



Pelonaia quadrivena n. sp. a case of bipolarity in Ascidiacea

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Abstract

A new ascidian species of the genus *Pelonaia* (Ascidiacea, Styelidae) is described from the coastal shore of Terre Adélie, Antarctic. The genus was referenced by a single species widely distributed in the arctic seas. Comparative anatomical descriptions are given for the species of both hemispheres. The validity of the genus is confirmed.

Key words: Ascidiacea, Antarctic, bipolarity, new species

Introduction

The French MNHN and IPEV program “REVOLTA” (Radiations EVOLutives en Terre Adélie) in January-February 2010 has collected and photographed benthic organisms from the continental shelf. The purpose was to survey the benthic fauna at depths ranging from 20 to 200m. Most of the ascidians collected are well known species, widely distributed, except one new species *Pelonaia quadrivena* described here. The genus *Pelonaia* (Styelidae) was previously represented by a single arctic species: *Pelonaia corrugata* Goodsir & Forbes, 1841, widely distributed as well in the Pacific and Atlantic oceans, extending southward to England. The geographic distance separating both species of *Pelonaia* is amazing for this rare genus has very peculiar characters among the solitary Styelidae. Both species are undoubtedly different, but they confirm the unity and validity of the genus.

Examples of bipolarity are seldom reported and some of them are disputed. Among ascidians the case of *Corella eumyota* Traustedt, 1882 a species from the southern hemisphere has to be considered. Specimens collected along the European Atlantic coast have been attributed to this species, but sequences of Antarctic specimens diverge by more than 10% from those of the north-Atlantic individuals (Monniot *et al.* 2011) and it becomes obvious that they belong to different species, the bipolarity cannot be retained in this case.

Descriptions

Pelonaia quadrivena n. sp.

(Figures 1,2,3,4A)

Material. REVOLTA 2010, Terre Adélie, Pointe Géologie, 66°6726 S–139°916817 E, 52m. (MNHN PEL 2).

Etymology. In latin: quadrivena = four veins.

The single specimen, 6cm long and 3.5 cm in diameter, is egg-shaped and brown when alive (Fig. 1). The body is erect above a solid base made of a mass of agglomerated sediment containing varied epibionts. Both siphons are apical, close together and slightly protruding. The surface of the thin tunic is bare with a pavement design made of criss-crossed ridges (Fig. 1); this aspect is not due to contraction, the internal layer is smooth. The longitudinal and transverse muscular fibres are dense in a continuous layer making the body wall opaque. About 40 simple oral tentacles in 3 orders of size form an anterior ring. The peri-pharyngeal band, in a single rod, draws a wide dorsal indentation. The dorsal tubercle opens in a U-shaped slit. The dorsal lamina is a tall smooth-edged membrane (Fig.