

PARAHEMIURUS BENNETTAE N.SP.  
(DIGENEA), A HEMIURID TREMATODE  
PROGENETIC IN SALINATOR  
FRAGILIS LAMARCK (GASTROPODA,  
AMPHIBOLIDAE)

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(With three Text-figures)

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SYNOPSIS

The adult of *Parahemiurus bennettiae* n. sp. is described. This trematode attains sexual maturity and becomes gravid within rediae in the female gonad of *Salinator fragilis* Lamarck, an herbivorous, hermaphrodite, pulmonate snail occurring on estuarine mud flats at Botany Bay, New South Wales. No other host is known.

INTRODUCTION

The term progenesis was coined by Giard (1887) for precocious maturity in animals where this was associated with arrested development. In this sense it was synonymous with neoteny. Its use was extended by Dollfus (1924) to cover precocious sexual maturity of larval trematodes, particularly metacercariae, which occurs without inhibition of subsequent development. The occurrence of progenesis in molluscan hosts has escaped the attention of many zoologists and was denied by Baer (1951). He nevertheless pointed out that if progenetic metacercariae were to arise within the sporocyst, a direct life cycle would result which would require only a single host. The discovery of gravid appendiculate flukes, belonging to a new species, *Parahemiurus bennettiae*, in rediae parasitizing the snail *Salinator fragilis* Lamarck is therefore of interest.

Application of the term progenesis to this hemiurid is not strictly appropriate as the only egg-bearing individuals observed were morphologically adults. Precocity is here manifested in attainment of the adult form in what, in the digenetic life cycle, is normally the first intermediate host and not in the premature onset of sexual reproduction. The same is true of several accounts of "progenesis" in the literature. Nevertheless, as it is not always possible to distinguish metacercariae (i.e. the immediate post-cercarial stage) from adults, the current broad use of progenesis to denote sexual maturity of trematodes, irrespective of their state of development, in non-definitive hosts, is best accepted.

The gravid individuals of *P. bennettiae* are here regarded as true adults, in accordance with Buttner's interpretation (1955) of progenetic flukes with abbreviated developmental cycles. In the present communication only the adult is described. A further paper will be devoted to a discussion of this and other reported cases of progenesis in molluscan hosts.