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*Acroneuria yuchi* (Plecoptera: Perlidae)  
a New Stonefly from Virginia, U.S.A.

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*Acroneuria yuchi* (Plecoptera: Perlidae),  
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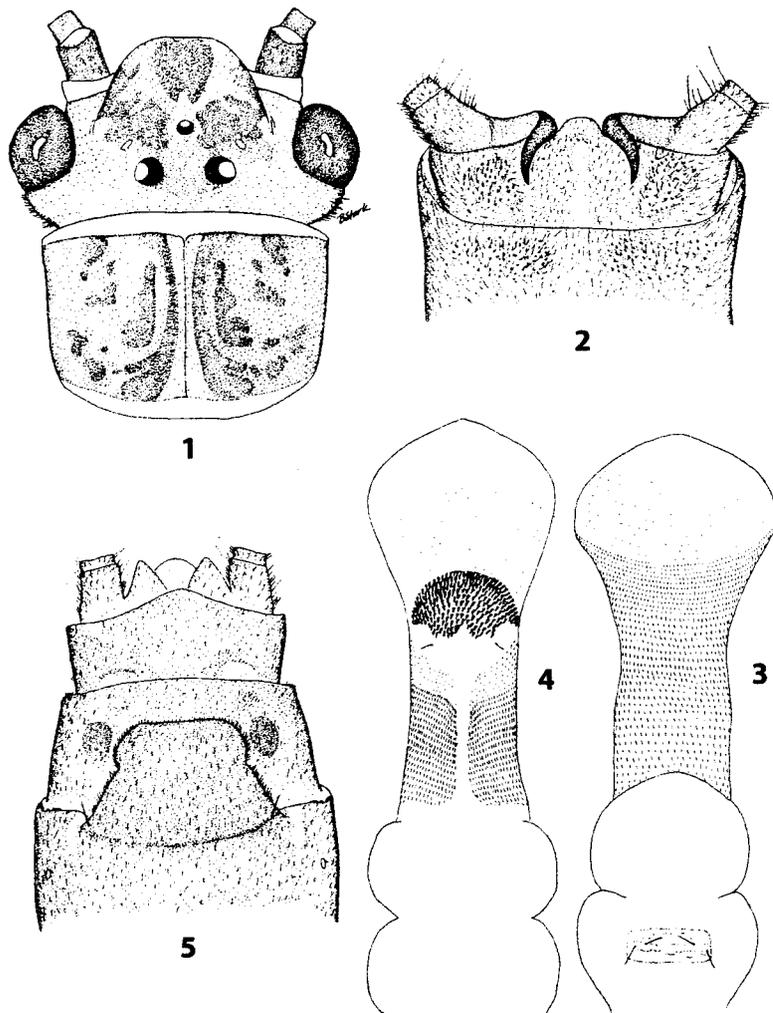
ABSTRACT

*Acroneuria yuchi*, new species, is described from male, female and egg specimens collected in Lee Co., Virginia, U.S.A. The new species is distinct from all known *Acroneuria* in having the egg chorion covered in hexagonal follicle cell impressions.

*Key Words:* U.S.A., Virginia, stonefly, Perlidae, *Acroneuria*, new species

Following Stark & Gaufin's (1976) review of *Acroneuria*, several systematic changes were proposed in the next 17 years, which led to recognition of new taxa (Kondratieff & Kirchner 1988, 1993; Poulton & Stewart 1991; Stark & Brown 1991). More recently Grubbs & Stark (2004) and Stark & Kondratieff (2004) each proposed a new species of *Acroneuria* bringing the total number of eastern Nearctic members of the genus to 17. It was surprising, therefore, to find yet another undescribed member of this group among material collected in southwestern Virginia. In order that this distinctive species might be included in a forthcoming study of the eastern

Nearctic Perlidae (Stark, in manuscript) we are providing the following description.



Figs. 1-5. *Acroneuria yuchi*. Adult structures. 1, Male head and pronotum. 2, Male terga 9 and 10. 3, Aedeagus ventral. 4, Aedeagus dorsal. 5, Female sterna 8-10.

*Acroneuria yuchi* Stark & Kondratieff, new species.

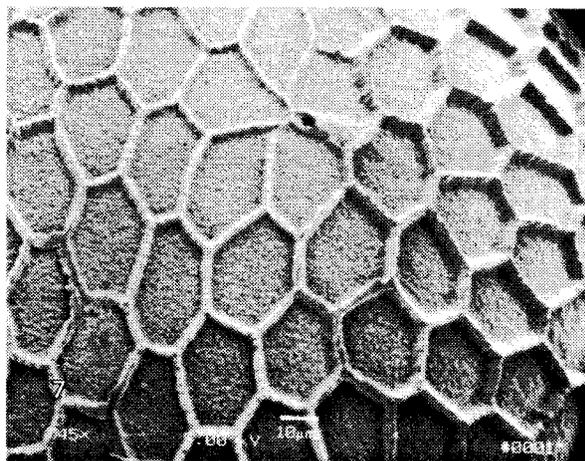
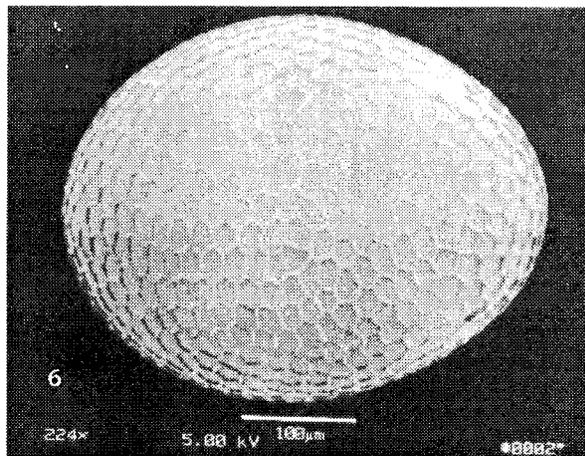
Figs. 1-7

*Types.*— Holotype ♂, 4 ♂ and 2 ♀ paratypes from Virginia, Lee Co., The Cedars Natural Areas Preserve, ca. 4 miles W Jonesville, Dry Creek barrens, 22 June 2000, C. S. Hobson. Holotype deposited in the Virginia Museum of Natural History, Martinsville, paratypes in the C. P. Gillette Museum of Arthropod Diversity, and the National Museum of Natural History, Smithsonian Institution, Washington, D.C.

*Diagnosis.*— Males of the new species are most similar to *A. frisoni* Stark & Brown, 1991, but differ primarily in aedeagal armature. In *A. frisoni* the ventral patch covers about half of the aedeagal surface, the apical patch is chevron shaped and the basal patch is slightly wider than the apical patch. In *A. yuchi* the ventral patch covers about 2/3 of the surface, the apical patch is butterfly shaped and the basal patch is more than twice as wide as the apical patch (Fig. 3). The female subgenital plate is similar to that of *A. evoluta* Klapálek (Stark & Brown, 1991), but the egg for *A. yuchi* differs from that of any known species in having the surface completely covered with hexagonal follicle cell impressions (Figs. 6, 7).

*Adult habitus.*— Head pattern with a pale to moderately dark brown interocellar patch extending to median ocellus and prominent dark brown patches lateral to and anterior to median ocellus (Fig. 1); occiput pale, pronotum with scattered brown rugosities. Wing membrane transparent, veins dark brown. Femora dark brown on dorsum, paler on most of anterior face but dark along distal margin. Tibiae dark brown basally, along outer margin and at distal tip.

*Male.*— Forewing length 17-18 mm. Hammer typical, paraprocts slender, recurved and apically acute (Fig. 2); abdominal terga 9-10 with lateral patches of sensilla basiconica. Venter of apical aedeagal lobe armed rather uniformly over most of length by dark brown spines; apical zone armed with smaller, paler spines (Fig. 3); basal lobe with a median, quadrate, callused appearing area bearing a few long setae. Dorsum with apical patch somewhat butterfly shaped in outline and composed of prominent pointed brown spines; basal patch narrowly divided along mid line (Fig. 4); area beyond apical patch armed with finer and paler spines.



Figs. 6-7. *Acroneuria yuchi*. Egg structures. 6, Entire egg lateral. 7. Chorionic detail of follicle cell impressions and micropyle.

*Female*.—Forewing length 20-23 mm. Subgenital plate reaching beyond mid length of sternum 9; lateral margins strongly convergent to beyond mid length forming a subapical constriction offsetting a wide apical tab (Fig. 5). Vagina lined with dark brown spinules.

*Egg*.—Length about 0.42 mm, width about 0.33 mm. Collar absent (Fig. 6), apex of collar end completely covered with hexagonal follicle cell impressions. Outline oval, chorion completely covered with hexagonal follicle cell impressions (FCI) (Figs. 6-7); walls of FCIs thin and irregularly scalloped along rim, giving a beaded appearance (Fig. 7); FCI floors flat and granular; greatest FCI width about 0.04 mm. Micropyles located midway between equator and posterior pole; orifices set in scoop-like structures, micropylar canals extend about 0.025 mm along chorionic surface (Fig. 7).

*Nymph*.—Unknown.

*Name*.—"Yuchi," honors the early inhabitants of the east Tennessee and southwest Virginia. The Tsoyaha (Yuchi) were a large powerful tribe according to reports of the Desoto Expedition, evidence also indicates that disease/epidemics ravaged the Yuchi after the Spanish visited the East Tennessee area. The Yuchi were known to have widely scattered villages that ranged from Florida to Illinois, and from the South Carolina coast to the Mississippi River.

#### ACKNOWLEDGMENTS

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