**Eubranchipus stegosus** n. sp. (Crustacea: Anostraca), a bizarre new species of fairy shrimp from the southeastern United States

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**Abstract**

A previously unknown species of anostracan is presented and described herein as *Eubranchipus stegosus* n. sp. This species is unique in that the male bears large, sub-quadrate, transverse, dorsal thoracic projections. *Eubranchipus stegosus* n. sp. is most closely related to *E. moorei* and *E. holmani* and may be endemic to southwestern Georgia. However, anostracans are poorly sampled throughout the southeastern United States, and additional surveys should be conducted to better understand this species' distribution and degree of rarity.

**Introduction**

Large branchiopod crustaceans (fairy shrimp, tadpole or shield shrimp, and clam shrimp) are used as indicators of ephemeral wetland habitat health in parts of the United States (Rogers, 1998; Rogers et al., unpublished), and many species are rare, threatened, or endangered in many parts of the world (USFWS, 1994; IUCN, 1996). Since the vast majority of species rely solely upon seasonal wetlands, large branchiopods have become flagship animals for ephemeral wetland habitat imperilment and are the subject of increasing conservation attention (USFWS, 1994; Eriksen & Belk, 1999; Obregón-Barboza et al., 2002; Rogers, 2002a,b; Rogers et al., unpublished).

The southeastern United States (Alabama, the Carolinas, Florida, Georgia, Mississippi, & Tennessee) only has been surveyed cursorily for large branchiopods. In fact only western and southern North America have been extensively surveyed (e.g., Dodds, 1915; Mackin, 1938; Prophet, 1963; Belk, 1975, 1992; Eng et al., 1990; Maeda-Martínez, 1991; Hill et al., 1997; Maeda-Martínez et al., 1997a,b; Eriksen & Belk, 1999; Rogers, 2001; Rogers et al., unpublished). Even in these areas, new species and new records are being found with regularity (e.g., Belk & Fugate, 2000; Rogers 2000, 2001; Rogers & Fugate 2001; Belk & Rogers, 2002; Obregón-Barboza et al., 2002; Maeda-Martínez et al., unpublished; Rogers & Quinney, unpublished).

Previous to this study, eight fairy shrimp species have been collected from the southeastern United States: *Streptocephalus sealii* Ryder, 1879; *Dexteria floridana* (Dexter, 1956); *Branchinella alachua* Dexter, 1953; *B. lithaca* Creaser, 1940; *Eubranchipus holmani* (Ryder, 1879); *E. moorei* Brtek, 1967; *E. neglectus* Garman, 1926, and; *E. vernalis* Verrill, 1869 (Belk, 1975, unpublished; Belk & Brtek, 1995; Belk et al., 1998; Battle & Golladay, 2002; Rogers, 2002a,b, unpublished; Cammack & Van DeGenachte, unpublished). Three of these species (*Dexteria floridana,
**Branchinella alachua**, and *B. lithaca*) are known from only one or two collections, have not been reported in more than 30 years, and may even be extinct (Moore, 1967; Rogers, 2002). All three are listed as Critically Endangered by the IUCN (1996).

In this paper we present another apparently narrow-range, endemic species that meets the definition of an endangered species and may warrant state or federal protection. More surveys are needed to determine the true status of the species.

This species fits within the genus *Eubranchipus* Verrill 1869, as defined by Belk (1995), however it is bizarre in the unique dorsal ornamentation of the male, the form of which is otherwise unknown in the Anostraca.

**Methods**

Live animals were collected from the wild using a dip net. Adult anostracans were killed in ethyl alcohol, examined under a stereo dissection microscope and sketched by hand. The new species was compared to the original descriptions as well as to preserved material of *E. moorei*, *E. holmani*, *E. oregonus*, *E. vernalis*, and *E. neglectus*.

**Comparative materials**

Comparative material from the collections of D.C. Rogers was used in the analysis. (DCR = D.C. Rogers collection number).

*Eubranchipus holmani* USA: ALABAMA: Madison County: WEUP pond (see Modlin 1982, Amer. Midland Nat.), R1W T3S Sec 21, 29 March 1979, R.F. Modlin, DCR-341.

*Eubranchipus moorei* USA: ARKANSAS: Jackson County: 0.8 km east of US Highway 67, County Road 73, T14N, R1W, S9, 5 March 1995, G.L. Harp, A. Holt, DCR-218.


*Eubranchipus stegosus* n. sp. (Fig. 1).


**Diagnosis**

**Male**

Head narrow, with dorsal anterior–lateral margins projecting beyond bases of compound eye peduncle. First antennae roughly one-third the length of proximal segment of second antennae. Second antennal proximal segment sub-cylindrical, bearing a medial, longitudinal row of four to six short, well-spaced spines. Second antennal proximal segment bearing an anterior–medial appendage basally. Antennal appendage lamellar in basal half and tentacular in the distal half. Antennal appendage proximal–medial margin smooth, rounded, and produced distally. Antennal appendage proximal half flattened, with a posterior–lateral longitudinal row of short papillae and a distal–medial, longitudinal row of large papillae. All antennal appendage papillae bearing...