

**REPRODUCTIVE BIOLOGY AND GESTATION OF  
THE MALE SEAHORSE, *Hippocampus barbouri*  
(Jordan and Richardson 1908)**

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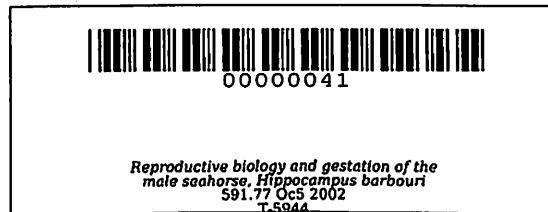
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(Jordan and Richardson 1908)**

**by**

**EDNA PEREZ-OCNER**



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## ABSTRACT

Seahorse, *Hippocampus barbouri* (Jordan-Richardson 1908) is one of the endangered species worldwide. Attempts to breed the fish in captivity are hampered by many unanswered questions regarding its general reproductive biology especially its gestation. This study is the first investigation of the gross morphology of reproductive system, histology and ultrastructure of the brood pouch, and localization of sex steroids through immunohistochemistry and enzyme histochemistry.

Results showed that seahorse reproductive system does not differ from a typical male teleost except for the presence of brooding pouch in males and was evident starting 8 cm length. The seahorse testis does not form spermatocyst and belongs to unrestricted spermatogonial type. Onset of sex differentiation was observed at size length 4 to 6 cm. Ultrastructural study revealed the absence of structural connection between the embryo and the capsules formed by the pouch wall. Immunohistochemistry, enzyme histochemistry and chemiluminescence studies showed synthesis of the steroids, estrogen and progesterone in the testes, brood pouch and interrenal gland and their possible involvement in gestation by their abundance during gestation. These findings will be valuable in the aquaculture and conservation of this species.

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## INTRODUCTION

Reproduction is a major event in the life history of any species. In teleosts, reproduction presents a considerable variety of strategies aimed at ensuring reproductive success. In seahorses, reproduction is quite intricate and complex since it deviates from the typical gestation pattern; the male rather than the female gets 'pregnant.' These make them interesting subjects for scientific investigation.

Seahorses are highly specialized teleostean fishes. From an ecological standpoint, seahorses are important as one of the indicators of marine productivity because they thrive in varied marine ecosystems such as mangroves and coral reefs. They are distributed globally both in temperate and tropical regions.

Recently, seahorses have come to the attention of researchers because of the noted decline in their natural populations consequent to their wide exploitation for purposes of global trade. Pajaro *et al.* (1997) documented the global exploitation of the seahorse including in the Philippines. The study showed that some 36 nations are involved in the trading of this commodity and approximately 20 million seahorses are consumed for Traditional Chinese Medicine (TCM) and Indonesian Traditional Medicine known as "JAMU". Marichamy *et al.* (1993) reported that seahorse fishing for global trade commenced in 1992.