



***Onuphis* and *Aponuphis* (Annelida: Onuphidae) from southwestern Europe, with the description of a new species**

ANDRÉS ARIAS^{1,4} & HANNELORE PAXTON^{2,3}

¹*Departamento de Biología de Organismos y Sistemas (Zoología), Universidad de Oviedo, Oviedo 33071, Spain*

Department of Biological Sciences, Macquarie University, Sydney, NSW 2109, Australia

³*Australian Museum Research Institute, Australian Museum, 6 College Street, Sydney, NSW 2010, Australia*

⁴*Corresponding author. E-mail: ariasandres.uo@uniovi.es*

Abstract

This study recognises five species of *Onuphis* and four species of *Aponuphis* from southwestern Europe, represented in the Bay of Biscay, the Atlantic coasts of Iberia and the western Mediterranean Sea. One species, *Onuphis anadonae* sp. nov., is newly described and another species, *Aponuphis willsiei* Cantone & Bellan, 1996 is a new record for the Iberian Peninsula waters. *Aponuphis ornata* (Fauvel, 1928) and *A. willsiei* are shown to be tube brooders and the development of the juveniles is described. The usefulness of some *Onuphis* characters, as well as the size-dependent distribution of branchiae and chaetae, complicating *Aponuphis* species identification, are discussed. We are presenting descriptions and photographs of the distinctive *Aponuphis* colour pattern which we recommend as an identificatory tool instead. A dichotomous key to all species is included.

Key words: polychaetes, Eunicida, biodiversity, direct development, ontogenetic changes, chaetal replacement, Iberian Peninsula, Bay of Biscay, western Mediterranean

Introduction

Onuphis Audouin & Milne Edwards, 1833 is the most speciose genus of the polychaete family Onuphidae Kinberg, 1865 after *Diopatra* Audouin & Milne Edwards, 1833 with about 40 described valid species (Maekawa & Hayashi 1999; Gil & Machado 2014; Arias & Paxton 2014). However, the genus has only been the subject of partial revisions (Fauchald 1982; Maekawa & Hayashi 1999; Arias & Paxton 2014) and it is quite possible that more undescribed species may be discovered in the near future. The genus *Onuphis* is a cosmopolitan taxon and most of its species are characteristic for the intertidal and relatively shallow waters of warm-temperate regions, nevertheless individual species of *Onuphis* seem to have limited restricted geographical distributions (Paxton 1986).

The genus *Aponuphis* Kucheruk, 1978 was erected for a group of slender onuphids without peristomial cirri that had previously been regarded as members of the genus *Hyalinoecia* Malmgren, 1867. Paxton (1986) recognised seven species of *Aponuphis* and underscored the morphological differences between the two genera by placing *Aponuphis* into the subfamily Onuphinae and *Hyalinoecia* into the subfamily Hyalinoeciinae.

Southwestern Europe, represented by the Bay of Biscay, the Atlantic coasts of Iberia and the western Mediterranean Sea, harbours five species of *Onuphis*, of which one is new to science, and four species of *Aponuphis*. Here, we present an updated revision of the *Onuphis* and *Aponuphis* fauna of this region with the description and illustration of the new species of *Onuphis*, newly report *A. willsiei* from the Iberian Peninsula and present notes on the ecology and reproduction together with a taxonomic key to the species of *Onuphis* and *Aponuphis* of southwestern Europe.

2. Colour pattern and branchiae absent. *A. willsiei*
- Colour pattern and branchiae present 3
3. Branchiae from chaetiger 1–2, colour pattern of two large dorsal spots per segment, by about chaetiger 10 becoming thin band (Fig. 7C) *A. brementi*
- Branchiae from chaetiger 3–5, colour pattern otherwise 4
4. Pseudocompound hooks tridentate; branchiae from chaetiger 3–4; colour pattern of horizontal bars and bands (Fig. 7D–F) *A. ornata*
- Pseudocompound hooks bi- and tridentate; branchiae from chaetiger 4–5; colour pattern otherwise 5
5. Two dorsal longitudinal pigment stripes and two segmental spots from chaetiger 1 to posterior region (Fig. 7A) *A. bilineata* morph 1 (typical)
- Peristomium and chaetigers 3–4 almost solidly light brownish, from chaetiger 4–5 two lateral longitudinal stripes close to parapodia (Fig. 7B) *A. bilineata* morph 2
6. Branchiae from chaetiger 1 7
- Branchiae from chaetiger 5, all branchiae simple and strap-like *O. farensis*
7. All branchiae simple and strap-like, colour pattern practically absent, first four pairs of parapodia with pseudocompound hooks 8
- Branchiae pectinate from about the 20th chaetiger, colour pattern consisting of distinctive bars and spots on dorsum, first three pairs of parapodia with pseudocompound hooks 9
8. Bi-, tri- and quadridentate pseudocompound hooks with falcate hoods (Fig. 3F–I), SAH from chaetiger 9, subulate ventral cirri in first four chaetigers *O. anadonae* sp. nov.
- Only tridentate pseudocompound hooks with moderately long, triangular and pointed hoods (Fig. 6A–D), SAH from chaetiger 14, subulate ventral cirri in first five to six chaetigers *O. rullieriana*
9. Bi- and tridentate (or even multidentate) pseudocompound hooks, eyespots on prostomium absent, maximum of eight branchial filaments, robust species *O. pancerii*
- Only tridentate pseudocompound hooks, eyespots on prostomium present, maximum of five branchial filaments, slender species. *O. eremita*

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