

Hobbseus valleculus Fitzpatrick 1967

Choctaw riverlet crayfish



Photo by C. Lukhaup.

Distribution, Habitat, and Behavior

Hobbseus valleculus appears to be restricted to the Upper Pearl River watershed in Choctaw and Attala counties, Mississippi (Fitzpatrick 1967; MS crayfish database, this website). Hobbs (1989) also included Kemper County, MS, in the species' range, but the source of that information was not given. In 1996, Fitzpatrick again indicated that the species was known from only three locations in Attala and Choctaw counties. However, in his county checklist for *H. valleculus*, Fitzpatrick (2002) included Kemper County but qualified it with a question mark, and also included Webster County in the range. Webster County is not in the Pearl River drainage, and the location of voucher specimens from Webster County is unknown. Regardless, the species is known from only a few localities (four in the MS crayfish database, this website), and more extensive surveys are needed to better define its distribution.

All three sites where Fitzpatrick (1996) collected the species were small streams. The type locality was a woodland stream on the ridge dividing the Tombigbee and Pearl River drainages (Fitzpatrick 1967). The stream had low banks, was about 1.2 m wide, and was, at most, 0.6 m deep. Substrate was sand, silt, and small gravel. "Slightly undercut" banks and "sparse detritus and leaf litter" provided cover, and *H. valleculus* were found under all three cover types (Fitzpatrick 1967). Fitzpatrick (1967) observed no burrows, and nothing is known about the species' burrowing behavior.

Life Colors and Distinctive Characters

The following description is adapted from Fitzpatrick (1967, 1996) and Fitzpatrick and Payne (1968). *Hobbseus valleculus* is a small crayfish with a nearly flat or slightly concave rostrum that curves downward cephalically and lacks marginal spines. The acumen is either a tubercle or is absent. The areola is moderately broad with three

punctations across the narrowest part, and the carapace lacks cervical spines and spines on the postorbital ridges. The distal half of the antennal scale is rounded, with the widest point near the distal end. The abdomen is narrower and longer than the carapace. The mesial margin of the palm has a cristiform row of tubercles. Form 1 males have strong, simple hooks on the third pereopods (legs). Setiferous sternal projections extend ventrally from the bases of the sternites. Form I males have a long, slender central projection that curves caudad at an angle of 105 to 120 degrees and a longer mesial process that curves caudad at 120 degrees. At least half of the length of the mesial process extends beyond the tip of the central projection. The gonopods are slightly asymmetrical and the tips bend slightly mesially. The annulus ventralis is moveable and subovate. A deep sigmoid depression/sinus that occupies the central 80 percent of the annulus ventralis makes a sharp turn in the cephalic third and extends to the caudal margin.

Size

The three type specimens ranged in size from 20.5 to 22.3 mm carapace length (Fitzpatrick 1967).

Most Like

Hobbseus valleculus is similar to all other *Hobbseus* species. The chela of *H. valleculus* is narrower than that of most other *Hobbseus* and the epistome is more rectangular (Fitzpatrick 1967).

Form I male *H. valleculus* differ from all *Hobbseus* species except *H. yalobushensis* and *H. prominens* in having the terminal elements of the gonopod recurved at an angle greater than 90 degrees. Form I male *H. valleculus* differ from the remaining two species in that the cephalic margin of the central projection curves more smoothly and the gonopods are slightly asymmetrical. Compared to *H. prominens* (Hobbs 1966), the areola is broader and the terminal elements of the gonopods are longer and more recurved in *H. valleculus*. *Hobbseus yalobushensis* differs in having the mesial process only slightly longer than the central projection and in having an “obscure rounded eminence at the proximomesial base” of the central projection (Fitzpatrick and Busack 1989).

Female *H. valleculus* differ from all other *Hobbseus* in having a deep trough angling across the cephalic third of the annulus ventralis, turning at an acute angle, and continuing on to the caudal margin.

Life History

The MS crayfish database (this website) has records of *H. valleculus* collected on 25-26 March, 18 April, and 24 Oct. The only form I male was collected on 26 March, and the only juveniles on 25 March. Nothing else is known about the species' life history.

Crayfish Associates

Procambarus acutus acutus has been collected with *H. valleculus* (Fitzpatrick 1967).

Conservation Status

American Fisheries Society ranking: Threatened

Heritage global ranking: G1 (critically imperiled)

State of Mississippi: Tier 1 (in need of immediate conservation action and/or research)(MDWFP 2005).

See (Taylor et al. 2007) for further explanation of American Fisheries Society and Heritage rankings.

Species Description

Originally described as *Cambarus valleculus*.

Fitzpatrick, J. F., Jr. 1967. A new crawfish of the *Cristatus* section of the genus *Cambarus* from Mississippi (Decapoda, Astacidae). Proceedings of the Biological Society of Washington **80**:163-168.

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Fact sheet author

Susan B. Adams

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