

June 1996

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### Recommended Citation

Kielb, Michael A.; Bright, Ethan; and O'Brien, Mark F. 1996. "Range Extension of *Stylogomphus Albistylus* (Odonata: Gomphidae) for the Upper Peninsula of Michigan," *The Great Lakes Entomologist*, vol 29 (2)  
DOI: <https://doi.org/10.22543/0090-0222.1906>  
Available at: <https://scholar.valpo.edu/tgle/vol29/iss2/5>

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RANGE EXTENSION OF *STYLOGOMPHUS ALBISTYLUS* (ODONATA: GOMPHIDAE) FOR THE UPPER PENINSULA OF MICHIGANMichael A. Kielb, Ethan Bright, and Mark F. O'Brien<sup>1</sup>

## ABSTRACT

Larvae, exuviae, and teneral adults of *Stylogomphus albistylus* (Hagen) were collected from Mountain Stream, within the boundaries of the Huron Mountain Club, in the Upper Peninsula of Michigan (Marquette County). This represents the first published report of this species from the Upper Peninsula of Michigan, and only the second recorded site for the state of Michigan.

*Stylogomphus albistylus* (Hagen), is a small, widely distributed gomphid dragonfly, ranging from Nova Scotia westward to Wisconsin, and southward to North Carolina, Alabama, and Missouri (Leonard 1940, Carle 1980, Hilsenhoff 1995). In the western Great Lakes Region, the species is recorded from east-central Ohio (Glotzhofer 1995) northern Ontario (Walker 1958), and northern Wisconsin (Hilsenhoff 1995). In Michigan however, this species previously has been found only in Lake County (Leonard 1940, Kormondy 1958). No records are known from Illinois (Montgomery 1967), Indiana (Lawrence 1967), or Minnesota (Carlson, Anderson, and Hamrum 1967). A previously unpublished investigation in this area (Yanoviak 1993) also documented larvae of *S. albistylus* from the Huron Mountains, both in Mountain Stream and the Pine River.

Mountain Stream is located in the Huron Mountains (Marquette Co.; T.52N, R.28W, Sec. 29), northwest of Marquette, Michigan. An undisturbed and fast-flowing stream within a hemlock-dominated forest, Mountain Stream connects Mountain Lake and Pine Lake, and is characterized by coarse gravel and bedrock substrates. The stream course is also punctuated by a series of rocky rapids and waterfalls, the largest of which is approximately 12 m wide with a 7 m drop. The stream bank below the falls is characterized by large rocks as well as undercut banks with an understory of *Polygonatum*, *Maianthemum* and *Polygonatum* species (Ecosystem Type 30, see Simpson, et al. 1990).

On 30 June 1996, we found larvae, exuviae, and freshly-emerged adults of *S. albistylus* below the base of the Mountain Stream falls. Exuviae were observed clinging nearly horizontally upon stream-side rocks as well as almost vertically attached to vegetation, similar to previous observations (Carle 1980). Further collecting on 3 July 1996, below and approximately 200 m above the falls yielded additional larval specimens. Both early and late-instar larvae were collected among woody debris and large cobbles near the rocky banks. Total length of the larvae varied from <3 mm to 19.3 mm, evidence

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that, in this part of its range, *S. albistylus* requires more than one year to complete its larval stage. During collecting, it was noticed that several larvae had crawled upon shaded rocks, and adults were emerging from their larval stage. Teneral adults were also found resting on vertical moss-covered rock faces below the falls, and on nearby trees. Teneral adults were found up to several hundred meters downstream from the base of the falls, ca. 10–15 m. from the stream.

Previous observations (Needham 1901, Leonard 1940, Walker 1958, Carle 1980) indicate that larvae of *S. albistylus* prefer fast-flowing streams with areas of sand. As this species seems to be fairly common in northern Wisconsin (Hilsenhoff 1995), it is expected that similar stream habitats in the Upper Peninsula of Michigan will yield more records of this species. It is puzzling that this species has not been previously recorded elsewhere from the Upper Peninsula of Michigan. This does point out that there is a dearth of comprehensive Odonata records from the Upper Peninsula, and future collecting efforts should concentrate on this region of the state.

#### ACKNOWLEDGMENTS

We thank David C. L. Gosling, and the Huron Mountain Wildlife Foundation for support of our activities at the Huron Mountain Club. Susan Kielb was a valuable field assistant. The specimens have been deposited in the collection of the University of Michigan Museum of Zoology Insect Division.

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