Research Note

Cutaneous trematode *Collyriclum faba* in wild birds in Costa Rica

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Summary

An adult *Collyriclum faba* was found in a cutaneous cyst at the base of the lower mandible in a blue-gray tanager (*Thraupis episcopus*, Thraupidae) examined in the Zona Protectora Las Tablas, Costa Rica on 18 August 2010. A total of 1878 birds belonging to 217 species were examined in the country during 2004, 2009, and 2010. *C. faba* was found for the first time in blue-gray tanager and for the first time in Costa Rica as well.

Adult trematodes *Collyriclum faba* (Bremser in Schmalz, 1831), Troglotremaidae, are found in a number of bird species in vast areas of Eurasia, as well as North, Central, and South America (Farner & Morgan, 1944; Stunkard, 1971; Kirmse, 1987; Literák *et al.*, 2003; Literák & Sitko, 2006). The adult trematodes are localized in subcutaneous cysts that occur mostly on the abdomen (especially around the vent), on the shanks and thighs, and less frequently on the thorax, rump, wings, and near the bill or eye (Literák *et al.*, 2003). The life history of this parasite is unknown.

To our knowledge, there are only two notes on findings of this parasite in Central and South America. First, according to Stunkard (1971), a trematode found in a ventral protrusion on the throat of a golden-crowned warbler (*Basileuterus culicivorus*, Parulidae) on the eastern slope of the Andes in Argentina was determined to be *C. faba*. In Panama, Krimse (1987) recorded adult *C. faba* trematodes in various passerines inhabiting both the tropical rain forest at sea level near the Caribbean coast and the tropical mountain cloud forest at middle elevations in the western part of the country. The aim of this study was to document the presence of *C. faba* in Costa Rica based on our long-term study of bird parasites covering various locations in that country. It seems that the occurrence of *C. faba* in birds in Costa Rica is much rarer than in birds in neighbouring Panama.

Mist nets were used to trap wild birds at various locations

in Costa Rica in 2004, 2009, and 2010. Trapped birds were visually examined for the presence of cutaneous cysts of *C. faba*. Directly or after winnowing the feathers, their legs (especially the shanks), abdominal region from the vent to the sternum, neck, the region under the wings, the upper body part around the coccygeal gland, and the head were examined. Small scissors were used to cut the top of a cutaneous cyst, and its content was carefully squeezed out to determine whether it contained *C. faba*. A trematode was removed and preserved in 96 % ethyl alcohol. After examination, the birds were released back into the wild. Seven study sites on both the Caribbean and Pacific slopes of Costa Rica included Hitoy Cerere Biological Reserve (Cordillera de Talamanca Mountains [Mts.], coordinates 9°40'N, 85°05'W; elevation 100 m; 354 birds of 60 species were examined from 17 to 31 August 2004), Barbilla National Park (Cordillera de Talamanca Mts., 9°59'N, 85° 27'W; 600 m; 176 birds of 46 species were examined from 2 to 11 September 2004), Tapantí National Park, Sector Tapantí (Cordillera de Talamanca Mts., 09°46'N, 83°47'W; 1200 m; 351 birds of 62 species were examined from 31 July to 11 August 2009), Rincón de la Vieja National Park (Cordillera de Guanacaste Mts., 10°46'N, 85°18'N; 800 m; 308 birds of 53 species were examined from 15 to 24 August 2009), Braulio Carrillo National Park, Sector Barva (Cordillera Volcanica Central, 10°07'N, 84°07'W; 2600 m; 295 birds of 39 species were examined from 30 July 2010 to 8 August 2010), Tapantí National Park, Sector Cerro de la Muerte (Cordillera de Talamanca Mts., 9°33'N, 83°43'W; 3100 m; 201 birds of 26 species were examined from 11 to 15 August 2010), and Zona Protectora Las Tablas, (Cordillera de Talamanca Mts., 8°54'N, 82°47'W; 1300 m; 193 birds of 53 species were examined from 18 to 22 August 2010). A total of 1878 birds of 217 species were examined.

Among all individual birds examined, we found only a single cutaneous cyst with adult *C. faba*. The cyst, 5 mm in size, was located at the base of the lower mandible of a

blue-gray tanager (*Thraupis episcopus*, Thraupidae) caught in the Zona Protectora Las Tablas on 18 August 2010 (Fig.). On dissection, the cyst contained an oval-shaped yellowish trematode measuring about 2 – 3 mm. No apparent alteration in the health status of the infected bird was found. The parasite was identified in the laboratory as an adult *C. faba*. A total of nine blue-gray tanagers were examined at this location.

This was the first finding of *C. faba* in a blue-gray tanager, although other tanagers had been found to be infected in Panama (Kirmse, 1987). *C. faba* was found for the first time also in Costa Rica. Blue-gray tanager is a resident bird species (Stiles and Skutch, 1995), meaning that the blue-gray tanager with *C. faba* had to have been infected close to the place where the bird was trapped. The parasite's occurrence seems to be focal in character, and it is probably dependent on the density or availability of its intermediate hosts. Morphologically, the *C. faba* from the blue-gray tanager in Costa Rica was the same as *C. faba* from other birds elsewhere in the world. In Europe, *C. faba* cysts have been localized principally in three different body regions in different hosts and therefore three different (cryptic) species of *Collyrichum* have been considered to exist (Literák *et al.*, 2003). Localization of *C. faba* cysts in both Central and South American birds at the base of the lower mandible, the chin, or throat differs substantially from the typical localizations of cysts in European birds (i, shank region; ii, region around the vent; iii, region above the coccygeal gland). Moreover, the *C. faba* cysts in European

birds regularly have contained two adult trematodes (Literák *et al.*, 2003). In the case of the blue-gray tanager, the cyst contained only one adult *C. faba*. Similarly, a cyst on a golden-crowned warbler in Argentina contained only one adult *C. faba* (Stunkard, 1971). On the other hand, the cysts on infected birds in Panama contained from 1 to 8 (mean 3.3) *C. faba* adults. To address this issue (i.e. species-intraspecies variability of *Collyrichum*), future research should concentrate on detailed morphometric and/or DNA analysis.

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