

NEW DISTRIBUTION RECORDS OF *GOMPHUS CONSANGUIS* (ODONATA: GOMPHIDAE) IN TENNESSEE

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ABSTRACT—*Gomphus consanguis* was found in two counties in eastern Tennessee (McMinn and Meigs) in 2004–2005. The streams in which the species was found are impacted by farm operations, and population numbers appear to be low. The species is still considered rare.

Gomphus consanguis Selys (Cherokee Clubtail) is a rare, medium-sized dragonfly (48–50 mm in length) that occupies small, shady, spring-fed streams in the southern Appalachian foothills. It has been recorded from only eleven counties in Alabama, Georgia, North Carolina, Tennessee, and Virginia (Donnelly, 2004). Bick (2003) rated it “G3” which according to the Natural Heritage system is rare (no immediate threat, 21–100 known occurrences). In Tennessee, the species is recorded from only one locality in Sullivan County, in the extreme northeast corner of the state (Westfall and Trogdon, 1962). While collecting dragonflies north of Chattanooga, several previously unrecorded populations were found in two counties.

Gomphus consanguis is readily identifiable within the subgenus *Gomphurus* by coloration and morphology. Adults have a relatively slender club at the tip of the abdomen and black apical segments. The wing tips are tinged brown. *Gomphus consanguis* is distinguished from its closest congener, *G. rogersi* Gloyd, by examining the face and first dark lateral thoracic stripe. In *G. consanguis*, only one narrow black face stripe is present, whereas in *G. rogersi* there are two black face stripes. The first dark lateral thoracic stripe is complete in *G. consanguis* but incomplete in *G. rogersi*. Morphological differences based on genitalia are illustrated in Needham et al. (2000). Larvae of *G. consanguis* usually lack dorsal hooks on abdominal segments 8 and 9 and lack a posterolateral spine on segment 6. In the following records section, F = final stadium larva; earlier stadia are designated by F minus the number of molts short of F (for example, F–1 is the penultimate stadium).

NEW TENNESSEE RECORDS OF *GOMPHUS CONSANGUIS*:

McMinn County, Rogers Creek, Co. Rd. 57, 0.4 mi. from Co. Rd. 50, North of Lamontville (35°23'11"N/84°47'19"W), 14 April 2005, 2 larvae (F); same locality, 4 June 2005, 1 ♂, 6 exuviae; coll. K. J. Tennessen and A. E. Hopper.

Meigs County, Decatur Creek, Co. Rd. 263 (Goodfield Rd.) (35°29'29"N/84°49'32"W), 20 April 2004, 18 larvae (12 F, 4 of which had swollen wing pads, indication of nearing emergence, 8 with flat wing pads, 4 F–2, and 2 F–4); same locality, 30 May 2005, 2 ♂, 6 exuviae; coll. K. J. Tennessen and A. E. Hopper.

Meigs County, Goodfield Creek, mouth of Decatur Creek (35°29'22"N/84°49'50"W), 22 April 2004, 8 larvae (4 F, 2 with swollen wing pads, 2 with flat wing pads, 1 F–1, 2 F–2, and 1 F–3), coll. K. J. Tennessen and A. E. Hopper.

Meigs County, Gunstocker Creek, Gunstocker Rd. (35°19'49"N/84°57'5"W), 12 May 2005, 6 larvae (1 F, with swollen wing pads, 1 F–1, 2 F–2, and 2 F–4), coll. K. J. Tennessen and Josh Stephens.

Meigs County, Agency Creek, Armstrong Ferry Rd. (35°23'34"N/84°53'44"W), 12 May 2005, 1 F–3 larva, coll. K. J. Tennessen and A. E. Hopper.

All specimens to be deposited in the Florida State Collection of Arthropods, except one male adult from Decatur Creek (30 May 2005) to be deposited in the United States National Museum, Washington, DC.

DISCUSSION

The new county records fill a gap in the known geographic range of *G. consanguis* along the western side of the Appalachian foothills between northeast Tennessee and northern Georgia and Alabama. We consider the Decatur Creek and Goodfield Creek collections (#2 and 3 above) to be from one population. No notable variations are found in key identifying characteristics of the adults or larvae from populations sampled in McMinn and Meigs counties.

Knowledge necessary to assess the conservation status of *G. consanguis* and other Odonata species is still inadequate. The United States Fish and Wildlife Service placed *G. consanguis* in category 2, which meant that proposing it for listing as endangered or threatened was possibly appropriate (Donnelly, 1993). However, not enough information was available for action at the time. Several populations have been discovered since (Roble et al., 1997; Tennessen et al., 1995). Dunkle (2004) noted that *G. consanguis* was listed previously by the IUCN (International Union for the Conservation of Nature and Natural Resources). Dunkle rated *G. consanguis* as a species of conservation concern, stating that it occurs in “rather pristine spring fed streams” and appears to be sensitive to watershed disturbance. The streams surveyed in this report are not pristine. Evidence indicates that logging, road building, farming practices, and cattle waste continue to impact the

watersheds. It is highly likely that population numbers were higher prior to settlement and development of this area, but without historical data, it is not possible to assess the degree of impact. The new records fill a gap in knowledge of the distribution of *G. consanguis*, but the low population numbers indicate its status as rare should not be changed. We are not aware of any conservation or management plans for the future protection of *G. consanguis*.

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