

## Additions to the known range of *Bembidion rufotinctum* Chaudoir (Coleoptera: Carabidae: Bembidiini)

**Paul M. Choate**

Dept. Entomology and Nematology  
Bldg. 970 Hull Rd., University of Florida  
Gainesville, FL 32611

**Angela L. Choate**

Dept. Soil Science, McCarty Hall  
University of Florida  
Gainesville, FL 32611

**Abstract:** Previously known from northeastern United States and Virginia, *Bembidion rufotinctum* Chaudoir is recorded from North Carolina, Tennessee, South Carolina, and Georgia. Habitat preference for this species appears to remain the same throughout its range. Specimens may be found hiding in cracks in rocks exposed to rapidly flowing water. The presence of this species may be indicated by *Pentacora ligata* (Say) (Hemiptera: Saldidae) that occurs on the same rocks.

### Introduction

Members of the carabid genus *Bembidion* are small (< 7mm) and easily overlooked by collectors. Many species are known from a few localities. Individuals of *Bembidion rufotinctum* Chaudoir are invariably found on rocks that are frequently exposed to flooding, often in midstream, and always adjacent to rapidly-flowing water (Davidson 1981). The history of this species and its known range are reviewed by Davidson (*loc. cit.*). Bousquet and Laroche (1993) added Pennsylvania, New York, and Quebec without specific citations. Their records are included in Fig. 1.

We have noticed that where *Bembidion rufotinctum* occurs, the saldid *Pentacora ligata* Say also occurs. Habitat for *Pentacora ligata* is described as "found on large gray rocks in rapidly flowing-streams. In locations where there are rock-bottomed streams, these insects may be seen resting on rocks projecting above the water or on those lying along the shore" (Bobb, 1974). Distribution for this species is given as most of the states east of the Mississippi River and for eastern Canada. Schuh (1967) listed records for Illinois, Indiana, Minnesota, New York, Ohio, Tennessee, Wisconsin, and Ontario. Bobb (*loc. cit.*) listed the range as Quebec and Maine, west to Iowa and Manitoba, and south in the Appalachians to Georgia. Brigham *et al.* (1982) stated that *Pentacora ligata* (Say) occurred in large numbers in the Piedmont only on large emergent boulders and logs in rivers (French Broad, Chattooga, Cullasaja, and Whitewater).

During the summer of 1988 we visited the North Carolina mountains for a white-water kayak trip from North Carolina into Tennessee on the Nolichucky River. During the trip, rocks similar to those described by Davidson (1981) were observed along the shoreline and in midstream. Several specimens of *Bembidion rufotinctum* were flushed from their hiding places of alga-encrusted crevices.

Since this river flows from North Carolina into Tennessee, records were obtained from both states. During this same trip a visit to Linville Falls in the Blue Ridge Mts. produced additional North Carolina records. Linville Falls specimens were collected below the falls in a habitat similar to the one described above. Also during 1988 a trip to north-western Georgia revealed habitat suitable for this species. The saldid mentioned above was present in abundance. However, the season was late fall, and no beetles were found.

In the summer of 1990, a trip was made to the Chattooga River in northeastern Georgia along the South Carolina border. We suspected that this species should also occur here since the river appeared to contain the same habitat as seen in other states. Specimens were found on rocks midstream in the river at Rt. 76 bridge, 9 miles east of Clayton, Georgia.

The known range of this species is indicated in Fig. 1. Based on our observations in northwest Georgia, we anticipate that this species may occur as far west as northern Alabama. It is highly probable that river systems in the Tennessee River

drainage once were suitable habitat for this species, but damming of larger rivers into reservoirs has fragmented a once larger range.

#### New locality records for *Bembidion rufotinctum* Chaudoir

**NORTH CAROLINA:** Mitchell Co: Nolichucky River, 2 mi. East of Tennessee State line, 28-VI-1988, 5 exx. (P. M. & A. L. Choate); Burke Co: Linville Falls 27-VI-1988, 6 exx. (P. M. & A. L. Choate); **TENNESSEE:** Unicoi Co: Nolichucky River, State line, 28-VI-1988, 6 exx. (P. M. & A. L. Choate); **SOUTH CAROLINA:** Oconee Co: Rt. 76, Chattooga River, 7-VI-1990, 3 exx. (P.M. & A. L. Choate); **GEORGIA:** Rabun Co: Rt. 76, Chattooga River, 7-VI-1990, 4 exx. (P.M. & A.L. Choate).

#### References

- Brigham, A. R., W. U. Brigham, and A. Grilka, eds. 1982. Saldidae, pp. 6.59 - 6.66 *In: Aquatic insects and Oligochaetes of North and South Carolina.* Midwest Aquatic Enterprises, Mahomet, Illinois.
- Bobb, Marvin L. 1974. The insects of Virginia: no. 7. The aquatic and semi-aquatic Hemiptera of Virginia. Research Division Bulletin 87, Virginia Polytechnic Institute and State University, Blacksburg, Va. 196 pp.
- Bousquet, Y., and A. Laroche. 1993. Catalogue of the Geodephaga (Coleoptera: Trachypachidae, Rhyssidae, Carabidae including Cicindelini) of America north of Mexico. *Memoirs Entomological Society Canada* no. 167, 397 pp.
- Davidson, R. 1981. Note on the distribution and habitat of *Bembidion (Pseudoperiphus) rufotinctum* Chaudoir (Coleoptera: Carabidae) in Vermont, New Hampshire, and Virginia. *Coleopterists Bull.* 35: 127-128.
- Schuh, T. 1967. The shore bugs (Hemiptera: Saldidae) of the Great Lakes region. *Contributions of the American Entomological Institute* 2(2):1-27.

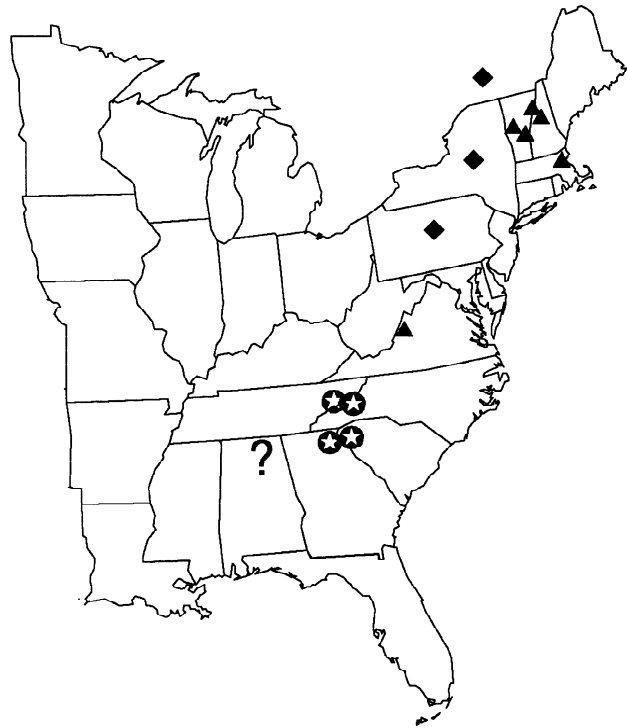


Fig. 1. Distribution of *Bembidion rufotinctum* Chaudoir. ⊗= new records; literature records: ◆= (Bousquet and Laroche, 1993), ▲ (Davidson, 1981).