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## The Virginia Piedmont Water-boatman *Sigara depressa* (Heteroptera: Corixidae) Rediscovered in Virginia

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### INTRODUCTION

The family Corixidae (Order Heteroptera) is cosmopolitan in distribution and specimens have been taken from every continent (Bobb, 1974). Commonly called water boatmen, these insects occupy a wide range of aquatic habitats, including pools, ponds, backwaters of streams, and occasionally slow-flowing streams. Most species live in fresh water but a few inhabit brackish waters. Corixids can be found in extreme abundance at some sites, often with several species found in the same habitat.

The Virginia Piedmont water-boatman (*Sigara depressa* Hungerford) is a poorly known member of the family Corixidae. Described by Hungerford (1948) on the basis of material collected in Fluvanna County in 1947 and 1948, it can be distinguished from other local species of *Sigara* by its color pattern and characteristics of the male pala and claspers. Adults overwinter in backwater pools of small streams and become active by March (Bobb, 1974).

This species is apparently endemic to Virginia (Polhemus et al., 1988; Hoffman, 1991). Its historical distribution includes only four sites (Fig. 1), all of

which are small streams in Virginia's Piedmont physiographic province (Caroline, Fluvanna, Hanover, and Prince William counties). Bobb (1974) stated that *S. depressa* has not been collected in Virginia since 1948, when he collected only a few specimens at the type locality, even though it was common at the same site during the previous year. His subsequent surveys at this site were unsuccessful. Bobb found this species at only one other locality (Campbell's Creek, Caroline County) despite his fairly intensive surveys for aquatic Heteroptera throughout Virginia. The most recent collections of *S. depressa* were made in 1969 when John T. Polhemus (personal communication) took it on 13 June in Prince William Forest Park (Prince William County) and J. Quensen found it on 3 July at County Route 658 along the North Anna River (Hanover County). One male specimen collected at the Prince William (county) site is currently retained in the J. T. Polhemus Collection, Colorado Entomological Museum, 3115 South York Street, Englewood, CO 80110. One male specimen from the Hanover County site is deposited in the entomology collection at the USNM (D. A. Polhemus, personal communication). Neither of these 1969 collection sites were mentioned by Bobb (1974) or

Hoffman (1991).

In 1997, the Virginia Department of Conservation and Recreation, Division of Natural Heritage (DCR-DNH) received funding through the Canon Exploration Grants Program of The Nature Conservancy to conduct surveys for *S. depressa* (Fig. 2) in an effort to rediscover this species in Virginia.

## MATERIALS AND METHODS

Surveys for *S. depressa* were conducted from July through November 1997 at 27 sites in Caroline, Charlotte, Fluvanna, Halifax, Louisa, Mecklenburg, Orange, and Prince William counties. Fine mesh dip nets and hand collection methods were used at each site. Nets were pulled through overhanging vegetation along the banks and through emergent vegetation and decaying leaves on stream and pond bottoms. Sites included small to medium-sized streams with habitat characteristics similar to the original collection sites in Caroline and Fluvanna counties as described by Bobb (1974), and small, permanent and ephemeral ponds in upland and bottomland habitats.

Voucher specimens were preserved in 70% isopropyl alcohol and have been or will be placed in a reputable museum collection. Two specimens collected on 12 September 1997 have been deposited in the collection of the Virginia Museum of Natural History, Martinsville, Virginia.

## RESULTS AND DISCUSSION

Specimens thought to be *Sigara depressa* were found at one site near the type locality in Fluvanna County (Fig. 1). Our tentative identification was verified by Dr. Richard L. Hoffman of the Virginia Museum of Natural History. The site is located on Ballinger (at County Route 631), just downstream of its confluence with Hunters Branch, approximately 1.5 km SSE of the type locality (Hunters Branch at U. S. Route 15). Habitat consisted of a quiet, deep (0.75-1.0 m) sand and muck-bottomed pool about 15 m downstream of an extensive series of riffles intermittent with shallow run habitat. Three adults of *S. depressa* were captured during approximately 45 min of intensive dip-net sampling on 12 September 1997. All three specimens were captured in or around overhanging grasses, forbs, and blackberries (*Rubus* spp.) that extended into the water along the west bank of Ballinger Creek at the upstream end of the pool habitat. Surveys at this site after dusk on 18 November 1997 revealed five additional specimens, of which three (2 males, 1 female) were

retained as vouchers. Intensive surveys at this site on the following day failed to produce additional specimens.

Sampling at multiple sites within Prince William Forest Park on 17 September and 3 October 1997 did not reveal additional specimens of *S. depressa*. The Hanover County collection (1969) was made only a few years before the creation of the Lake Anna reservoir. This site is currently a few kilometers downstream of the dam, and although it was not revisited by the authors, it likely has been altered since *S. depressa* was collected there. Locality data for the Campbell's Creek site in Caroline County (Bobb, 1974) indicate that it is 20.1 miles (= 32.4 km) north of Ashland at U. S. Route 1. We found no streams named Campbell's Creek in this vicinity on the Ladysmith USGS quadrangle or in the Virginia Atlas and Gazeteer (DeLorme Mapping, 1995). However, our attempts to locate this site revealed that a housing development called Campbell's Creek Estates is located along the South River north of Ladysmith Virginia, approximately 20 miles (= 32.3 km) north of Ashland. Habitat at this site along the South River is similar to that described by Bobb (1974) for the Campbell's Creek site. Our attempts to capture *S. depressa* in the South River at U. S. Route 1 were unsuccessful.

The habitat in which *S. depressa* was found during 1997 is relatively common throughout a large portion of the Piedmont physiographic province in Virginia. Focused searches in similar stream habitats and within ponds might reveal this species at additional sites in Virginia and adjacent states. Hoffman (1991) stated that extensive sampling in the central Virginia Piedmont is needed to ascertain the current biological status of this species prior to the formulation of any protective or management measures.

## ACKNOWLEDGMENTS

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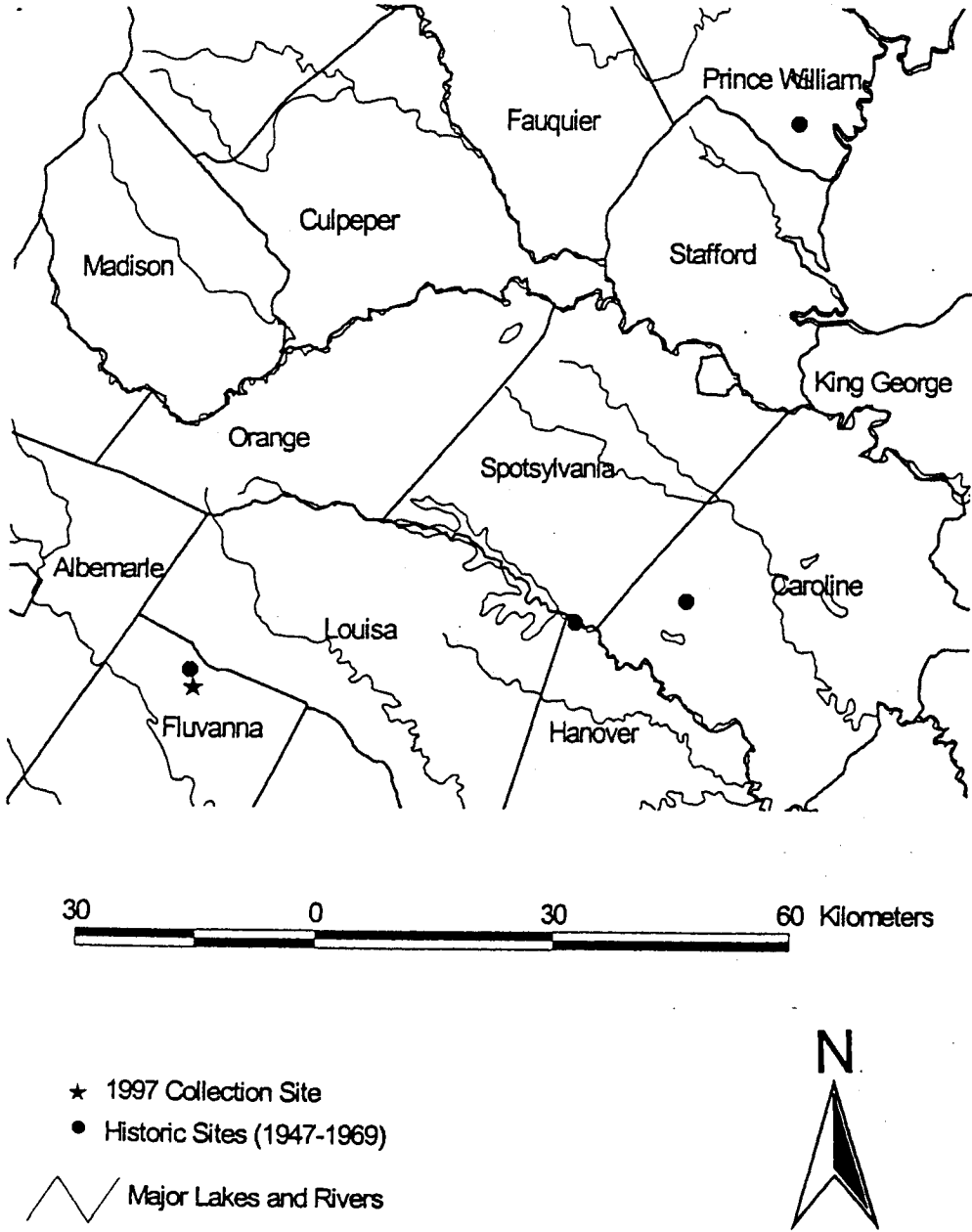


Fig. 1. Known localities for *Sigara depressa* in Virginia: details as in figure subheading.

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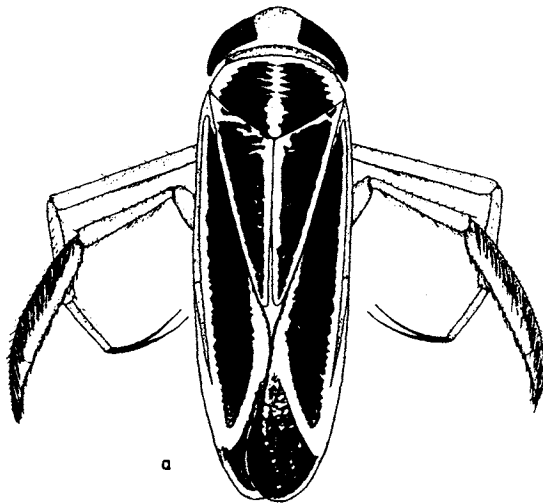


Fig. 2. *Sigara depressa* Hungerford. Dorsal aspect of adult (from Bobb, 1974).