

Reproductive Notes on the Western Painted Crayfish, *Orconectes (Buannulifictus) palmeri longimanus* (Decapoda: Cambaridae), from Southeastern Oklahoma

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The western painted crayfish, *Orconectes (Buannulifictus) palmeri longimanus* (Faxon) is a medium-sized crustacean found in all western tributaries of the Mississippi River from the Arkansas River to the Gulf, and the Gulf drainage streams of Arkansas, Kansas, Louisiana, Mississippi, Oklahoma and Texas (Metcalf and Distler 1963; Hobbs 1974; Pflieger 1996). Nationwide, populations of *O. p. longimanus* are considered currently stable, CS (Taylor et al. 2007). In Oklahoma, this crayfish is ranked S5 (currently stable) by NatureServe (2014). Little is known about the reproductive biology of *O. p. longimanus* in Oklahoma and elsewhere. Here, we document some noteworthy natural history information on ovigerous *O. p. longimanus* in the state that includes, for the first time, counts of eggs, size of young, and an unusual timing of reproduction.

Between June 2011 and July 2014, 107 *O. p. longimanus* (50 females) were collected from various sites in McCurtain County, including Boktuklo Creek ($n = 5$), Eagle Fork Creek ($n = 7$), Glover River ($n = 8$), Lukfata Creek ($n = 21$), Mt. Fork River ($n = 18$), Mud Creek ($n = 14$), Salt Creek ($n = 10$), Yanubbee Creek ($n = 6$) and Yashau Creek ($n = 18$). When females were found to ovigerous or “in berry” (Fig. 1) they were measured for body length (BL) and placed in 37 l aquaria with air stones and conditioned tap water. Once young hatched, they were counted, measured and preserved in 70% ethanol. Voucher

specimens of crayfish were deposited in the Henderson State University Collection, Arkadelphia, Arkansas.

Two adult female *O. p. longimanus* (80, 85 mm BL) collected on 16 January and 4 May 2014 from the Mt. Fork River, Beavers Bend State Park (34.138315°N, 94.766173°W) produced 60 and 49 young, respectively. These young (Fig. 2) hatched ca. 2 wk later and measured 8-12 (mean 10) mm BL. Interestingly, the January ovigerous date is the earliest known date for *O. p. longimanus*. Water temperature in this cold, spring-fed stream was 7°C.

In the first report on Oklahoma crayfishes, Creaser and Ortenburger (1933) did not mention anything about reproduction in *O. p. longimanus*. In the most recent survey of state crayfishes of Oklahoma, Morehouse and Tobler (2013) did not report ovigerous females nor did Reimer (1967) in an earlier report on crayfishes of the state. However, Jones and Bergey (2007) noted that *O. p. longimanus* becomes reproductively active in September and October and continued to display glair through January; the only females in berry were observed in March, an indication they mentioned of may be capable of producing young late in the year. In his classic study of the crayfishes of the Ozarks of Arkansas, Oklahoma, and Missouri, Williams (1954) unfortunately did not comment on the biology or reproduction of *O. palmeri*

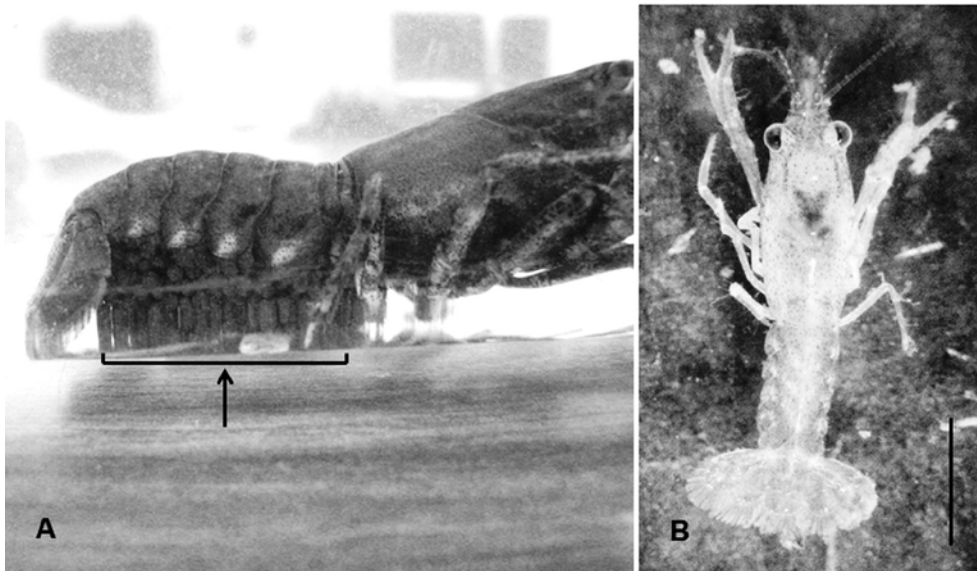


Figure 1. Reproduction in *Orconectes palmeri longimanus* from southeastern Oklahoma. A. Ovigerous female showing “berries” (arrow in bracket). B. New hatchling. Scale bar = 2.5 mm.

longimanus. In Arkansas, Reimer (1963) found *O. p. longimanus* females with eggs in April (3) and May (1). He opined that eggs were likely laid in April. In personal collections of one of us (HWR) from Arkansas, he collected ovigerous females of *O. p. longimanus* from the Caddo River on 23 March 1994 and the upper Ouachita River on 15 April 1996; however, no count of eggs was made. In Missouri, Pflieger (1996) reported gray-speckled crayfish (*O. palmeri*) females produce eggs in late March and April. Taylor and Schuster (2004), in their treatise on Kentucky crayfishes, reported no ovigerous females have been collected from Kentucky. Walls (2009) commented on the habitat and distribution of *O. p. longimanus* in Louisiana, but did not mention anything related to biology or reproduction of this form.

Acknowledgments

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