

Biology and morphology of the larva of *Ecnomus tenellus* (Rambur, 1842) (Trichoptera: Ecnomidae)

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Abstract

Ecnomus tenellus (Rambur) is the only species of the Family Ecnomidae found in Italy. In northern Italy it is only found along the river Po and its affluents. In Central Italy this species is more evenly distributed and in southern Italy it was found in few locations. Our study deals with the biology and the diet of the larva of *E. tenellus*. The specimens for this study were collected in Lake Trasimeno (Umbria, Italy) where *E. tenellus* is the most abundant species of Trichoptera. Larval morphology was investigated. Examination of the mouth parts showed that larvae can be shovel-predators.

Key words: *Ecnomus tenellus*, larval morphology, diet, biology

Introduction

The Family Ecnomidae, characterized by adults up to 5 mm, with ocelli absent and maxillary palps with the 5th segment longer and annulated, is distributed mainly in the Afrotropical, Oriental and Australasian Regions. Several species are present also in the East and West Palearctic Regions (Arefina 2003). The genus *Ecnomus* McLachlan comprises 221 species (Li & Morse 1997). Four of the 20 Trichoptera families found in Italy are monospecific: Ecnomidae, Ptilocolepidae, Uenoidae and Odontoceridae (Cianficconi 2006). *Ecnomus tenellus* has a Palearctic distribution and is the only representative of Ecnomidae in Italy. The aquatic stages live in stagnant or slow-flowing water, in lakes or in river stretches with low-flow speed.

Ecnomus tenellus has been studied by various authors (Higler 1977, Lepneva 1971, Moretti 1983, Stroot *et al.* 1988, Waringer & Graf 1997). The larval morphology, biology and ecology of *E. tenellus* compared with *E. deceptor* was examined by Stroot *et al.* (1988). In particular, *E. tenellus* feeding behaviour and predatory strategy have been investigated by Wiberg–Larsen (1993). First data on the parasites (Moretti & Sorcetti Corallini 1976) and the osmoregulatory function of the goblet cells (Corallini 2007) were reported for the Italian populations of this species.

In Italy, *Ecnomus tenellus* is found in the Po river, the longest river in Italy (652 km), in the Tiber river, the 3rd-longest river in Italy (406 km), in some lakes of Central Italy (Bolsena, Vico and Trasimeno) and in a few scattered locations of southern Italy (Fig. 1). For this study, biological and morphological observations were made on *Ecnomus tenellus* from Lake Trasimeno.

The Trichoptera populations of Lake Trasimeno have been monitored since 1949 by Moretti and collaborators (Moretti 1954, 1958; Moretti & Taticchi 1971; Moretti *et al.* 1993). Since the beginning of these studies, 4 periods have been detected in the history of Trichoptera populations in