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LIBELLULA FLAVIDA (ODONATA: LIBELLULIDAE), A DRAGONFLY NEW TO OHIO

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ABSTRACT

Libellula flavida, a widespread but uncommon dragonfly of southeastern and south central North America, is now recorded from Ohio. A breeding population was discovered in an acidic fen on the site of a sandstone quarry in southern Ohio.

Libellula flavida Rambur (Odonata: Libellulidae), the Yellow-sided Skimmer, is a medium-sized libellulid dragonfly with pale yellow sclerites on the sides of the adult pterothorax. Little has been written about this species, but records indicate a range extending from the mid-Atlantic coast, across the south, to the south-central plains states (Needham et al. 2000). Although there are a few records for neighboring Kentucky (Carl Cook, pers. comm.), *L. flavida* had never been collected in Ohio despite extensive surveys for odonates over the last decade (Glotzhober 1995, 1999, Glotzhober et al. 1995).

This paper documents the discovery of a breeding population of *L. flavida* in Pike County, Ohio. Two adult males were first collected by the author on 24 August 1998 at a sphagnum bog located 0.5 km north of Jackson Lake along the Jackson/Pike County line (39°6.48′N, 82°47.70′W). Upon returning to the site on 24 July 1999, several adults of both sexes were collected including a few males exhibiting immature coloration.

The dragonflies were concentrated around a small sphagnum fen within a large sand mine that ceased operation in 1965 (Kritsky et al. 1999). The fen was situated on a terraced slope on the east side of the quarry. Groundwater seeped from the base of an excavated wall of Sharon Conglomerate sandstone and flowed slowly through a sphagnum mat approximately 0.5 hectare in area. In addition to *Sphagnum cuspidatum* Ehrh. *ex* Hoffm, the following plants were common throughout the fen: hardhack (*Spiraea tomentosa*), cattail (*Typha latifolia*), common arrowhead (*Sagittaria latifolia*), rush (*Juncus effusus* and *J. acuminatus*), bulrush (*Scirpus purshianus*), beakrush (*Rhynchospora capitellata*), Joe-Pye-Weed (*Eupatorium perfoliatum*), and boneset (*Eupatorium maculatum*).

Males of *L. flavida* flew patrol flights over the fen and alighted frequently on stems in a manner similar to that of *L. lydia* (Campanella and Wolf 1974). On several occasions, males were observed to seize females in flight and copulations took place while the pairs were perched. Females were observed to oviposit exophytically by hovering over open channels of water and striking the surface intermittently with their abdomens. The pH of the

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water at six oviposition sites ranged from 4.4 to 7.3 with a mean of 5.8 (S.D. = 1.12). Several larvae collected from the fen were later identified as *L. flavida* (Eric Chapman, pers. comm.), confirming that the population is breeding at this site.

Several other odonates were present but uncommon around the wetland. Single adult individuals of the dragonflies *Libellula lydia* Drury, *Libellula luctuosa* Burmeister, and *Erythemis simplicollis* (Say) as well as the damselfly *Enallagma aspersum* (Hagen) were present in July 1999. During the visit to the site in August 1998, male *Somatochlora tenebrosa* (Say) were observed patrolling territories amidst the cattails of the fen. A search of the shoreline of nearby Jackson Lake yielded numerous *Libellula cyanea* Fab. and *Libellula incesta* Hagen, but no *L. flavida*.

DISCUSSION

Although very little has been published about the ecology of *L. flavida*, there is consistent anecdotal evidence that this species has an affinity for acid bogs and seepages. This species has been found at acidic bogs in Arkansas (Farris and Harp 1982), South Carolina, Virginia, and northwest Florida. In southern New Jersey, *L. flavida* is found exclusively at acid bogs with sphagnum, especially old cranberry bogs (Bob Barber, pers. comm.). However, *L. flavida* has also been collected at calcareous fens and sand bottomed streams.

Abandoned sandstone quarries are known to foster the development of pioneer sphagnum bog communities and serve as refugia for native bog plants in Ohio (Andreas and Host 1983). Similarly, the sandpiles of several abandoned mines in southern Ohio have been colonized over the past 50 years by tiger beetle species whose habitat is otherwise scarce in the region (Kritsky et al. 1999). It appears that these manmade habitats have provided the conditions that enabled the establishment of *L. flavida* in southern Ohio. Other sandstone quarries are common throughout southern Ohio and should be investigated for the presence of *L. flavida*. A comparison of wetland habitats where this uncommon species does and does not occur may improve our knowledge of its ecological niche.

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