae in cysts) in the stomach wall of UMMZ 132576; and 1 *P. dipsarilis* in the small intestine of UMMZ 203054.

*Abbreviata* sp. larvae are common in the stomachs of Australian reptiles (Jones 1995. J. Wild. Dis. 31:299–306) where they serve as paratenic (transport) hosts until eaten by a carnivore in which development to the adult form occurs (King and Jones 2016. Int. J. Parasitol. Parasites Wildl. 5:258–262. *Oswaldocruzia* sp. are found in the intestines of amphibians and reptiles worldwide (Anderson. 2000. Nematode Parasites of Vertebrates: Their Development and Transmission. Second Edition. CABI Publishing, Oxfordshire, United Kingdom. 650 pp.). Infection is thought to be direct. Adults of Rictulariidae are known from mammals (Anderson 2000, *op. cit.*); they are best considered paratenic hosts. *Pseudorictularia dipsarilis* is previously known from frogs, lizards, and the mammal *Dasyurus hallucatus* from Australia and Papua New Guinea (Burseley et al. 2008. Comp. Parasitol. 75:33–48).

Voucher helminths were deposited in the Harold W. Manter Parasitology Laboratory (HWML), The University of Nebraska, Lincoln, USA as *Abbreviata* sp. (HWML 110962); *Oswaldocruzia* sp. (HWML 110960); *Pseudorictularia dipsarilis* (HWML 110961); Rictulariidae gen. sp. (HWML 110963). *Abbreviata* sp., *Oswaldocruzia* sp., *Pseudorictularia dipsarilis*, and Rictulariidae gen. sp. in *C. rhomboidalis* are new host records.

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**CONTOMASTIX SERRANA. HABITAT.** *Contomastix serrana* is a lizard mainly distributed in highlands of northern Argentina, in Córdoba, San Luis, and Santiago del Estero provinces (Ceí 1993. Reptiles del Noroeste, Nordeste y Este de la Argentina. Mus. Reg. Sci. Nat. Torino, Monogr. 949 pp.). It was also reported in lowlands in Chaco Province (Acosta et al. 2015. Cuad. Herpetol. 29:173–174) in a degraded Semiarid Chaco forest. Herein, we report three records in new habitats for *C. serrana* in lowlands in the Arid Chaco.

An adult male (LECOH 731: 61.1 mm SVL, 170.1 mm TL) was collected on 28 November 2004 in Chancaní, Córdoba, Argentina (31.3653°S, 65.4858°W; WGS 84; 341 m elev.). The specimen was found in a dense grassland (ca. 1.5 m height) produced in 1995 by a wildfire that burned a former Arid Chaco forest. On another occasion, two females were collected near Lucio V. Mansilla, Córdoba, Argentina. Vegetation changes from a typical Chaco forest (with *Aspidosperma quebracho-blanco*, *Prosopis alba*, and *Parkinsonia praecox*, among others) to a non-vegetated salt plain. The transition is a halophytic shrubland dominated by *Heterostachys ritteriana* and *Allenrolfea patagonica*, mixed with some forest elements. Soil gets increasingly salty from the forest to the salt plain. The first specimen was an adult female (LECOH 650: 60 mm SVL, 180 mm TL) collected on 12 December 2015 in the transition between the Arid Chaco forest and the salt plain (29.7522°S, 64.7751°W; WGS 84; 182 m elev.). The second specimen was an adult gravid female (LECOH 689: 66 mm SVL, 193 mm TL) collected on 28 January 2016 in Arid Chaco forest habitat (29.7524°S, 64.7764°W; WGS 84; 181 m elev.).

Two more adult individuals were captured (but not collected) in Las Cañas, near San José de Las Salinas. Both, a male (64.6 mm SVL, 181 mm TL) and a female (55.7 mm SVL, 157 mm TL), were

captured in Arid Chaco forest habitat (30.11454°S, 64.71127°W; WGS 84; 183 m elev.). It is worth noting that all reported specimens were found inside or surrounding two different protected areas: Chancaní Provincial Natural Park and Natural Forest Reserve and Salinas Grandes Multiple Use Reserve.

Specimens collected are deposited in the Collection of Laboratorio de Ecología y Conservación de la Herpetofauna of Centro de Zoología Aplicada, Universidad Nacional de Córdoba, Argentina. Scientific collecting permits for collecting lizards were issued (to NP) by Secretaría de Ambiente de la Provincia de Córdoba. We acknowledge CONICET (PIP-1120150100566), Rufford Small Grants (projects 18820-1,2), and Maestría en Manejo de Vida Silvestre (UNC) for financial support.

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***ELGARIA MULTICARINATA* (Southern Alligator Lizard). ELEVATION.**

*Elgaria multicarinata* is found from northern Baja California, Mexico, north through much of California and western Oregon, and into southern Washington. McGinnis and Stebbins (2018. Peterson Field Guide to Western Reptiles and Amphibians. Fourth Edition. Houghton Mifflin Harcourt, Boston, Massachusetts. 560 pp.) state that this species can be found to elevations over 1524 m (5000 ft) whereas Lemm (2006. Field Guide to Amphibians and Reptiles of the San Diego Region. University of California Press, Berkeley, California. 326 pp.) provides more specific information stating they can reach 2286 m (7500 ft) in elevation. The high elevation record in Lemm (2006, *op. cit.*) is generally consistent with museum vouchers and citizen science observations, which provide only a handful of records above 2286 m (7500 ft). Most of these high elevation observations have been made in the vicinity of Big Bear Lake in the San Bernardino Mountains, San Bernardino County, California, USA. D. Goodward documented an *E. multicarinata* at Missed Spring, which is southeast of Big Bear Lake, at 2438 m in elevation (8000 ft; iNaturalist 28010334). One of us (GBP) observed individuals at 2385 m (7825 ft; iNaturalist 6717728) and 2309 m (7575 ft; iNaturalist 6717707) elevation, north of Big Bear Lake along the Pacific Crest Trail, and individuals have also been observed on the north slope of Sugarloaf Mountain on the south side of Big Bear Lake at 2353 m (7720 ft; iNaturalist 15233409) and 2365 m (7760 ft; iNaturalist 15741470). It is likely that *E. multicarinata* also inhabits areas above 2286 m (7500 ft) elsewhere in the Transverse and Peninsular Ranges, and that the high number of records around Big Bear Lake reflects the higher density of trails in that region. Remarkably, outside of the Peninsular and Transverse Ranges, J. Lee documented an *E. multicarinata* at 2552 m (8374 ft; iNaturalist 26617379) on 7 June 2019 at Whitney Portal, on the eastern slope of the Sierra Nevada, Inyo County, California.

On 11 June 2019 at 1458 h, one of us (JEE) observed an *E. multicarinata webbii* at 3139 m in elevation (10,300 ft; iNaturalist 28372867) basking among large granite boulders on the summit ridge of Marion Mountain, Riverside County, immediately west of the peak (33.79592°N, 116.68808°W; WGS 84). Marion Mountain sits along the south ridge of Mt. San Jacinto and is the southernmost 10,000+ ft peak in California. The adult lizard was less than 30 cm from a snow drift, which abutted and partially



FIG. 1. *Elgaria multicarinata* basking adjacent to snow drifts near the summit of Marion Mountain at an elevation of 3139 m in the San Jacinto Mountains, Riverside County, California, USA.

surrounded the boulder on which it was basking (Fig. 1). This patch of snow was ca. 1 m deep; snow was fully covering the north slope of Marion Mountain at the time with other patches of snow on the summit and upper reaches of the mountain's southern face. Summer snow cover on the mountain was greater in 2019 than in typical years because of high winter snowfall and relatively low temperatures in May and June that limited snow melt. This observation provides a substantial increase to the high elevation record for this species. Further, this record is well above the previous high elevation record for the San Jacinto Mountains which was only 4.5 km to the southwest, but over 1000 m lower in elevation at 2052 m (6732 ft; California Academy of Sciences [CAS] 228318).

This Marion Mountain observation as well as the new Inyo County observation suggest that in some areas of their range, *E. multicarinata* experience extreme cold and winters with prolonged snow cover. This note also demonstrates the exceptional value of citizen science observations for documenting species' distributions; although museum databases were also scrutinized, nearly all the high elevation records referenced here were made in the last few years and reported on the citizen science platform iNaturalist.

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