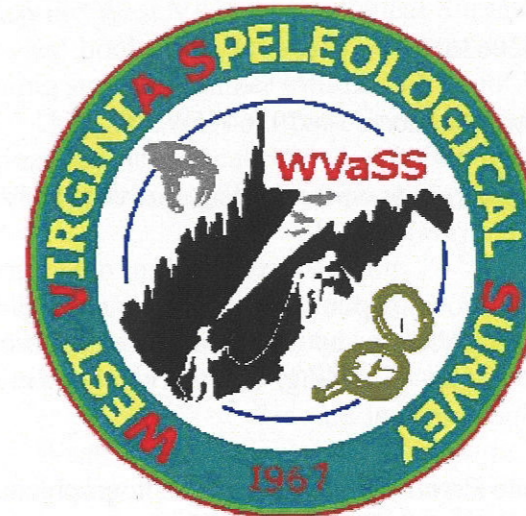


***THE INVERTEBRATE CAVE FAUNA OF  
WEST VIRGINIA, SECOND EDITION***



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Order Diptera

Family Sphaeroceridae

*Spelobia tenebrarum* (Aldrich 1897)

Type locality - Wyandotte Cave, Crawford Co., Indiana

West Virginia records - **Greenbrier Co.**: Organ Cave.

This fly, often associated with dung, is widespread in caves throughout the eastern United States. The single West Virginia record is just a reflection of the neglect accorded Diptera by most collectors, rather than rarity. This is a very interesting species because it appears to be widespread and yet limited to caves (Marshall and Peck 1985). See distribution map (Fig. 41).

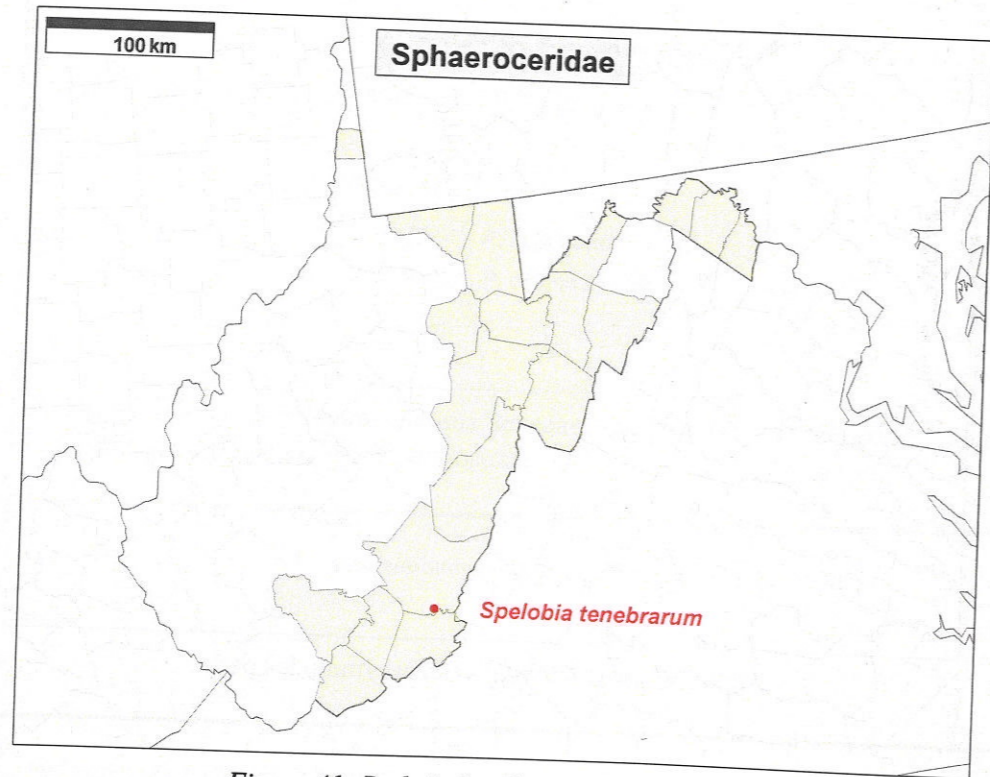


Figure 41: Red circle - *Spelobia tenebrarum*.

Class Malacostraca

Order Amphipoda

Family Crangonyctidae

*Stygobromus allegheniensis* (Holsinger 1967)

Type locality - Ilion Spring, Herkimer Co., New York

West Virginia records - **Berkeley Co.**: Caskey Spring; **Hardy Co.**: Dyers Cave; **Jefferson Co.**: Spring Hill Farm Spring; **Morgan Co.**: Rock Ford Spring on Cacapon River.

This species is clearly stygobiotic, and like all other *Stygobromus*, has no eye or pigment. In addition to caves, it occupies a wide variety of subterranean habitats including springs and the underflow of streams (hyporheos). Its broad habitat tolerance may explain its wide geographic range. See distribution map (Fig. 42).

*Stygobromus biggersi* Holsinger 1978

Type locality - Ogdens Cave, Frederick Co., Virginia

West Virginia records - **Jefferson Co.**: Ditmer Cave.

This species is also known from caves in Maryland, Pennsylvania, and Virginia within the Potomac River drainage. It is primarily an inhabitant of cave pools and is often associated with the isopod *Caecidotea pricei*. See distribution map (Fig. 42).

*Stygobromus cooperi* (Holsinger 1967)

Type locality - Silers Cave, Jefferson Co., West Virginia

West Virginia records - **Jefferson Co.**: Silers Cave.

This species is limited to its type locality, where it is quite rare. It is almost certainly an epikarstic species, as it was found in drip pools. See distribution map (Fig. 42).

This species is quite similar to *S. emarginatus* except that it is somewhat smaller, reaching a size of 8 mm. It has been found in a variety of subterranean habitats, including epikarst drips and the hyporheos of surface streams. It is also known from several caves in Garrett County, Maryland. See distribution map (Fig. 43).

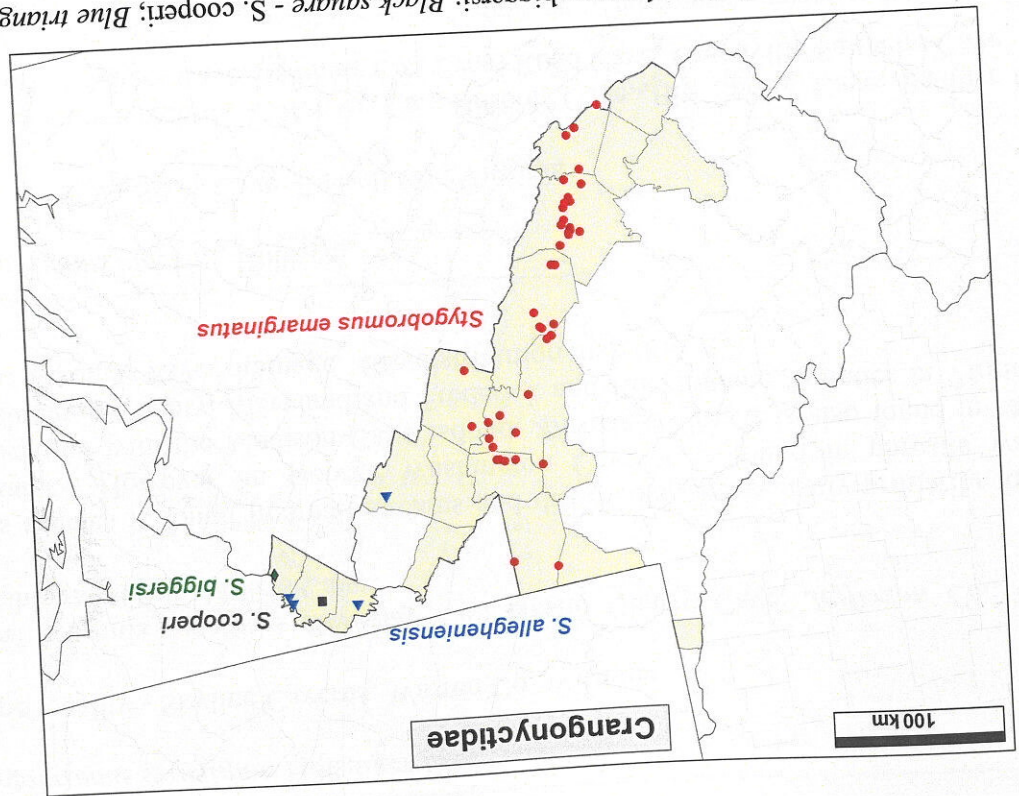
Run, Fox Den Cave.

West Virginia records - *Grant Co.*: Deahart Cave, Kline Gap Cave; *Mineral Co.*: Kites Cave, Ridgeville Cave; *Monongalia Co.*: benthic core sample, Maiden Run Cave No. 1; *Pendleton Co.*: Conrad Cave, Smoke Hole Cave; *Preston Co.*: hyporheos of Daugherty

Type locality - Crabtree Cave, Garrett Co., Maryland

*Stygobromus franzi* Holsinger 1978

Figure 42: Green diamond - *Stygobromus biggersi*; Black square - *S. cooperi*; Blue triangles - *S. allegheniensis*; Red circles - *S. emarginatus*.



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*Stygobromus gracilipes* Holsinger 1967

Type locality - Skyline Caverns, Warren Co., Virginia

West Virginia records - **Berkeley Co.**: Nestle Quarry Cave; **Jefferson Co.**: George Washington Cave, Molers Cave.

This species is found in small streams and drip pools, and is likely primarily found in epikarst. However, in George Washington Cave it is found in phreatic water in association with the Madison Cave Isopod, *Antrolana lira*. It is also found in caves in Washington County, Maryland and Frederick and Rockingham Counties in Virginia, all in the Potomac River drainage. See distribution map (Fig. 43).

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*Stygobromus mackini* Hubricht 1943

Type locality - Sikes Cave, Russell Co., Virginia

West Virginia records - **Mercer Co.**: Beacon Cave, Big Spring Cave, Panther Cave, Thompson School Cave; **Monroe Co.**: Cross Road Cave, Greenville Saltpetre Cave.

*S. mackini* is typically found in drip pools fed by epikarst water, but may also occur in very small first-order streams. The West Virginia populations represent the extreme northern edge of its range. The species has a large range, extending through southwestern Virginia to Roane County, Tennessee, a linear distance of more than 400 km. Females are typically much more common than males (Holsinger 1978). See distribution map (Fig. 43).

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*Stygobromus morrisoni* (Holsinger 1967)

Type locality - Witheros Cave, Bath Co., Virginia

West Virginia records - **Hardy Co.**: Dyers Cave; **Pendleton Co.**: Kenny Simmons Cave.

The distribution of this species is disjunct—two West Virginia caves in the upper Potomac drainage and one Virginia cave in the James River drainage. In Dyers and Kenny Simmons caves, *S. morrisoni* was collected in pools. In Witheros Cave, it was found in a gravel-bottomed stream (Holsinger 1978). They may be distinct species. See distribution map (Fig. 45).

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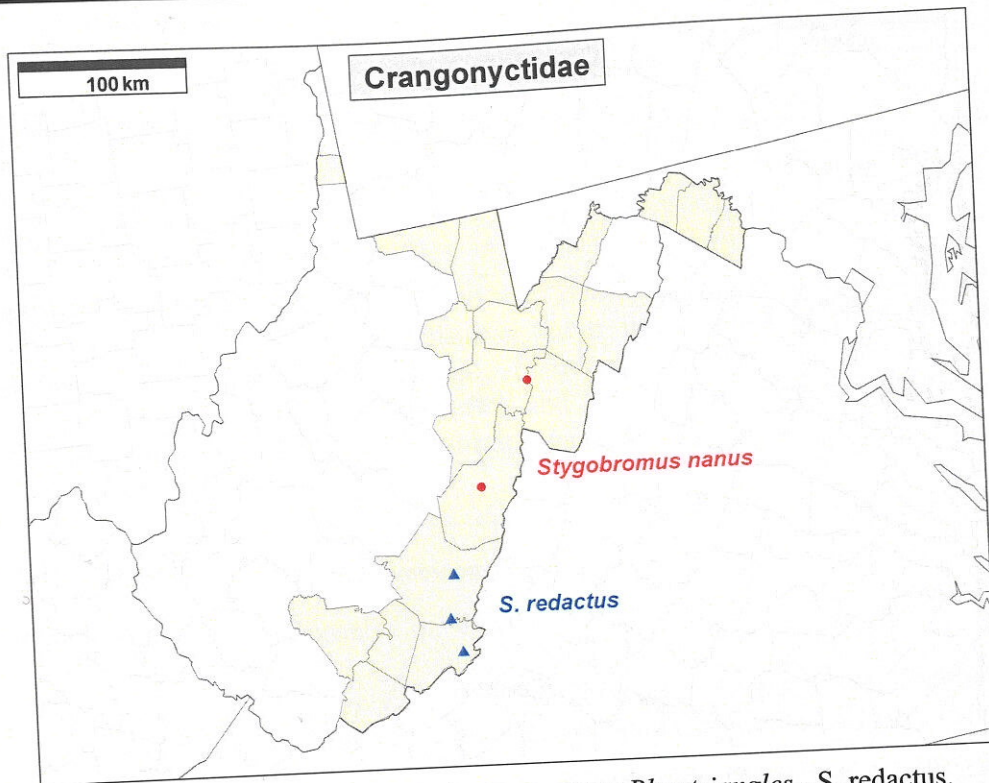


Figure 44: Red circles - *Stygobromus nanus*; Blue triangles - *S. redactus*.

*Stygobromus parvus* (Holsinger 1969)

Type locality - Crawford Cave No. 2, Randolph Co., West Virginia

West Virginia records - **Pocahontas Co.:** Cassell-Windy Cave, Piddling Pit; **Randolph Co.:** Bonner Mountain Cave, Crawford Cave No. 2, Izaak Walton Cave, Shreve-Howell Pit; **Tucker Co.:** Bonner Cave.

This is another very small species whose primary habitat is epikarst. All localities are in the upper Monongahela River basin. See distribution map (Fig. 45).

same area. It is common in small streams (Fong and Culver 1994), and it is sometimes found in epikarstic habitats as well (Holsinger 1978). Except for *Gammarus minus*, numerically it is the most common amphipod, sometimes reaching densities of 40/m<sup>2</sup>. Its relatively small size allows it to avoid competition with most other stream invertebrates (Culver 1970, Culver, Fong and Jernigan 1991). Culver and Holsinger (1969) pointed out a possible trend toward parthenogenesis in the species. Sex ratios appear to be consistently biased approximately 8:1 in favor of females. This may be an adaptation to low density, but it needs further investigation. See distribution map (Fig. 45).

*Stygobromus tenuis potomacus* (Holsinger 1967)

Type locality - bog in Glover Archibald Parkway, District of Columbia

West Virginia records - *Jefferson Co.*: spring near Kabletown.

*S. tenuis potomacus* is widespread in seeps and other superficial groundwater habitats in the Piedmont and Coastal Plain of the middle Atlantic region (Holsinger 1978, Culver, Pipan and Gottstein 2006). Its presence in a karst spring in Jefferson County is a range extension into the Shenandoah Valley. It has not been found in caves, even though the spring is within a few kilometers of several caves, including the relatively well studied George Washington Cave. See distribution map (Fig. 43).

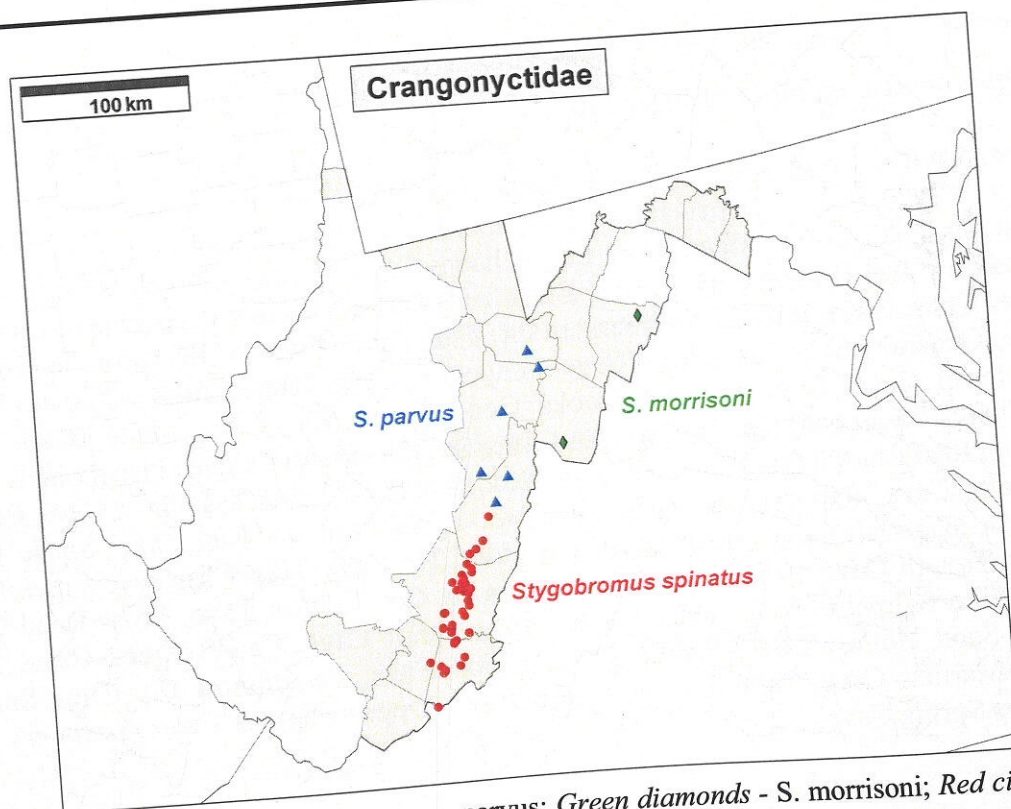


Figure 45: Blue triangles - *Stygobromus parvus*; Green diamonds - *S. morrisoni*; Red circles - *S. spinatus*.