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First Detection of Apparent Ophidiomycosis in the Mole Kingsnake (*Lampropeltis rhombomaculata*) in North Carolina, USA

Understanding the full host and geographic extent of ophidiomycosis caused by the fungal pathogen *Ophidiomyces ophidiicola* is an emerging priority (Haynes and Allender 2021), especially given recent molecular support for its introduction to the United States (Ladner et al. 2022). Although the Mole Kingsnake, *Lampropeltis rhombomaculata*, is widespread in the southeastern USA, it has rarely been surveyed for pathogens or other metrics of health due to its cryptic and fossorial life history. In one prior case, a single individual was investigated for ophidiomycosis (formally known as snake fungal disease) by the Wildlife Epidemiology Laboratory at the University of Illinois Urbana-Champaign after exposure to another snake infected with *O. ophidiicola*. That individual never developed clinical signs or tested positive for *O. ophidiicola* DNA. There have been no prior surveys for ophidiomycosis in wild *L. rhombomaculata*, but ophidiomycosis has been reported from six other *Lampropeltis* species (Haynes and Allender 2021), suggesting that *L. rhombomaculata* is likely to be susceptible to the disease. Here, we report the first case of suspected ophidiomycosis in a wild *L. rhombomaculata*.

At 0855 h on 13 August 2022, we discovered an adult *L. rhombomaculata* (81.5 cm SVL, 12.5 cm tail length) under a partially decayed log while surveying terrestrial colubrids at G. W. Hill Forest, Durham County, North Carolina, USA (36.20083°N, 78.88525°W; WGS 84). At the time of capture, the ambient air temperature was 21.8°C and humidity was 74.8%, and under the

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PHOTOS BY MCKENNA PEER

Fig. 1. Clinical signs of ophidiomycosis on a *Lampropeltis rhombomaculata* from Durham County, North Carolina, USA: A) general signs of ecdysis; B) dry crusts visible on the dorsal body. For both photographs, the snake was left unaltered, but we slightly blurred the background.

log, the temperature was 19.7°C and the soil moisture was 10%. The snake was beginning ecdysis, with opaque eye scales and pale body coloring (Figure 1A). Also, the snake presented with clinical signs of ophidiomycosis in the form of several crusts on the dorsal body, measuring approximately 3 cm by 1 cm in size (Figure 1B). We collected two skin swabs (one dorsal, one ventral) by passing the swab along the entire length of the body from snout to tail tip five times, including the lesions.

Both swabs later tested positive for *O. ophidiicola* DNA using a previously published qPCR assay (Allender et al. 2015). Because this snake had consistent clinical signs of ophidiomycosis and a positive qPCR test, it is classified as a case of "apparent ophidiomycosis" ("confirmed ophidiomycosis" requires a skin biopsy and histological analysis; Baker et al. 2019). Additional surveillance and monitoring are warranted to better understand the scope of *L. rhombomaculata* infection and the significance of infection for individuals, populations, and communities.

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