

***Orconectes (Hespericambarus) perfectus* Walls 1972**

Complete crayfish



Photo by C. Lukhaup.

Distribution, Habitat, and Behavior

The range extent of *Orconectes perfectus* in Mississippi requires further investigation. The species description included specimens from Clay and Lowndes counties, MS (Walls 1972). Hobbs (1989) stated that the species was “widespread” in the Tombigbee River basin in Mississippi. The Mississippi crayfish database (this website) includes records of the species from the above-stated counties as well as from the Tombigbee River basin in Kemper, Monroe, and Oktibbeha counties. Additional records in the database from Montgomery (Yazoo River drainage), Lauderdale (Chickasawhay River drainage), and Copiah (Bayou Pierre River drainage) counties represent range extensions outside of the Tombigbee River basin and warrant further investigation to confirm. Fitzpatrick (1996) also included the following Mississippi counties in the range of *O. perfectus* but did not specify the location of accompanying voucher specimens: Clarke, Itawamba, Neshoba, and Noxubee; however, he did not include Clay County in the range. In Alabama, the species is widespread in the Tombigbee and lower Alabama river basins (Hobbs 1989, McGregor et al. 1999).

Streams and rivers are the primary habitat for *O. perfectus* (Hobbs 1989; MS crayfish database, this website).

Life Colors and Distinctive Characters

The areola can be closed to open with up to one row of punctations, with specimens from the upper Tombigbee River basin in Mississippi more likely to have an open areola with punctations (Walls 1972). The gonopod of the form I male is short, reaching the third coxa. The terminal elements of the gonopods are short, and the width is about the same

as the length. The central projection is blunt, and the mesial process is twisted with sharp edges and not troughed. The elements form a “V”, with the mesial process recurved at about a 45° angle. Form I males have hooks only on the third pereopods (legs). Coloration is similar to that of *O. hartfieldi*.

Size

Form I males from Mississippi had a carapace length (CL) range of 26.0 - 28.7 mm, which was much larger than the form I males examined from Alabama (CL 15.0 - 21.5 mm) (Walls 1972). The US Forest Service collection contains a form I male and a female from Mississippi with CL of 31.8 and 34.7 mm (body lengths 66.3 and 72.4), respectively (unpublished data).

Most Like

In Mississippi, *O. perfectus* is most similar to its close relative, *O. hartfieldi*, but often has an open areola. Male *O. perfectus* differ from *O. hartfieldi* in having gonopods with a blunt central projection that lacks a terminal notch and in having a twisted mesial process with sharp edges. Unlike in *O. hartfieldi*, female *O. perfectus* have a sinus only in the posterior portion of the annulus ventralis. *Orconectes wrighti*, which occurs only in the Tennessee River drainage, has a wider areola and more sharply pointed central projection of the gonopod. Also, *O. wrighti* lacks the red highlights obvious in live specimens of *O. perfectus*.

Coloration of *O. perfectus* is similar to that of *O. palmeri* and *O. hobbsi*, but gonopods of both form I and II males differ dramatically from the long, slender gonopods of *O. palmeri* and *O. hobbsi*.

Life History

Form I males have been collected in Mississippi in September, October, January, March, and June, and one ovigerous female was collected on 11 April (Walls 1972; MS crayfish database, this website). The timing of these collections suggests that the species' life history timing is generally similar to that of other *Orconectes* species, with mating occurring from fall to spring, females ovigerous in spring, and juveniles released in late spring or early summer (Adams *In press*).

Crayfish Associates

Other species collected with *O. perfectus* include *Cambarus diogenes*, *Orconectes chickasawae*, *O. mississippiensis*, *Procambarus acutissimus*, *P. acutus acutus*, *P. lagniappe*, and *P. hayi* (unpublished data).

Conservation Status

American Fisheries Society ranking: Currently Stable

Heritage global ranking: G4/G5 (apparently or demonstrably widespread, abundant, and secure).

See (Taylor et al. 2007) for further explanation of these rankings.

Species Description

Walls, J.G. 1972. Three new crayfishes related to *Orconectes difficilis* (Faxon) (Decapoda, Astacidae). Proceedings of the Biological Society of Washington 84:449-458, figures 1-4.

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