

FIRST MICHIGAN SPECIMENS OF *LIBELLULA VIBRANS* FABRICIUS (ODONATA: LIBELLULIDAE)

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ABSTRACT

Libellula vibrans Fabricius (Odonata: Libellulidae) is a large dragonfly previously known in Michigan only from sight or literature records. In 2005, two small populations were found in Wayne County, Michigan.

Libellula vibrans Fabricius (Odonata: Libellulidae), the Great Blue Skimmer, is not mentioned in historical lists of Michigan Odonata (Byers 1927, Kormondy 1958, O'Brien 1997). Prior to 2005, there are no specimens in the University of Michigan Museum of Zoology's (UMMZ) insect collection, where voucher specimens from the Michigan Odonata Survey (MOS) are housed.

A published report of *L. vibrans* for Michigan was by Nishida (1999) finding one individual on 22 June 1995 at a small wooded wetland in Westland, northwestern Wayne Co., Michigan. His paper also includes a photograph of a male from this location dated 10 July 1995. If he obtained a specimen, its whereabouts are unknown. A report of a sight record from Wayne County from 1999 (Hudson et al. 1999), as well as two sight reports from Washtenaw County from early July 2005 (M. F. O'Brien, pers. comm.) prompted me to search for this species, focusing on the Westland area.

On 9 July 2005, Darrin O'Brien and I observed a single male in a small wooded swamp in the Holliday Nature Preserve in Westland, Wayne County, Michigan. As Westland is a highly developed suburb of Detroit, I believe this is the same spot in which Nishida (1999) made his observations; in fact, I checked this spot periodically in 2003 searching for *L. vibrans*. The site itself is a wooded wetland of less than one hectare. About 20% of the site is open water, and the rest liberally interspersed with buttonbush (*Cephalanthus occidentalis*) and many fallen trees. Water is shallow, probably not more than a half-meter deep in wet years, and is covered by duckweed (*Lemna* sp.) by mid-summer. Water overlays thick organic muck which also lines the shore. The wetland is situated in an ~40 ha forest fragment that is part of a larger (200-ha), somewhat linear forest preserve in northwestern Wayne County.

We were able to clearly observe a male *L. vibrans* on our initial observation on 9 July but it flew off and could not be relocated. We returned the following day and made a systematic search of the area. After a half-hour, we located three to five male *L. vibrans*, characteristically hunting from perches in dappled shade and allowing close approach (Dunkle 2000, Abbott 2005). We took two voucher specimens which have been deposited in the Insect Collection at the UMMZ. Coincidentally, this was ten years to the day that Nishida photographed a male in what is presumably the same spot.

On 29 August 2005, O'Brien and I were able to access another small (<2 ha) wooded pond on the north end of Willow Metropark, located in southwestern Wayne County, and ~20 km nearly due south of the Westland site. Earlier in the season this pond had been too wet for close approach. By late August, the pond itself had areas of standing water only a few centimeters deep surrounded by soft muck becoming overgrown with wetland plants such as *Lobelia cardinalis* and *Polygonum coccinea*. The area is ringed by forest and connected by an intermittent stream to the Huron River, <100 m away. We immediately saw

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several male *L. vibrans* perched on fallen trees overhanging the pond. When one would fly close to another, they would give chase but not far or vigorously. We took one voucher for this location.

DISCUSSION

Libellula vibrans has been recorded in 28 states and the province of Ontario. It is most common in the southeastern U.S. and southern Atlantic coast (Needham et al. 2000, Donnelly 2004). In Wisconsin, it is a species of special concern, represented only by historical records (~100 years old) from the Milwaukee area (Smith et al. 2004). There are 25 specimens (22 from Cook Co.) in the Illinois State Museum from the northern third of Illinois (ISM 2003). The species is considered uncommon in Indiana with records for 15 counties (Curry 2001). The status in Ohio is uncommon and limited (Glotzhofer and McShaffrey 2002). Its status in the northeastern part of the state is rare (Rosche 2002). There are only six records in Ontario, all from Essex and Kent counties in the extreme southwestern part of the province (OOA 2005).

This is a species that would be difficult to overlook, being the largest libellulid in North America, with a total length of 56-63 mm (Needham et al. 2000). Female *L. vibrans* might be mistaken for female *L. incesta* Hagen, Slaty Skimmer, which is 50-52 mm long; however, the white face of both sexes of *L. vibrans* distinguishes it from the darker faces of the other species (Needham et al. 2000, Abbott 2005).

Wayne County is heavily urbanized. When I began surveying its Odonata in 2000, there were only 43 species confirmed by specimens (Craves 2002). *L. vibrans* represents the 40th new county record I have confirmed since that time, demonstrating how much we have to learn about Odonata distribution even in previously well-surveyed, urbanized areas with limited habitat.

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