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Ultrastructural Comparison of Sperm from the Crayfish Cherax tenuimanus and Cherax albidus

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INTRODUCTION

Cherax tenuimanus (Marron) and Cherax albidus (Koonac) are freshwater crayfish native to the large streams of southwestern Australia. C. tenuimanus is the third largest species of crayfish in the world (the Tasmanian crayfish, Astacopsis franklinii, and the Murray River crayfish, Euastacus serratus, are larger), and attains weights of approximately 2 kilograms (Shireman, 1973). Cherax albidus is smaller than C. tenuimanus, yet is still much larger than the native American genera (Pacifastacus, Procambarus) which weigh less than one fiftieth of a kilogram. Cherax tenuimanus and C. albidus are excellent animals for aquaculturing, because in addition to their large size, they are highly palatable, do not burrow, have an uncomplicated life cycle, and grow large fairly rapidly (Crook, 1981). Their potential for aquaculture has generated considerable recent interest in these species.

A complete understanding of the reproductive biology of Cherax will aid in aquaculturing them. Until now, the ultrastructure of their gametes has not been studied, though work has been done on the ultrastructure of the sperm from other crayfish genera (Moses, 1956, 1961a,b; Meek and Moses, 1961; Yasuzumi et al., 1961; Yasuzumi and Lee, 1966; Anderson and Ellis, 1967; Pochon-Masson, 1968; Lopez-Camps et. al., 1981; Dudenhausen and Talbot, 1982). However, in many of the investigations on American crayfish, morphological detail was not completely resolved because of fixation problems. In this study, we have used the improved fixation procedures of Dudenhausen and Talbot

(1982) to examine and compare the ultrastructure of sperm from C. tenuimanus and C. albidus.