

**A NEW HOST FOR *JALYSUS SPINOSUS*
(HETEROPTERA: BERYTIDAE)
AND NEW HOST FAMILY (COMMELINACEAE)
FOR STILT BUGS¹**

A. G. Wheeler, Jr.²

ABSTRACT: Nymphs of the stilt bug *Jalysus spinosus* were observed on the densely pubescent *Tradescantia hirsuticaulis* on Glassy Mountain in South Carolina, but they were absent from coexisting colonies of the glabrous *T. ohiensis*. This host association supports the characterization of metacanthine berytids as specialists on glandular-hairy plants. *Tradescantia hirsuticaulis* is the first member of the spiderwort family, Commelinaceae, known to serve as a berytid host.

Four species of the stilt bug genus *Jalysus* Stål occur in North America: *J. caducus* (Distant), known in the United States only from Arizona and Texas; *J. balli* Harris, a Mexican species recorded from Arizona; and the more wide-ranging *J. spinosus* (Say) and *J. wickhami* Van Duzee (Froeschner and Henry 1988, Henry and Froeschner 1992). Following its original description (Van Duzee 1906), *J. wickhami* was reduced to a variety of *J. spinosus* (Van Duzee 1914) but was reinstated as a full species by Harris (1941).

Until recently, *J. spinosus* was assumed to be the most commonly collected and most widely distributed of these berytid species. Because *J. wickhami* was described from Arizona and California, early workers apparently assumed it was a western species. It has been shown, however, that *J. wickhami* occurs in southern Canada and throughout the United States and also extends into Mexico. In contrast, *J. spinosus* is generally restricted to southern Canada and the United States east of the 100th meridian (Wheeler and Henry 1981, Scudder 1991).

It has also been demonstrated that the *Jalysus* species used in nearly all biological studies in North America has been misidentified. *Jalysus wickhami* – not *J. spinosus* – is an occasional pest of tomato. It is also the species whose life history has been studied on onagraceous plants, and is the natural enemy augmentatively released in the southern states to help control aphids and lepidopteran pests of tobacco (Wheeler and Henry 1981 and references therein).

Whereas the polyphagous *J. wickhami* uses diverse hosts, particularly glandular-hairy dicots of the Malvaceae, Onagraceae, Oxalidaceae, Scrophulariaceae, and Solanaceae, *J. spinosus* has a much narrower host range – mostly monocots. Its primary hosts appear to be grasses of the genus *Panicum*, although nymphal development also occurs on a few dicots, namely the ona-

¹ Received February 17, 1994. Accepted March 6, 1994.

² Bureau of Plant Industry, Pennsylvania Department of Agriculture, Harrisburg, PA 17110.

graceous enchanter's nightshade, *Circaea lutetiana* L. (Wheeler 1986; see also Wheeler and Henry 1981, Wheeler and Schaefer 1982). Here I record another monocot, *Tradescantia hirsuticaulis* Small, as a host plant of *J. spinosus*, the first commelinaceous host for any berytid.

STUDY SITE AND HOST PLANTS

Glassy Mountain Heritage Preserve is a natural area northeast of Pickens, South Carolina (Pickens Co.). Managed by the state's Wildlife and Marine Resources Department, Glassy Mountain is a 26-ha, relatively undisturbed monadnock or isolated mountain that has withstood the forces of natural erosion in the piedmont. This granitic dome (elev. 518 m) is similar in appearance to the nearby Table Rock Mountain and structurally similar to Georgia's Stone Mountain, probably the best-known monadnock in the southeastern United States (Nelson 1988).

The berytid host *T. hirsuticaulis*, a rather uncommon member of the spiderwort family Commelinaceae, is found in dry woods and rock outcrops from North Carolina to Florida and in Arkansas and Texas. This spiderwort species is characterized by hirsute stems and generally pubescent leaves (Rickett 1967, Radford *et al.* 1968). On Glassy Mountain, it grows on several rock outcrops near the summit. Observations on *J. spinosus* were made in colonies of *T. hirsuticaulis* that were growing with *T. ohiensis* Raf. southeast of the promontory near the forest tower. Voucher specimens of this berytid have been deposited in the collection of the National Museum of Natural History, Washington, D. C.; host plants have been deposited in the A. C. Moore Herbarium, University of South Carolina, Columbia.

HOSTS OF *JALYSUS SPINOSUS*

On 4 May 1991, adults of *J. spinosus*, including mating pairs, were common on *T. hirsuticaulis*, which was in full bloom. This berytid overwinters in the adult stage (Wheeler and Stimmel 1988), and nymphs were not yet present. No *J. spinosus* adults were collected in early May from the essentially glabrous *T. ohiensis*, even though its colonies coexisted with those of *T. hirsuticaulis*.

In 1993, nymphs were abundant on 30 May on *T. hirsuticaulis* that had finished blooming. First through fourth instars and one adult were observed on fruits, pedicels, and other plant parts. As in 1991, no life stages could be found on *T. ohiensis*, including colonies in which stems of the two species were touching. Nymphs and adults were also present on the rock outcrop on the panic-grasses *Panicum sphaerocarpon* Elliott and *P. laxiflorum* Lam.

DISCUSSION

Metacanthine berytids, including *Jalysus* species, develop mainly on well-glanded, pubescent hosts, feeding preferentially on glandular hairs or on arthropods entrapped by plant secretions. Such use of glandular-hairy plants, although atypical among heteropterans, is also characteristic of many dicyphine mirids (Wheeler and Schaefer 1982 and references therein). The use of *T. hirsuticaulis* as a host of *J. spinosus* on Glassy Mountain, and its apparent absence from the glabrous *T. ohiensis*, is consistent with previous biological studies of this berytid genus. *T. hirsuticaulis* becomes the only non-poaceous monocot known as a host of this stilt bug and the first member of the family Commelinaceae (and order Commelinales) recorded as a berytid host plant..

ACKNOWLEDGMENTS

I am grateful to S. H. Bennett and J. A. Sorrow (South Carolina Wildlife & Marine Resources Dept.) for permission to collect insects at Glassy Mountain Heritage Preserve, J. B. Nelson (Dept. of Biological Sciences, University of South Carolina) for plant identifications, and T. J. Henry (Systematic Entomology Laboratory, USDA, c/o U. S. National Museum) and E. R. Hoebeke (Dept. of Entomology, Cornell University) for reviewing the manuscript.

LITERATURE CITED

- Froeschner, R. C. and T. J. Henry.** 1988. Family Berytidae Fieber, 1851 (=Neididae Kirkaldy, 1902; Berytinidae Southwood and Leston, 1959). The stilt bugs. pp. 56-60 *In*: T. J. Henry and R. C. Froeschner (eds.), Catalog of the Heteroptera, or true bugs, of Canada and the continental United States. E. J. Brill, Leiden.
- Harris, H. M.** 1941. Concerning Neididae, with new species and new records for North America. Bull. Brooklyn Entomol. Soc. 36: 105-109.
- Henry, T. J. and R. C. Froeschner.** 1992. Corrections and additions to the "Catalog of the Heteroptera, or true bugs, of Canada and the Continental United States." Proc. Entomol. Wash. 94: 263-272.
- Nelson, J.** 1988. Mountain islands on a piedmont sea. South Carolina Wildlife 35(6): 42-49.
- Radford, A. E., H. A. Ahles, and C. R. Bell.** 1968. Manual of the vascular flora of the Carolinas. Univ. North Carolina Press, Chapel Hill. 1183 pp.
- Rickett, H. W.** 1967. Wild flowers of the United States: Volume 2: The southeastern states (2 parts). McGraw-Hill, New York. 688 pp.
- Scudder, G. G. E.** 1991. The stilt bugs (Heteroptera: Berytidae) of Canada. Can. Entomol. 123: 425-438.
- Van Duzee, E. P.** 1906. New North American Heteroptera. Entomol. News 17: 384-391.
- Van Duzee, E. P.** 1914. A preliminary list of the Hemiptera of San Diego County, California. Trans. San Diego Soc. Nat. Hist. 2: 1-57.
- Wheeler, A. G., Jr.** 1986. A new host association for the stilt bug *Jalysus spinosus* (Heteroptera: Berytidae). Entomol. News 97: 63-65.
- Wheeler, A. G., Jr. and T. J. Henry.** 1981. *Jalysus spinosus* and *J. wickhami*: Taxonomic clarification, review of host plants and distribution, and keys to adults and 5th instars. Ann. Entomol. Soc. Am. 74: 606-615.
- Wheeler, A. G., Jr. and C. W. Schaefer.** 1982. Review of stilt bug (Hemiptera: Berytidae) host plants. Ann. Entomol. Soc. Am. 75: 498-506.
- Wheeler, A. G., Jr. and J. F. Stimmel.** 1988. Heteroptera overwintering in magnolia leaf litter in Pennsylvania. Entomol. News 99: 65-71.



Wheeler, A. G. 1994. "A New Host For *Jalysus spinosus* (Heteroptera, Berytidae) And New Host Family (Commelinaceae) For Stilt Bugs." *Entomological news* 105, 201–203.

View This Item Online: <https://www.biodiversitylibrary.org/item/20581>

Permalink: <https://www.biodiversitylibrary.org/partpdf/12563>

Holding Institution

Smithsonian Libraries

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: American Entomological Society

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.