



## *Syndesmis patagonica* n. sp. (Rhabdocoela: Umagillidae) from the sea urchin *Arbacia dufresnii* (Echinodermata: Echinoidea) in Patagonia, Argentina

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### Abstract

The umagillid *Syndesmis patagonica* n. sp. is described from the intestinal tract of the sea urchin *Arbacia dufresnii*, which represents a new host record for the genus. The hosts were collected from the coast of Patagonia (Argentina), and *S. patagonica* n. sp. is the first species of *Syndesmis* reported from South America. *Syndesmis patagonica* n. sp. can be distinguished from all other species in the genus by the possession of a stylet that is extremely short (less than 50 µm long), and a combination of other characters including the position of the testes, body size, body color and host. An updated overview of the distribution of all species of *Syndesmis* is also presented.

**Key words:** *Syndesmis*; new species; taxonomy; biogeography; endosymbiosis; Puerto Madryn

### Introduction

Echinoderms are often reported as hosts of symbionts belonging to a wide variety of taxa (Jangoux 1990): Hallangiidae and Isodiametridae (Acoela), Nemertodermatidae (Nemertodermatida), Umagillidae, Acholadidae and Leptoplanidae (Platyhelminthes). In echinoids, Doignon and Artois (2006) report 22 species of umagillid flatworms. An additional species was described by Beltagi and Mandura (1991), a description obviously unnoticed by Doignon and Artois (2006) and also not mentioned in the Turbellarian Taxonomic Database (Tyler *et al.* 2006–2009).

Representatives of 2 genera, *Syndesmis* Silliman, 1881 and *Syndisyrix* Lehman, 1946, have been traditionally recognized as umagillid endosymbionts of echinoids. However, the validity of the later genus is often doubted. Lehman (1946) erected *Syndisyrix* to host all species in which the ducts entering and leaving the seminal bursa are sclerotized. Cannon (1982, 1987) supported the distinction of the genus *Syndisyrix* based on the presence of a sclerotized bursal valve, which he considered a valid apomorphy for the genus. However, Kozloff and Westervelt (1987) observed a bursal valve in *Syndesmis echinorum* François, 1886, the type species of *Syndesmis*, which makes the distinction between the two genera invalid, at least when based on this character. Kozloff and Westervelt (1987) proposed to preserve the genus *Syndisyrix* based on other diagnostic features: e.g., a distinct seminal vesicle, a short, narrow and straight ejaculatory duct, and a long penis stylet in species of *Syndisyrix*, vs. unnoticed seminal vesicle, long, broad and extensively coiled ejaculatory duct, and a short penis stylet in *Syndesmis*. In further studies on several species in both genera, Kozloff and Westervelt (1990) and Westervelt and Kozloff (1990, 1992) come to the conclusion that only one character can be used to distinguish between both genera: the male antrum is slender and narrow and the stylet slips freely back and forth in it in species of *Syndisyrix*, whereas the male antrum is broad and the stylet seems to be bound tightly to its wall in *Syndesmis*. Tyler *et al.* (2006–2009) present both genera separately in the Turbellarian Taxonomic Database. However, as indicated by these authors, most taxa have not yet been checked for accuracy in synonymy in the database.