

NEW LOCALITY FOR *NOTOCHTHAMALUS SCABROSUS*
(CRUSTACEA, CIRRIPIEDIA): BAHÍA LAPATAIA, BEAGLE
CHANNEL, TIERRA DEL FUEGO, ARGENTINA.

NUEVA LOCALIDAD PARA *NOTOCHTHAMALUS SCABROSUS* (CRUSTACEA,
CIRRIPIEDIA): BAHÍA LAPATAIA, CANAL BEAGLE, TIERRA DEL FUEGO, ARGENTINA.

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Notochthamalus scabrosus (Darwin, 1854) is commonly attached to littoral rocks and shells, often associated with *Notobalanus flosculus* (Darwin, 1854), and sometimes with *Chthamalus cirratus* (Darwin, 1851). *Notochthamalus scabrosus* was previously reported from Peru to Tierra del Fuego and Islas Malvinas / Falkland Islands by Darwin (1851). Moreover, the review of South American barnacle distribution by Young (1995) suggested that the temperate zone of the Southwestern Atlantic, occurring between 35°S and the southern tip of South America (56°S), had a barnacle fauna similar to that of the Southeastern Pacific (coasts of Chile and Peru), with *N. scabrosus* occurring at both zones. Particularly in the Beagle Channel, *N. scabrosus* is the dominant species in the upper zone of the rocky intertidal.

The Beagle Channel is located at the southernmost tip of South America (ca. 55° S; 68° W) and is an ancient glacial valley of about 210 km length and 5 km width, with different basins. The Beagle Channel has fjord estuarine features with salinities

lower than the surrounding oceanic water masses due to the discharge of glaciers and rivers (Balestrini *et al.* 1998, Isla *et al.* 1999). One of these subsystems is the estuarine complex of Lago Roca-Bahía Lapataia, a palaeo-fjord currently constituted by a lake discharging freshwater to the channel via the Ovando River (Isla *et al.* 1999; Fig. 1).

Zaixso *et al.* (1978) described the rocky intertidal flora and fauna from 11 localities at the Beagle Channel. *N. scabrosus* was reported by the authors from three localities: Bahía Ensenada (Ensenada Zaratiegui) (54° 50' S; 68° 28' W), Punta Jones (54° 49' S; 68° 13' W) and Bahía Ushuaia (54° 49' S; 68° 19' W). With regard to Bahía Lapataia, Zaixso *et al.* (1978) mentioned that this species was absent there, likely as a consequence of the low salinity characterizing the zone. Authors reported the presence of *Elminius kingii* (Gray 1831) as the only barnacle species for this location.

In the present study we report for the first time the presence of *N. scabrosus* in the upper zone of the rocky intertidal of the western coast

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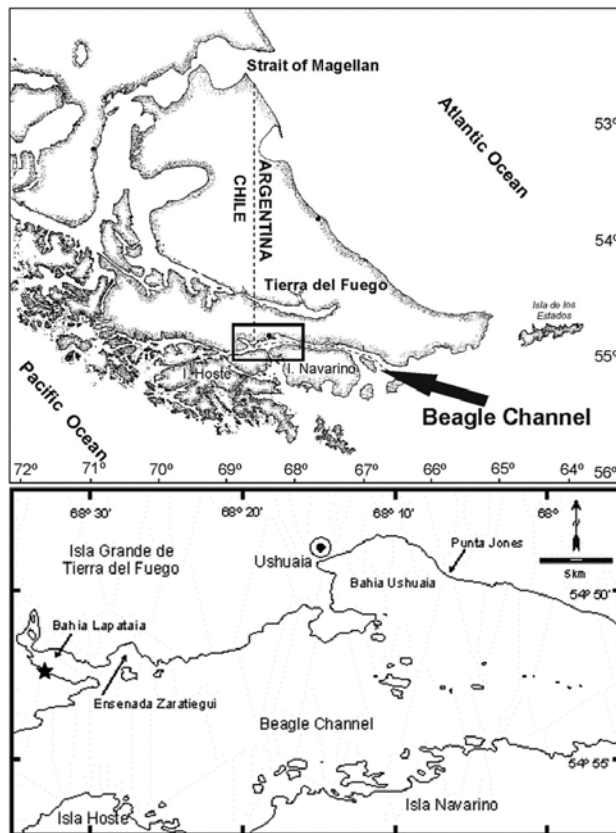


Fig. 1. Geographical situation of the area. ★ First record of *N. scabrosus* from Bahía Lapataia.

of Bahía Lapataia ($54^{\circ} 51.54' S$; $68^{\circ} 33.87' W$), Tierra del Fuego (Fig. 1). Specimens of *N. scabrosus* were found along with *Elminius kingii* (Fig. 2). On September 25th, 2008 photographs and samples of



Fig. 2. *Notochthamalus scabrosus* (N.s.) and *Elminius kingii* (E.k.) found in the western coast of Bahía Lapataia, Tierra del Fuego, Argentina.

both species were taken. The samples were collected for accurate identification after dissection.

Especially during spring and summer, Ensenada Zaratiegui and Bahía Lapataia have very variable and lower salinity than other sites of the Beagle Channel, which in turn are less influenced by freshwater discharges (Table 1). *N. scabrosus* is clearly a euryhaline species since specimens can tolerate a range of salinities of 15 – 31 ups. Although there are no specific studies on salinity tolerance of this species, the genus *Chthamalus* is known to be euryhaline (e.g. Crisp & Costlow 1963, López & González 2003, Farrapeira 2008).

Roughgarden *et al.* (1988) and Alexander & Roughgarden (1996) have suggested that the ecology of a rocky intertidal community at a site would be governed by adult-adult interactions within the site, or by limitations to the supply of larvae reaching the site, the latter being determined by the regional pattern of circulation and physical oceanography in the coastal waters. These characteristics would explain

TABLE 1. Surface salinity from different localities of the Beagle Channel obtained with a multiparameter meter.

Locality	Latitude	Longitude	Salinity (UPS)	
			Summer	Winter
Ensenada Zaratiegui	54° 50.86'S	68° 28.79'W	15.0 ^b -19.4 ^{a*}	nd
	54° 50.92'S	68° 28.96'W	23.9 ^c -25.0 ^d	30.8
Bahía Lapataia	54° 51.32'S	68° 34.39'W	20.1 ^a - 31.7 ^{b*}	nd
	54° 51.62'S	68° 33.44'W	29.0 ^c - 31.0 ^d	31.2
	54° 51.17'S	68° 33.87'W	21.7 ^c - 25.5 ^d	31.7
Beagle Channel	54° 50.89'S	68° 15.83'W	31.3 ^d - 31.5 ^c	31.3

References: * Data from Isla et al. (1999). a: 22 february 1998, b: 25 february 1999, c: November 2006, d: March 2006; nd: no data available.

the variation of timing of recruitment at the coast and the likely reason that it occurs in discrete pulses.

We propose that the establishment of *N. scabrosus* in Bahía Lapataia could be a consequence of local hydrological events, namely coastal currents, wind direction and intensity and availability of larvae in the plankton rather than by the low saline waters characterizing the zone, and these events would explain the discontinuous scheme of distribution of *N. scabrosus* along the coast of the Beagle Channel. This channel is a particular environment because of its fjord features and its semi-closed condition (Antezana 1999). For example, the freshwater input may change the environmental conditions at a geographical micro-scale. In some western coves the ice input from glaciers may produce the typical coastal disturbance so that the intertidal community may be locally impoverished or absent (*c.f.* Mutschke & Gorny 1999, Barnes 2005). Hence, the presence of certain species at different sites with both different freshwater input and coastal orientation –and therefore differentially affected by winds and currents– may be indicators of specific hydrological processes acting on the community structure and/or diversity.

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