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Ornithology

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Abstract

Examination of a carcass of a Yellow-billed Cuckoo *Coccyzus americanus* (L.) (Cuculiformes: Cuculidae) provided the first record of a louse in the genus *Cuculoecus* (Psocodea: Philopteridae), a springtail *Seira brasiliana* (Arlé) (Collembola: Entomobryidae), and a tetranychid mite in the genus *Oligonychus* (Trombidiformes: Tetranychidae), from Vaca Key, Monroe County, Florida, USA.

Introduction

The Yellow-billed Cuckoo *Coccyzus americanus* (L.) (Cuculiformes: Cuculidae) is the bird species most commonly found killed by collision with manmade structures in Florida (Forrester & Spalding 2003). The Yellow-billed Cuckoo breeds in southeastern Canada, the USA, and the Greater Antilles and northern Mexico, and winters in South America as far south as Argentina and is declining in numbers (Banks 1988, Anders & Post 2006). Breeding is known in the Florida Keys (Ogden 1971). Deforestation in the Florida Keys has impacted cuckoo nesting behaviour (Rohwer & Woolfenden 1969, Bancroft et al. 1995).

Materials and Methods

On 10 May 2021, a Yellow-billed Cuckoo was found dead outside a building on Vaca Key, City of Marathon, Florida, USA. The carcass was washed and arthropod associates were preserved as described (Hribar & Miller 2011); the carcass was washed in a mild detergent solution and the wash water was passed through coarse filter paper. Arthropod specimens recovered were cleared in a solution of phenol and acetic acid and mounted on microscope slides in Canada balsam.

Results

Three arthropods were collected during the washing process: one chewing louse, one springtail, and one mite. They were sent to specialists for identification.

The louse was determined to be a nymph of a *Cuculoecus* sp. (Psocodea: Philopteridae). *Cuculoecus coccygii* (Osborn) was described from the Yellow-billed Cuckoo by Osborn (1896) and has been collected in Florida from Yellow-billed Cuckoos in Miami-Dade, Lee, and St. Lucie counties (Forrester et al. 1995). *Cuculoecus coccygii* has been found on three other cuckoo species: Dark-billed Cuckoo *Coccyzus melacoryphus* Vieillot, Black-billed Cuckoo *Coccyzus erythropthalmus* (Wilson), and the Mangrove Cuckoo *Coccyzus minor* (Gmelin) (Price et al. 2003). All three cuckoo species can be found in Florida but none has a record of lice from Florida specimens (Forrester & Spalding 2003, Florida Ornithological Society Records Committee 2021). This is the first record of a *Cuculoecus* species from Monroe County, Florida. The specimen was deposited into the collection of the Academy of Natural Science of Drexel University in Philadelphia, PA.

The springtail was identified as *Seira brasiliana* (Arlé) (Collembola: Entomobryidae). This species is found in disturbed grassy roadsides and secondary forests. It is known from Brazil, Bolivia, Puerto Rico, the Virgin Islands, the Dominican Republic, and at unspecified localities in the state of Florida (Soto-Adames et al. 2017). The genus *Seira* is primarily African and tropical American in distribution but species are known from all major land masses except Antarctica (Christiansen & Bellinger 2000). The specimen was deposited into the collection of the Florida State Collection of Arthropods, Gainesville.

The mite was identified as an *Oligonychus* sp. (Trombidiformes: Tetranychidae). The specimen was not identifiable to species. As the time of writing, there were 210 species in the genus (Migeon & Dorkeld 2021). The genus is found worldwide and contains many agricultural pests, some of which have dozens of known host plants (Matsuda et al. 2012). The family Tetranychidae contains phytophagous species of economic importance worldwide; species have been collected previously from plumage and nests of birds (Hendricks & Axtell 1968, Ardeshir 2010). At least one species of *Oligonychus* disperses via air currents (Szymkowiak et al. 2007). The specimen was deposited into the collection of the Florida State Collection of Arthropods, Gainesville.

Discussion

The presence of the louse on the bird is expected. As for the mite and the springtail, either the bird encountered the springtail and the mite at some point where they shared the same habitat, or the arthropods crawled onto the carcass postmortem. Why were so few arthropods found on the bird? There are three possibilities. First, when the bird carcass was found, it was covered by ants (species undetermined). If the bird had died over the weekend (10 May was a Monday) and the ants were able to remove any ectosymbionts that did not manage to leave the host then none would remain to be found. Second, any arthropod associates of the cuckoo may have abandoned the carcass after death. Lice are known to abandon a dead host after the body cools, around 24 hours post-mortem (Petryszak et al. 1996). Finally, there may not have been many arthropods on the bird before it died. Rózsa (1997) compiled data from a dozen studies of lice on birds; not every individual bird has lice.

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