



## ZEALUCTRA TALLADEGA, A NEW SPECIES OF LEUCTRIDAE (PLECOPTERA) FROM ALABAMA, U.S.A.

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### ABSTRACT

A new species of *Zealuctra* Ricker is proposed from the southwestern Appalachian Mountain region of east-central Alabama, U.S.A. *Zealuctra talladega*, sp. n., is described from the adult male and female and distinguished from closely-related *Z. claasseni* and *Z. hitei* by the short, blunt epiproct spine that bears an angular shelf-like anterior projection and a narrow U-shaped cleft along the ninth tergum. The type locality represents a substantial southeastern range extension for the genus.

**Keywords:** Plecoptera, Leuctridae, *Zealuctra*, Alabama

### INTRODUCTION

Ricker & Ross (1969) provided the first comprehensive study of the central United States genus *Zealuctra* (Ricker 1952), including a redefinition of *Z. claasseni* (Frison) and descriptions of six new species. Two new species have since been added by Stark & Stewart (1973) and Kondratieff & Zuellig (2004), and Poulton & Stewart (1991) described the adult male of *Z. wachita* Ricker & Ross. Three species are distributed only in central Texas (*Z. arnoldi* Ricker & Ross, *Z. hitei* Ricker & Ross, *Z. stewarti* Kondratieff & Zuellig), three species are regional endemics within the Interior Plateau region (*Z. cherokee* Stark & Stewart, *Z. wachita*, *Z. warreni* Ricker & Ross), and three species exhibit a broader distribution in the central United States (*Z. claasseni*, *Z. fraxina* Ricker & Ross, *Z. narfi* Ricker & Ross).

A recent collecting trip to the Talladega Mountain and Cheaha Mountain area of east-central Alabama yielded a new species of *Zealuctra*. The type material is deposited in the Illinois Natural History Survey (INHS) and the S. A. Grubbs collection at Western Kentucky University (WKU).

***Zealuctra talladega*, sp. n.** (Figs. 1-4)

**Material.** Holotype ♂, paratype ♀, and 1 paratype ♂, U.S.A., Alabama, Clay Co., unnamed tributary to Barbaree Creek, Rte. 281, 22 km E Talladega,

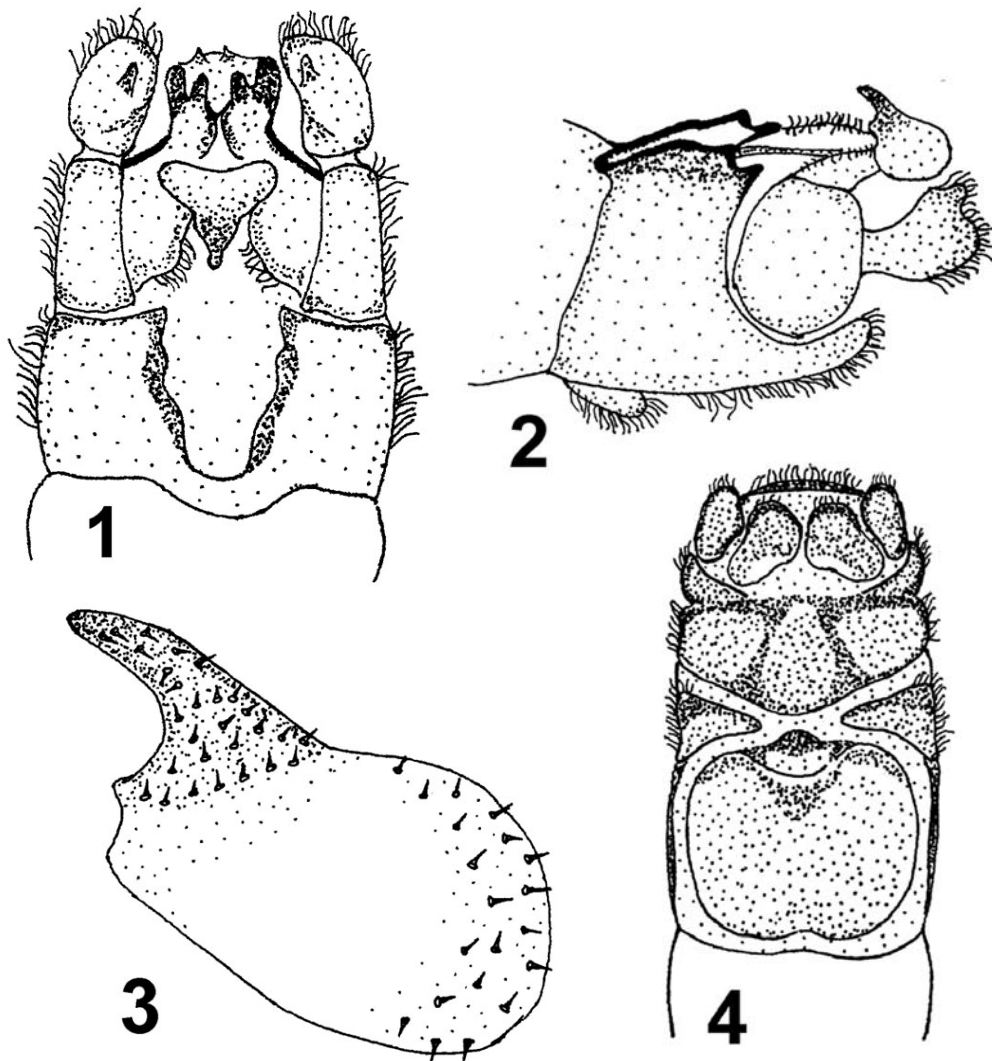
Talladega National Forest, 16 February 2003, S. A. Grubbs and D. E. King-Grubbs (INHS); Paratypes, same but 2 ♂, 2 ♀ (WKU).

**Male.** Forewing length 8.0 mm; body length 7.5-8.0 mm. General body color brown. Cleft of ninth tergum sclerotized along margin with a tooth-like medial projection in posterior half of narrow U-shaped anterior margin (Fig. 1). Cerci sclerotized mainly along outer margin and bearing both a small dorsomedial hump and a subapical sclerotized tooth (Fig. 1). Epiproct with a single, short, curved spine that terminates in a blunt tip (Fig. 2, 3). Epiproct tip covered in spines noticeable only at higher magnification (>200x). Epiproct bears a raised shelf-like projection anterior to the spine whose angle is set at approximately 90°. Length of vesicle 1.1-1.2X width.

**Female.** Forewing length 9.0-9.5 mm; body length 8.0-9.5 mm. Sternum 7 produced and sclerotized along posterior margin except for middle third which has a broad shallow notch, is lightly pigmented, and bears a rounded lightly-pigmented lobe (Fig. 4).

**Larva.** Unknown.

**Diagnosis.** *Zealuctra talladega* most closely resembles the two species, *Z. claasseni* and *Z. hitei*, that each bear a single epiproct spine and a raised step- or shelf-like projection anterior to the spine. However, the epiproct tips of *Z. claasseni* and *Z. hitei* are more



Figs. 1-4. *Zealuctra talladega*. 1. Male terminalia, dorsal. 2. Male terminalia, lateral. 3. Male terminalia, expanded lateral view of epiproct. 4. Female terminalia, ventral.

slender and acute in contrast to the bluntly-rounded end of *Z. talladega*. The projection of *Z. claasseni* is faint, crenulate, and slightly raised from the inner, anterior surface of the epiproct, in *Z. hitei* the projection angle is similarly faint and obtuse, while in *Z. talladega* the projection angle is approximately 90°. The short robust epiproct spine of *Z. talladega* is easily distinguished from the long, slender epiproct spine of *Z. stewarti*. *Zealuctra talladega* is distinguished from *Z. arnoldi*, *Z. fraxina* and *Z. warreni* by the presence of a single epiproct spine. *Zealuctra arnoldi* and *Z. fraxina* possess a small cusp-

like spine posterior to the main spine and *Z. warreni* bears two well-defined spines. In addition, the inner, anterior margin of the epiproct spines of *Z. cherokee*, *Z. narfi* and *Z. wachita* each lack projections.

The narrow cleft on the ninth abdominal tergum is similar only to *Z. claasseni* and *Z. hitei*. Both *Z. claasseni* and *Z. hitei* also have a tooth-like projection in the posterior half yet the anterior portion of the cleft is more V-shaped than in *Z. talladega*. The 7<sup>th</sup> sternum of the female of *Z. talladega* is also similar to *Z. claasseni* and *Z. hitei*. The lightly-pigmented posteriomedial region of the 7<sup>th</sup> sternum

distinguishes *Z. talladega* from the latter two species. **Remarks.** *Zealuctra talladega* is documented only from the type locality. Similar habitats along Talladega Mountain likely will yield additional populations. This region of east-central Alabama includes the type localities of *Beloneuria jamesae* (Stark & Szczytko 1976) and *Hansonoperla cheaha* (Kondratieff & Kirchner, 1996), each with limited geographic distributions.

**Etymology.** The specific name is in reference to Talladega Mountain. The unnamed stream at the type locality drains the eastern flank of this mountain ridge.

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