

SQUAMATA — LIZARDS

AMEIVA BIFRONTATA (Cope's Ameiva). ENDOPARASITES.

Ameiva bifrontata is known from northern Peru, Colombia, Venezuela, Testigo Island, Dutch Leeward Islands, Margarita Island, Aruba, La Tortuga Island (Uetz and Hallermann 2012. The Reptile Database, www.reptile-database.org, accessed 30 January, 2012). To our knowledge there are no reports of helminths from *A. bifrontata*. The purpose of this note is to establish the initial helminth list for *A. bifrontata*.

Eighteen *A. bifrontata* were examined, collected in November 1968 from Bellavista, (5.6622°S, 78.6756°W, WGS84, elev. 195 m), Cajamarca Region, Peru and deposited in the herpetology collection of the Natural History Museum of Los Angeles County (LACM) as: LACM 76864, 76865, 76868, 76869, 76871, 76862, 76874, 76877, 76878, 76880–76885, 76887–76889. A left lateral incision was made through the body wall and the digestive tract was removed. The esophagus, stomach, small and large intestines were opened longitudinally and searched for helminths utilizing a dissecting microscope. The body cavity was also searched. Helminths were cleared in lactophenol, placed on a microscope slide, coverslipped and studied utilizing a compound microscope.

Found were one species of Nematoda, *Parapharyngodon riojensis* (prevalence, number infected/number examined $\times 100 = 56\%$, mean intensity, mean number infected lizards $= 2.2 \pm 1.4$ SD, range = 1–4), and one oligacanthorhynchid cystacanth (Acanthocephala) (prevalence = 6%). Helminths were deposited in the United States National Parasite Collection, Beltsville, Maryland as *P. riojensis* (USNPC 105267) and oligacanthorhynchid cystacanth (USNPC 105268).

Parapharyngodon riojensis was described from *Phymaturus punae* from the province of La Rioja, Argentina by Ramallo et al. (2002. J. Parasitol. 88:979–982) and has been reported from *Liolaemus buergeri* and *Phymaturus palluma* from Argentina (Goldberg et al. 2004. Comp. Parasitol. 71:208–214) as well as *Liolaemus boulengeri*, *L. rothi*, *L. umbrifer*, *Phymaturus antofagastensis* and *P. zapalensis* also from Argentina (O'Grady and Dearing. 2006. Oecologia 150:355–361). Two South American species of *Parapharyngodon* (*P. riojensis* and *P. senisfaciecaudus*) have been described in which the ovaries are postesophageal. These two species are separated on the basis of egg morphology: egg shell thin and smooth in *P. senisfaciecaudus*, punctate and thick in *P. riojensis*. Our specimens possessed postesophageal ovaries and eggs with thick, punctate shells. Oligacanthorhynchidae is the only acanthocephalan family to possess robust, pseudoannulate cystacanths, an obvious character of our cystacanth specimen. Acanthocephalans utilize an arthropod intermediate host in which the cystacanth larval stage develops (Kennedy 2006. Ecology of the Acanthocephala. Cambridge University Press, New York. 249 pp.). Since development to the adult form does not occur in *A. bifrontata*, it is best considered as a paratenic (= transport) host. *Ameiva bifrontata* represents a new host record for *Parapharyngodon riojensis* and oligacanthorhynchid cystacanths. Peru is a new locality record for *P. riojensis*; however, undetermined cystacanths have been reported from Peru (Burse et al. 2001 Comp. Parasitol. 68:21–35).

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ANOLIS SAGREI (Brown Anole). SAUROPHAGY. *Anolis sagrei* is native to Cuba, the Isla de Juventud, the Bahamas, Swan Island, the Islas de la Bahia, Honduras (Schwartz and Henderson 1991. Amphibians and Reptiles of the West Indies: Descriptions, Distributions, and Natural History. University of Florida Press, Gainesville, Florida. xvi + 720 pp.). It also has been introduced to many parts of the world (Kraus 2009. Alien Reptiles and Amphibians: A Scientific Compendium and Analysis. Springer, [Dordrecht, Netherlands], 563 pp.), including Florida as early as 1887 (Garman 1887. Bulletin of the Essex Institute 19:1–29). In Florida, *Anolis sagrei* is known to consume mostly insects (Meshaka et al. 2004. The Exotic Amphibians and Reptiles of Florida. Krieger Publ. Co. Malabar, Florida. 166 pp.), but it has also been documented consuming lizards such as smaller conspecifics (Cochran 1989. Herpetol. Rev. 20:70) and native Green Anoles (*A. carolinensis*) (Campbell and Gerber 1996. Herpetol. Rev. 27:200). In this note, we report *A. sagrei* preying upon a nonindigenous Red-sided Curly-tailed Lizard (*Leiocephalus schreibersii*) in Florida.

On 14 October 2011 at 1614 h, we observed an adult male *Anolis sagrei* at 24305 SW 142 Avenue, Homestead, Miami-Dade County, Florida (25.540744°N, 80.420585°W, WGS84; elev. 4 m).



FIG. 1. *Anolis sagrei* consuming *Leiocephalus schreibersii* in Florida.

This anole was ca. 1 m above ground on a wooden post facing downward and had a neonate *Leiocephalus schreibersii* in its mouth (Fig. 1). The event was observed for ca. 4–5 min, at which time concluded with the *A. sagrei* consuming the *L. schreibersii*. Photographic vouchers were deposited in the Florida Museum of Natural History (UF 166507). This is the first known predation event on *L. schreibersii* in Florida, but also might provide an example for invasional meltdown by which short-term observations of facilitatory interactions between two species might have long-term consequences (i.e., enhancing the impact and/or probability of establishment and spread of the other) (Simberloff and Von Holle 1999. *Bio. Invasions* 1:21–32), as Florida has the most introduced and established herpetofaunal species in the world (Krysko et al. 2011. *Zootaxa* 3028:1–64).

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ASPIDOSCELIS NEOTESSELATA (Colorado Checkered Whiptail). FRAGMENTED HABITAT. Valco State Wildlife Area (38.259361°N, 104.705824°W, WGS84; elev. 1445 m), managed by the Colorado Division of Wildlife, is immediately adjacent to the north side of Colorado Hwy 96 (i.e., Thatcher Avenue) in the western metropolitan area of the City of Pueblo, Pueblo Co., Colorado, USA. This small gem of reclamation, commonly known as Valco Ponds, receives numerous visitors in the modes of short rest stops from Hwy 96, day-use hiking and sightseeing, fishing, and birding. The ponds, wetlands, and wildlife areas are mostly reclaimed gravel pits and surroundings, two being no farther than ~20–30 m from the south side of the Arkansas River, which were mined out by the Valco Cement Co. located immediately east of the ponds. Because the surroundings did not appear to include suitable habitat for whiptail lizards, my first visit to Valco Ponds during a herpetological expedition to southeastern Colorado in 1999 was as a rest stop from the rigors of the day rather than the expectation of collecting lizards. However, I unexpectedly began to see hatchling lizards almost immediately after stopping there, all of which proved to be triploid *Aspidoscelis neotesselata* pattern class A (Walker et al. 1997. *Herpetologica* 53:233–259). Subsequently, using large rubber bands as projectiles, I obtained the following specimens of the species from Valco Ponds for study: 6 September 1999 (University of Arkansas Department of Zoology, UADZ 6657–6667, N = 11); 7 September 1999 (UADZ 6668–6672, N = 5); 10 June 2000 (UADZ 6878–6883, N = 6).

This description of the occupancy of Valco Ponds by *A. neotesselata* A is to show that a moderately large (maximum SVL ~100 mm), triploid, hybrid-derived parthenogenetic species not only subsists in a highly fragmented metropolitan environment which is intensively used by humans, but it is represented there in surprisingly large numbers. Parts of the site that I reference herein include the paved parking lot, a 15–40 m wide grove of mainly Eastern Cottonwood (*Populus deltoides*) between the length of the north side of the lot and the south side of the Arkansas River, a narrow riparian forest trail west of the lot along the river, a road/levee from east of the lot to the river, and two sections of roads/levees between the river and three Valco Ponds of 20, 15.5, and 10 acres stocked with game fish (see <http://www.cfo-link.org/downloads/pueblo1.pdf>). On 6 September 1999,

within minutes of arriving at Valco Ponds, I began to see young-of-year (YOY) of *A. neotesselata* A as I walked along the ~120 m parking lot/Eastern Cottonwood interface. On one occasion I returned to the vehicle where I observed two lizards under it taking refuge from the sun. Lizards were also present along the ~3 m wide forest trail of ~300 m in length running west from the parking lot along the Arkansas River. The only exposed substrate was that of the trail which was critical to the presence of lizards living in this narrow band of habitat where they were frequently forced to retreat from foraging and basking behaviors as humans walk on the trail. Lizards were also observed east of the parking lot on the ~80 m long road/levee north to the river along the west side of the first pond. However, the true extent of the abundance of *A. neotesselata* A at Valco Ponds only became apparent when I explored the elevated narrow road/levee separating the Arkansas River from two of the ponds. This barrier, which is only ~20–30 m in width and 2–3 m above the river, extends eastward ~475 m where it bends northeastward for another ~300 m. Flooding of Valco Ponds by the river is largely prevented by the holding capacity of Pueblo Lake only ~2.05 km upstream to the northwest. The levee supports a complex assemblage of plants consisting of scattered trees (e.g., *Populus deltoides*; non-native Chinese Elm, *Ulmus pumila*; non-native Salt Cedar, *Tamarix ramosissima*, and juniper, *Juniperus* sp.), in addition to growths of grasses and shrubby/tall-growing plants (e.g., Kochia, *Bassia sieversiana*; Sandsage, *Artemisia filifolia*; and Rabbitbrush, *Chrysothamnus nauseosus*) bordering the unpaved road. Ample expanses of well-drained and exposed sandy/gravelly soil on the road, small adjacent areas cleared by ants, spaces among the plants, and gopher mounds provide opportunities for whiptail lizard activities such as foraging, basking, oviposition, and fleeing. A total of ~30 YOY of *A. neotesselata* A, but no second year or older lizards, were observed as I walked back and forth along the levee on 6–7 September 1999. The road/levee is also frequently used by humans, and occasionally by official vehicles, but such interference with lizard activities would be much less severe than on the previously mentioned much narrower west-directed forest trail. During a return visit to Valco Ponds on 10 June 2000, I observed ~20 second year and older individuals of *A. neotesselata* A in less than 2 h (only six collected) on the aforementioned levee, including as many as four individuals in the same field of vision. These older/larger lizards were much more easily approached and collected than were the YOY in the previous year, and the low number obtained in 2000 (N = 6) was by choice.

The Valco State Wildlife Area west of Pueblo Boulevard in Pueblo is among the most dramatic examples of high levels of abundance in a fragmented habitat that I have observed in any parthenogenetic species of *Aspidoscelis*. The habitat available for lizards (which totals ~2.1 ha) and the resulting pattern of lizard distribution at the site can be appreciated by typing in “Valco Ponds, Colorado” on Google Earth and viewing the results. This enclave, which is situated between Pueblo Lake State Park (west), urban Pueblo (east), Arkansas River (north), and Colorado Hwy 96 (south) certainly fits into the pattern of unusual/marginal habitats occupied by parthenogenetic whiptail species in the absence of gonochoristic species (i.e., *Aspidoscelis sexlineata viridis* which occurs elsewhere in the general area) that were discussed by Wright and Lowe (1968. *Copeia* 1968:128–138). Other nearby sites in the western metropolitan area of Pueblo where *A. neotesselata* A occurs in publicly owned areas extensively altered and used by humans, but not in a fragmented mosaic, also have been reported. Based on published records, the species is abundant