A case of persisting massive infection of *Scomberomorus commerson*, a commercially exploited scombrid fish, with *Cybicola armatus* (Copepoda: Siphonostomatoida: Pseudocycnidae)

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Abstract

During an extensive survey of fish parasites along the Malabar coast of India we observed exceptionally high or even massive infection of the narrow-barred Spanish mackerel, *Scomberomorus commerson* (Scombridae), with parasitic copepods *Cybicola armatus*. Such infection has not hitherto been reported. The copepods occurred on the gills of its host and the infection persisted for many years (the survey lasted from January 2010 to July 2014). The overall prevalence was very high (95%); out of a total of 981 fish studied, 933 were infected, and the maximum intensity reached 42. The highest rate of infection (prevalence 99.2%) was observed in medium sized fish (36.0-79.9 cm). We found this parasite only on *S. commerson* even though we examined 81 fish species, including five of the family Scombridae. Interestingly, the parasite exhibits strict site specificity and microhabitat preference. A significant proportion of them was seen attached to pseudobranchs rather than to main gill arches. Significantly, the body size of the parasite was positively correlated with that of the host fish. Our SEM micrographs contributed new facts to this copepod's morphology by illustrating for the first time the ventral part of its cephalothorax, illustrating the nature of attachment, and by finding a new structure – a premaxillary pad. We demonstrated the haematophagous nature of *C. armatus* by finding and documenting the host's blood cells in the parasite's intestine.

Keywords: Scomberomorus commerson; parasitic copepod; Cybicola armatus; host-parasite interaction; host specificity; site specificity; pseudobranch; holobranchIntroduction

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