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FIRST RECORD OF *DOROCORDULIA LIBERA*
(ODONATA: CORDULIIDAE) IN OHIO IN 75 YEARSEric G. Chapman¹

ABSTRACT

A population of the Racket-tailed Emerald, *Dorocordulia libera*, was found at Singer Lake, a collection of numerous bogs in southern Summit County, Ohio. This species was previously known in Ohio from two specimens collected 22 June 1924 from a bog in Geauga County. Between 8 June and 23 July 1999, 14 male and 3 female specimens were collected at Singer Lake. Notes on this species behavior and flight season in Ohio are presented.

The Racket-tailed Emerald, *Dorocordulia libera* (Selys 1871), is a small greenish-black Emerald (Corduliidae) with a pronounced club-shaped tail. It inhabits "bog ponds, or bog or marsh bordered lakes and sluggish streams" (Walker and Corbet 1975). Its published geographic range extends from northern Indiana (Borror and Epstein 1942) northwest through Minnesota into Ontario, east to Prince Edward Island, and south to New Jersey (Bick and Mauffray 1999). Thus, northern Ohio appears to be the southern range limit of *D. libera* at this latitude. Prior to 1999, the Racket-tailed Emerald had been known in Ohio from 1 male and 1 female specimen collected on 22 June 1924 by J. C. Pallister at Bradley Pond (now known as Lake Kelso), a bog lake in Geauga County (Borror and Epstein 1942). These specimens are deposited at the Cleveland Museum of Natural History, and they likely represent a population that has been extirpated from the Lake Kelso / Fern Lake Bog system, as many visits in the 1990s to that area by members of the Ohio Odonata Society have failed to yield any specimens (Bob Glotzhober, pers. comm.).

MATERIALS AND METHODS

Singer Lake, located in southern Summit County, Ohio, is quite possibly Ohio's largest remaining bog system, with approximately 150 acres of wetlands, including several leatherleaf (Ericaceae: *Chamaedaphne calyculata*) bogs. One of the leatherleaf bogs covers 26 acres, the largest such bog in Ohio (Jim Bissell, pers. comm.). Singer Lake was visited 1-3 times per week beginning 8 June 1999 and ending 1 August 1999. A standard aerial net was used to capture the Racket-tailed Emeralds, and behavioral notes were taken. Voucher specimens, collected on 12 separate visits, were deposited at the Ohio Historical Society, at the Cleveland Museum of Natural History, and in the author's personal collection.

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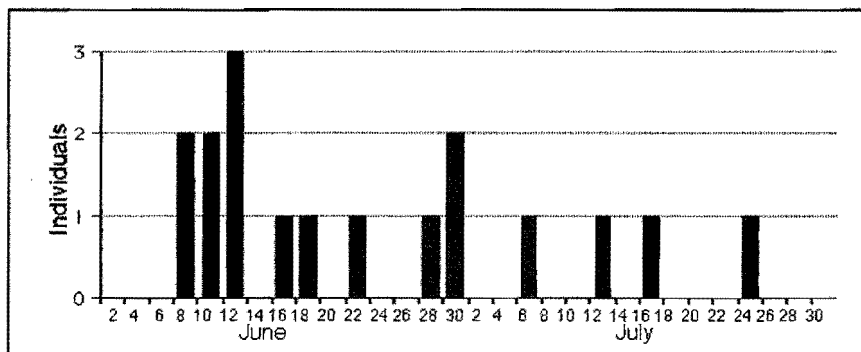


Figure 1. Number of specimens and dates of *D. libera* taken at Singer Lake on various dates in 1999.

RESULTS AND DISCUSSION

Between 8 June and 23 July 1999, 14 male and 3 female *D. libera* specimens were collected from Singer Lake (Fig. 1). Although no formal counting was done, the population was most abundant from its discovery on 8 June until around the end of June, after which its numbers gradually declined until only one was seen in a 2 h period on 23 July. It is likely that its flight season begins around the last week of May for the following reasons: (1) fully mature individuals were seen flying on 8 June and it usually takes a week or so for the maturation process to occur; (2) the earliest record for Michigan is 17 May (Mark O'Brien, pers. comm.), and the earliest record for New Jersey is 24 May (May and Carle 1996); and (3) the Ohio Odonata Society visited the site on 15 May 1999, and none were observed (Bob Glotzhober, pers. comm.). During its peak flight season, individuals could be seen flying from around 1000 h until dusk. During July, *D. libera* was most often seen in the warmest part of the day between 1300–1700 h.

In June, general individuals were seen up in the woods between 50–200 m away from the water. They flew short distances (several meters) back and forth about 1 m off the ground in sunny clearings or trails, and rested horizontally on the top surfaces of large tree leaves in direct sunlight 1 or 2 m up. Near water, mature individuals typically flew about 1 m off the ground (more often over land adjacent to the open water than over the water itself) in an undulating flight pattern similar to other Emeralds. They seemed to prefer to fly along the edges of forest clearings or along the shaded edges of large solitary trees. Their flight was fairly slow, with rapid wing beats, and when viewed from the side, the abdomen was held slightly arched (concave down from base to apex). Like many other dragonflies, they seemed to disappear as soon as the sun went behind a cloud, after which a few individuals were seen hanging vertically from the undersides of tree branches 1–5 m up. Males did not seem to be territorial; no male-male chases were observed, even during peak population densities. Although males and females were seen in close proximity both near and away from water, neither breeding nor oviposition behavior was observed.

ACKNOWLEDGMENTS

I thank Jim Bissell (Cleveland Museum of Natural History) for alerting me of the great potential of Singer Lake as a habitat for rare bog/wetland species. I am grateful to the Harold Verden family for allowing access to their property (literally their front yard). I thank Brian J. Armitage (Ohio Biological Survey) for asking me to light trap for him at Singer Lake, because it was on my first trip there (looking for sites) that I found *D. libera*. Steve W. Chordas III (The Ohio Biological Survey) reviewed early drafts of this manuscript. Finally, I thank Bob Glotzhober (Ohio Historical Society) for his valuable input toward this study, and for his role as mentor in my development as an odonatist.

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