



ADDITIONAL CHARACTERS IN *PERLESTA BAUMANNI* STARK (PLECOPTERA: PERLIDAE), WITH NOTES ON OTHER OUACHITA MOUNTAIN SPECIES

Bill P. Stark

Box 4045, Department of Biology, Mississippi College, Clinton, Mississippi, U.S.A. 39058
E-mail: stark@mc.edu

ABSTRACT

The male aedeagus for *Perlesta baumanni* Stark, a dark species known from 7 sites in western Arkansas and eastern Oklahoma, is described for the first time, and collection records for *P. fusca* Poulton & Stewart and *P. browni* Stark are given.

Keywords: *Perlesta*, male genitalia, aedeagus, Ouachita Mountains

INTRODUCTION

Perlesta baumanni Stark is one of three new *Perlesta* species proposed by Stark (1989) from the Ouachita Mountains of southeastern Oklahoma and western Arkansas. Poulton & Stewart (1991) described *P. fusca* from the Ouachita region of western Arkansas, and may have included Oklahoma records for this species, although other than the type locality, only watershed distributions were recorded. Stark (1989) and Poulton & Stewart (1991) also recognized two earlier described species, *P. cinctipes* (Banks) and *P. decipiens* (Walsh), from the region but Poulton & Stewart (1991) apparently overlooked *P. bolukta* Stark, one of the species described by Stark (1989) from the region.

Perlesta baumanni was first collected by R.W. Baumann and S.W. Szczytko on 30 April 1972, and independently, two weeks later, by B.P. Stark on 13 May 1972. Both groups of collectors recognized their series represented a probable new species, but at that time the importance of squeezing male *Perlesta* to evert the internal genitalia was not recognized. Later, it was impossible to evert the aedeagus for study and the only subsequent material came from a few,

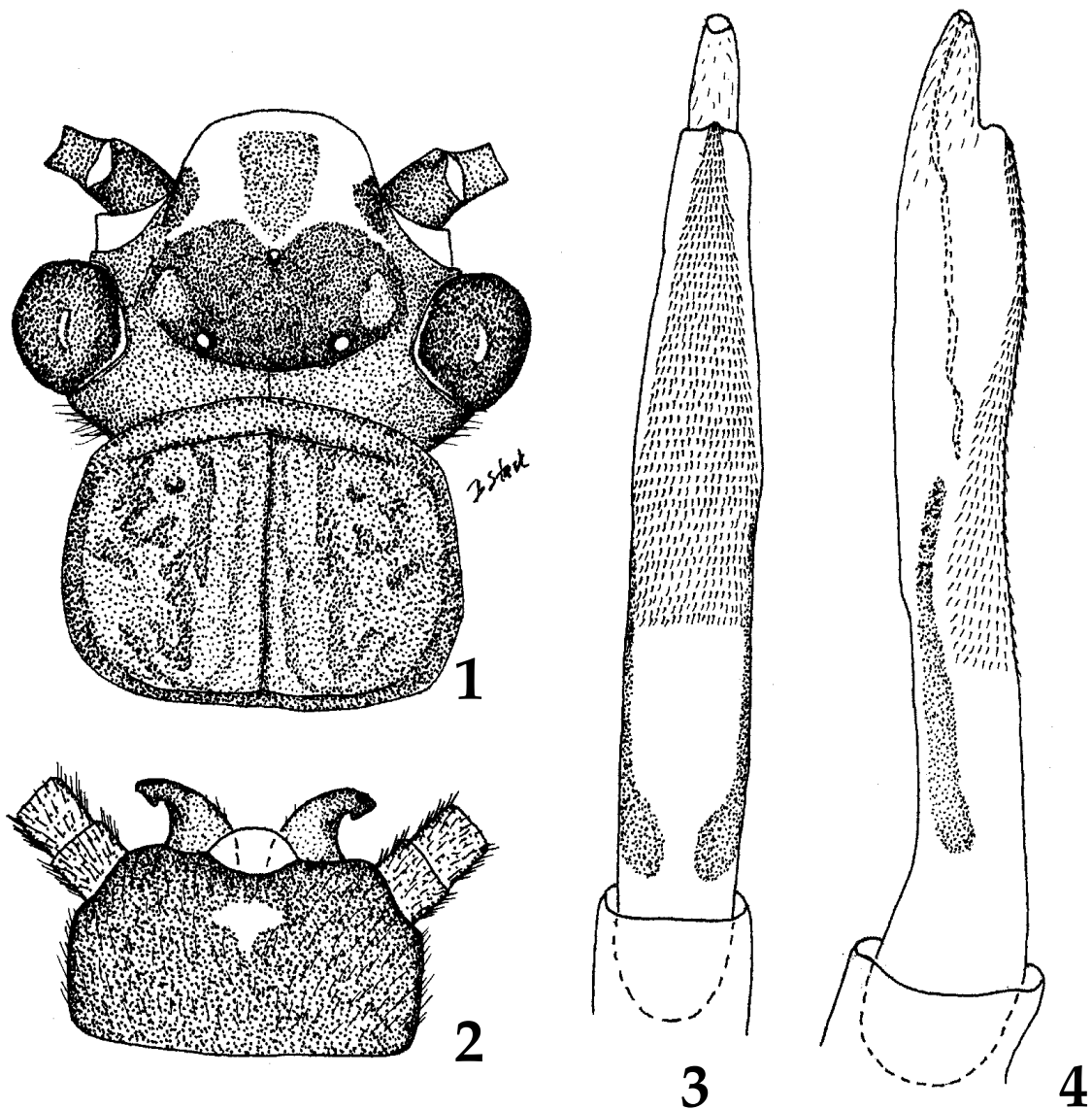
mostly reared and somewhat teneral specimens collected in 1984-85 by B.C. Poulton. Consequently, the aedeagal structure and the egg have never been described (Stark 2004), and *P. baumanni* is recognized primarily by the almost uniformly pigmented black wings (see Fig. 320 in Poulton & Stewart), the outwardly curved paraprocts of the male, and by the short lobes of the female subgenital plate (Stark 1989, 2004; Poulton & Stewart 1991). Recently, I collected fresh material of this species and everted the aedeagus for several male specimens. Unfortunately, no eggs were obtained even from females maintained alive with caged males for a week. The following descriptive notes are provided in order to facilitate recognition of this interesting species. Specimens are deposited in the Stark collection, Mississippi College, Clinton, Mississippi.

Perlesta baumanni Stark, 1989

Perlesta baumanni Stark, 1989:276. Holotype ♂ (United States National Museum), Mill Creek, near Y-City, Scott Co., Arkansas

Perlesta baumanni: Poulton & Stewart, 1991:39

Perlesta baumanni: Stark, 2004:90



Figs. 1-4. *Perlesta baumanni*. 1. Head and pronotal color pattern; 2. Male tergum 10; 3. Aedeagus, dorsal aspect; 4. Aedeagus, lateral aspect.

Material examined. Arkansas: Scott Co., Tan-a-hill Creek, Y-City, 13 May 2007, B. Stark, 1 ♂. Oklahoma: Latimer Co., Turkey Creek, Hwy 270 east of Red Oak, 12 May 2007, B. Stark, 7 ♂. LeFlore Co., Hodge Creek, Holsom Creek Road, 2 miles west of Hwy 270, 13 May 2007, B. Stark, 10 ♂, 5 ♀.

Adult habitus. Color pattern.- The head is darkly pigmented, particularly on the area forward of the epicranial suture (Fig. 1); the black suture line extends laterally beyond the ocelli about midway to the eye. Dark pigment extends laterally in front of the eye to

the margins of the head, but an obscure pale spot interrupts the dark pigment anterolaterad to the ocelli. Forward of the M-line a dark median area is surrounded by pale pigment.

The pronotum is dark brown with darker rugosities and black sutures. Abdominal terga 6-10 are dark, with tergum 10 very dark over most of the surface (Fig. 2); abdominal sterna 8-10 are dark brown to black. Apical cercal segments are black, but several segments at midlength are banded with dark apices and pale basal bands.

Male aedeagus. Aedeagal tube + sac long and slender, caecum very small (Figs. 3-4). Dorsal patch broad basally, covering entire surface, but patch narrows gradually to a point on the caecum from near midlength. Lateral sclerites slender and projecting forward beyond base of dorsal patch.

DISCUSSION

Perlesta baumanni (see Material list above) was collected together with *P. fusca* at the LeFlore Co., Oklahoma (5 ♂, 2 ♀) and Scott Co., Arkansas (2 ♂, 2 ♀) sites, and with *P. browni* (12 ♂) at the Latimer Co., Oklahoma site. All specimens of *P. baumanni* and *P. fusca* were collected with beating sheet or by picking directly from vegetation; *P. browni* specimens were taken at light traps and by beating. Light traps run by the author at several stream sites in this region in previous years have consistently produced specimens of *P. browni*, but no specimens of *P. baumanni* or *P. fusca*. It can be inferred from the records in Poulton & Stewart (1991) that *P. baumanni* and *P. fusca* occur in the same watersheds but this may be the first incidence of these species being taken from the same site.

All three of these species are dark but *P. browni* has a complete pale costal wing margin and very slender paraprocts whereas *P. fusca* has the base of the costal wing margin dark and most of the margin pale; both *P. baumanni* and *P. fusca* have thick paraprocts but in the former species they are curved outwards, and in the latter species they are relatively straight. Poulton & Stewart (1991) and Stark (2004) show details of the aedeagus for *P. fusca*. It is remarkably similar to *P. baumanni* in overall shape, caecum size and general shape of the dorsal patch, but the patch is somewhat broader apically in *P. fusca*. The two appear to form a sister group within the *P. placida* complex.

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REFERENCES

- Poulton, B.C. & K.W. Stewart. 1991. The stoneflies of the Ozark and Ouachita Mountains (Plecoptera). *Memoirs of the American Entomological Society*, 38:1-116.
- Stark, B.P. 1989. *Perlesta placida* (Hagen), an eastern Nearctic species complex (Plecoptera: Perlidae). *Entomologica Scandinavica*, 20:263-286.
- Stark, B.P. 2004. Perlidae (The Stones). Pages 61-148. In B.P. Stark & B.J. Armitage [editors]. *Stoneflies (Plecoptera) of Eastern North America. Volume II. Chloroperlidae, Perlidae and Perlodidae (Perlodinae)*. *Bulletin of the Ohio Biological Survey New Series*, Volume 14, Number 4. Columbus, Ohio. 192 pp.

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