Predation by the nudibranch Tritonia odhneri *(Opisthobranchia: Tritoniidae) on octocorals from the South Atlantic Ocean*

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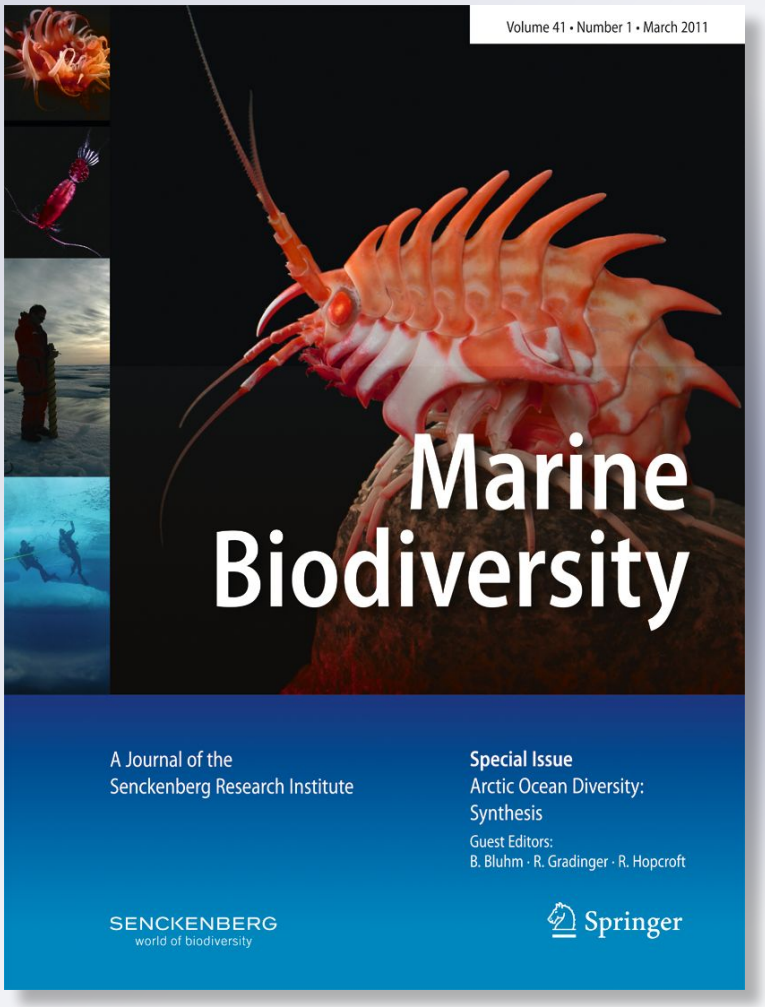

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Predation by the nudibranch *Tritonia odhneri* (Opisthobranchia: Tritoniidae) on octocorals from the South Atlantic Ocean

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Abstract The diet of the nudibranch mollusc *Tritonia odhneri* was investigated for the first time based on a detailed anatomical analysis of the gut content of 52 specimens. Digestive tracts of specimens were analysed under stereoscopic microscope equipped with digital camera. Portions of octocorals containing the calcareous sclerites were removed from the tracts and prepared for scanning electron microscopy (SEM). Sclerite morphology and size were determined at the species and genus level on the basis of a taxonomical revision and compared with fresh octocoral specimens collected from Patagonia (San Jorge Gulf) and with voucher specimens from the collections of Museo Argentino de Ciencias Naturales (MACN-in). Specific predation of *T. odhneri* on octocoral species present in the southwestern Atlantic Ocean was detected. The nudibranch feeds on the gorgonians *Primnoella divaricata, Primnoella scotiae* (=*P. compressa*) and *Tripalea clavaria*, and the pennatulaceans *Renilla octodentata* and *Stylatula* sp. A world checklist of dietary interactions between species of the genus *Tritonia* and octocorals is presented and discussed.

Keywords Sclerites · Diet · Predation · *Tritonia odhneri* · Octocoral

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Introduction

The members of the family Tritoniidae feed on octocorals, including sea pens, alcyonarian soft corals and gorgonians; they are sometimes cryptic upon their prey species, mimicking them in shape and coloration (McDonald and Nybakken 1996, 1999; Avila et al. 1999; Smith and Gosliner 2003, 2005, 2007; Wyeth et al. 2006; Debelius and Kuiter 2007). An exception is a recently described species, *Tritonia papalotla* Bertsch et al. 2009, feeding on a zoanthid anthozoan (Bertsch et al. 2009). Gorgonians are octocorals characterised by a tough but flexible axis composed of the scleroprotein gorgonin, with varying amounts of calcareous material included in the axis as well as in the living tissue where the calcareous structures take the form of sclerites. Sclerite morphology is used for identification to species level (Bayer 1955; Bayer et al. 1983). Systematic reviews of octocorals from the southwestern Atlantic are scarce and outdated, hindering taxonomic identification of the species studied (Bayer 1961; Verseveldt 1967; Zamponi and Pérez 1995, 1996; Barreira e Castro and Semeraro de Medeiros 2001; Zamponi 2001; Pérez and Zamponi 2004; Cairns 2006).

Tritonia odhneri Marcus 1959 is a conspicuous, large-sized (200 mm) and bright pink-colored nudibranch inhabiting the Magellanic region; it is often collected as a by-catch in commercial fisheries conducted at 30–100 m in depth. It was reported to be a predator upon *Renilla* sp. in the San Jorge Gulf, Patagonia (Muniain et al. 2006; Riera et al. 2006) and *Leptogorgia platyclados* (Philippi 1866) in Chile (Schrödl 2003).

Octocorals have been the object of extensive search of natural products from marine organisms; their bioactive

secondary metabolites are abundant and have been isolated in many species (Barsby and Kubanek 2005; Berrue and Kerr 2009). In parallel to the present work, we have conducted studies on chemical ecology and natural compounds isolated from *T. odhneri* and its coral prey (Muniain et al. 2007; García-Matucheski et al. 2009).

The objective of the present work was to provide the first report on the diet of *T. odhneri* in the southwestern Atlantic Ocean using scanning electron microscopy (SEM) and to discuss the dietary interactions in species of the genus *Tritonia* of different geographic ranges.

Materials and methods

T. odhneri specimens were collected by bottom trawl during the *Pleoticus muelleri* (Bate 1888) fisheries at the San Jorge Gulf, Chubut (2006–2008). Forty specimens were collected at 40–80 m depth, 2006 (45º25′57″S, 67º05′77″W), one specimen being deposited as a voucher at MACN-in 36987. Seven specimens were collected at 78–84 m depth, 2008 (45º10′S, 65º40′W), one specimen being deposited as voucher MACN-in 37578. Preserved specimens of *T. odhneri* from the invertebrate collection of the Museo Argentino de Ciencias Naturales (MACN-in) were examined: two specimens collected at 24 m depth, 1925 (37º35′S, 56º25′W) MACN-in 16217, 16218, three specimens collected at 36-48 m depth, 1926 (35º30′S, 52º50′W) MACN-in 16627. A total of 52 specimens of *T. odhneri* were dissected by dorsal incision of the mantle to study their anatomy and examine the contents of the esophagus, stomach and intestine, with the aid of a Leica MZ125 stereoscopic microscope equipped with a Leica EC3 digital camera. Coral tissue was carefully separated and dissolved with undiluted household bleach to obtain the sclerites. Sclerites were cleaned by ultrasonic vibration to eliminate any adhering material. Then, they were collected with micropipettes, washed in distilled water three times, rinsed in 75% EtOH, and randomly placed on aluminum stubs for SEM. The specimens and their stomach content were deposited separately as vouchers in the invertebrate collection of the Museo Argentino de Ciencias Naturales Bernardino Rivadavia, MACN. Comparative octocoral samples examined were: *R. octodentata* collected at 65 m depth, 1988 (44º48′S, 65º30′W) MACN-in 25397 (sintypes) and MACN-in 25397-1 (paratypes) collected at 25 m depth, 1985, Rada Tilly, Comodoro Rivadavia (see Tablado and Venerus 2000); *R. octodentata* specimens collected with *T. odhneri* at 40–80 m depth, 2006 (45º25′57″S, 67º05′77″W), one voucher specimen being deposited at MACN-in 34986; *Tripalea clavaria* collected at 50 m depth, 1926 (37°38″S, 56°20′W) MACN-in 16735; *Primnoella divaricata* collected at 25 m depth, 1971 (37°37′S, 56°14′W) MACN-in 36549; *Primnoella scotiae* collected at 100–133 m, 1926 (35º30′S, 52º50′W) MACN-in 16608; and *Stylatula polizoidea* collected from (40º45′S, 62º15′W), 1932, MACN-in 20313 (holotype), MACN-in 20313-1 (paratype).

Results

Studies of the internal anatomy of *T. odhneri* specimens revealed that the buccal mass had a massive musculature, occupying one-third of the organism (Fig. 1a; MACN-in 16218). The internal part of the stomach contained epidermal tissue folds arranged longitudinally one near the other and directed towards the lumen of the stomach. The diet of *T. odhneri* was composed of the gorgonaceans *Tripalea clavaria* (Studer 1878), *Primnoella divaricata* (Studer 1878), and *Primnoella scotiae* Thomson and Ritchi 1906 (= *P. compressa* Kükenthal 1919), and the pennatulaceans *Renilla octodentata* Zamponi and Pérez 1995 and *Stylatula* sp.

Tripalea clavaria

The gut content of two specimens (MACN-in 16217, 16218) of *T. odhneri* included between 20 and 25 clearly identifiable fragments of the gorgonacean *T. clavaria*. Fragments were cream-coloured and 5–15 mm long (Fig. 1a; MACN-in 16218). The stomachs were deposited, in vouchers MACN-in 16217-1, 16218-1, respectively. Most of the bits were practically intact; in those that were partially digested, the medulla of the octocoral could be observed and two types of sclerites were isolated. The sclerites from the outer layer were short and capstan, and those from the inner layer were elongated spindles with less crowded sculpture 85–150 μm in length (Fig. 1c; MACN-in 16218-1). *T. clavaria* is an erect colony, unbranched and claviform, with protuberances resulting from retracting polyps. The medulla, an inner supporting structure, is surrounded by a cortex consisting of two layers, an inner layer and outer layer or cortex (Fig. 1b; MACN-in 16735). Both layers contain sclerites 83–387 μm in length, whose morphology is identical to that of the gut content (Fig. 1c, d; MACN-in 16218-1, 16735). The geographical distribution of *T. clavaria* is known from Río de Janeiro (Brazil) to the Magellan Strait (Verseveldt 1967; Tommasi 1971; Pérez 2007; present work) (Fig. 2). This species is one of the dominant benthic organisms in rocky outcrops of Mar del Plata (Buenos Aires) at 18–20 m in depth (Excoffon et al. 2004).

Primnoella divaricata

The gut content of one specimen (MACN-in 16627) of *T. odhneri* was composed of fragments of the gorgonacean *P.*

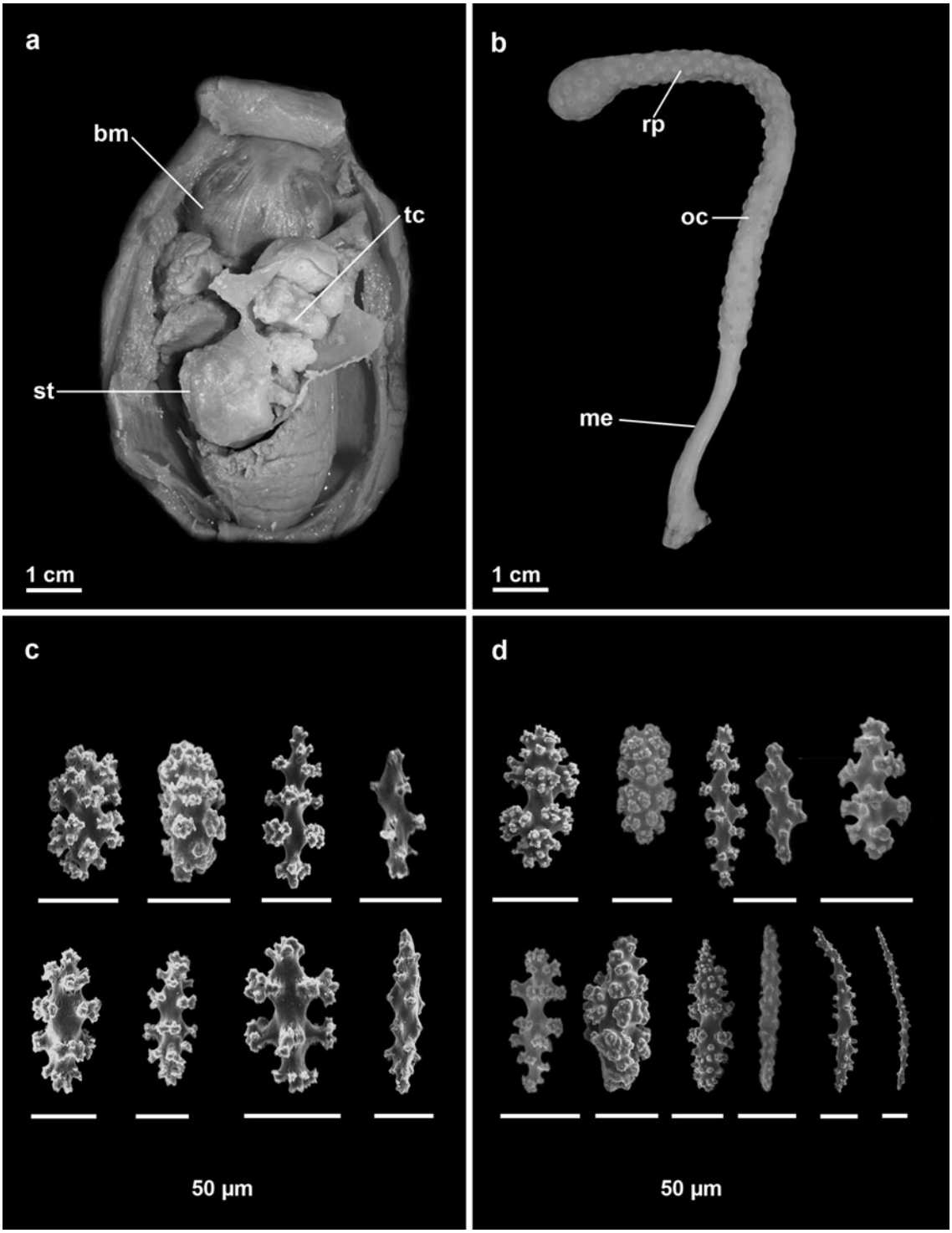

Fig. 1 **a** Digital photograph of *Tritonia odhneri* MACN-in 16218 showing the buccal mass (*bm*) and the stomach (*st*) containing bits of *Tripalea clavaria* (*tc*) MACN-in 16218-1; **b** digital photograph of *T. clavaria* MACN-in 16735 showing the medulla (*me*), the outer cortex (*oc*) and the retracting polyps (*rp*); **c** SEM images of sclerites taken from the bits of *T. clavaria* collected from the nudibranch digestive tract MACN-in 16218-1; **d** SEM images of sclerites of *T. clavaria* MACN-in 16735

divaricata. The stomach wall exhibited significant perforations produced by the axis of the octocoral. A total of 16 whitish coral fragments 6–25 mm in length, with varying degrees of digestion were observed (Fig. 3a, b, c; MACN-in 16627, 16627-1a). Some central axes were naked, others preserved sclerites in their walls, as well as entire fragments of polyp rounded in cross-section and arranged in groups of seven, of approximately 1.3 mm in diameter. The abaxial

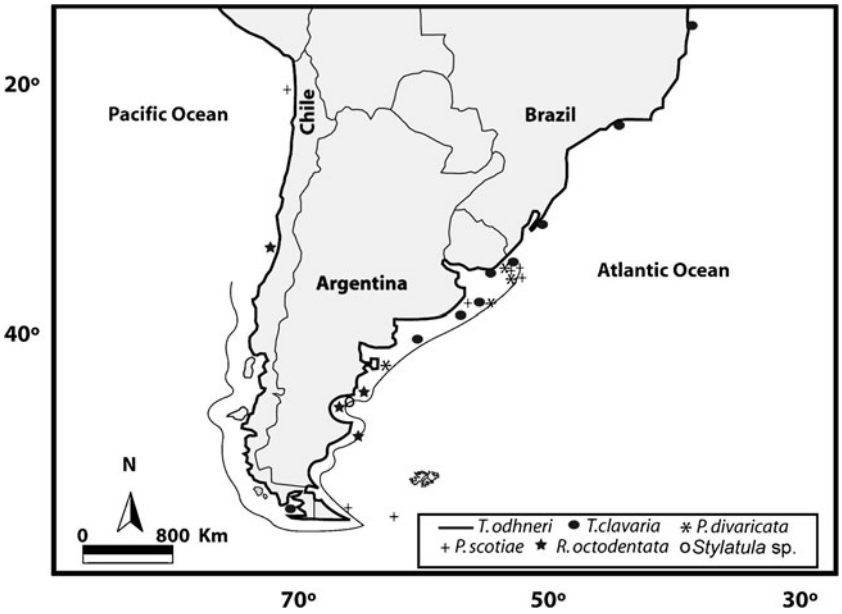

Fig. 2 Known distribution of *Tritonia odhneri*, *Tripalea clavaria*, *Primnoella divaricata, Primnoella scotiae, Renilla octodentata*, and *Stylatula* sp. across the western Atlantic Ocean from bibliographical records and the present study

scales were arranged in two longitudinal parallel rows, those in one row interlocking with the alternate scales of the other row (Fig. 3c; MACN-in 16627-1a). Rows were 125–218 μm in length and 125–194 μm in width and had 10–12 scales flat and irregular in shape; some were covered with discrete rounded tubercles and others had a smooth surface (Fig. 3e; MACN-in 16627-1a). The *P. divaricata* material examined presents whorls of 4–6 polyps of 1.1–1.5 mm in length and 0.33–0.36 mm in diameter, with abaxial scales arranged in two alternate rows of 10–12 scales each (Fig. 3d; MACN-in 36549). The sclerites present in the gut content exhibited the typical scale morphology of the sclerites of *P. divaricata* of 97–156 μm in length and 55–192 μm in width (Fig. 3f; MACN-in 36549). The geographical distribution of *P. divaricata* is known from Cabo Santa María (Uruguay) to Península Valdés (Chubut) (Kükenthal 1919; Cairns 2006; present work) (Fig. 2).

Primnoella scotiae

The gut content of two specimens (MACN-in 16627) of *T. odhneri* was composed of 16 to 23 clearly identifiable cream coral fragments of the gorgonacean *P. scotiae* of 4–30 mm in length (Fig. 4a; MACN-in 16627-1b). *P. scotiae* is an unbranched colony with polyps arranged in whorls closely spaced along the entire stem (Fig. 4b, f; MACN-in 16608). Some coral fragments were practically intact; the colonies were composed of 13 polyps 1.7–2.1 mm in length and of two longitudinal abaxial scale rows, with 18–21 scales per row, converging at a zigzag abaxial suture (Fig. 4a, c; MACN-in 16627-1b). The scales isolated from the nudibranch stomach were flat and irregular in shape. Some of them were covered with discrete rounded tubercles and others had a smooth surface. They were about 95–186 μm in length and 105–233 μm in width (Fig. 4e; MACN-in 16627-1b). These taxonomical characters were identical to those of *P. scotiae* (MACN-in 16608 deposited as *P. compressa*), which had 13-polyp whorls of 1.7–2.1 mm in length, with abaxial scales arranged in two alternate rows of 23–25 scales each. The sclerites were 105–200 μm in length and 200–284 μm in width (Fig. 4d, f, g; MACN-in 16608). *P. scotiae* shows a geographical distribution from the Río de la Plata estuary (35º30′S, 52º 50′W), through Tierra del Fuego, Scotia Sea (53º06′S, 42º01′W), Burdwood Bank (54º25′S, 57º32′W) (Thomson and Ritchi 1906; present work), to Iquique, Chile (= *P. compressa* Kükenthal 1919; Tixier-Durivault 1970; Pérez and Zamponi 2004) (Fig. 2).

Renilla octodentata

The stomachs of 32 specimens of *T. odhneri* from the San Jorge Gulf contained only sclerites from the pennatulacean *R. octodentata* (Fig. 5a, c; MACN-in 36987-1). *R. octodentata* presents a bilobulated or kidney raquis, violet dorsally and white ventrally, with a dorsal median tract free of polyps and calyx autozooides; the species bears eight calicinal teeth, and sclerites are present throughout the rachis (Fig. 5b, d, f; MACN 34986). The sclerites isolated from the nudibranch stomach were of identical morphology, colouring and size to those obtained from the specimen of *R. octodentata* MACN-in 34986,

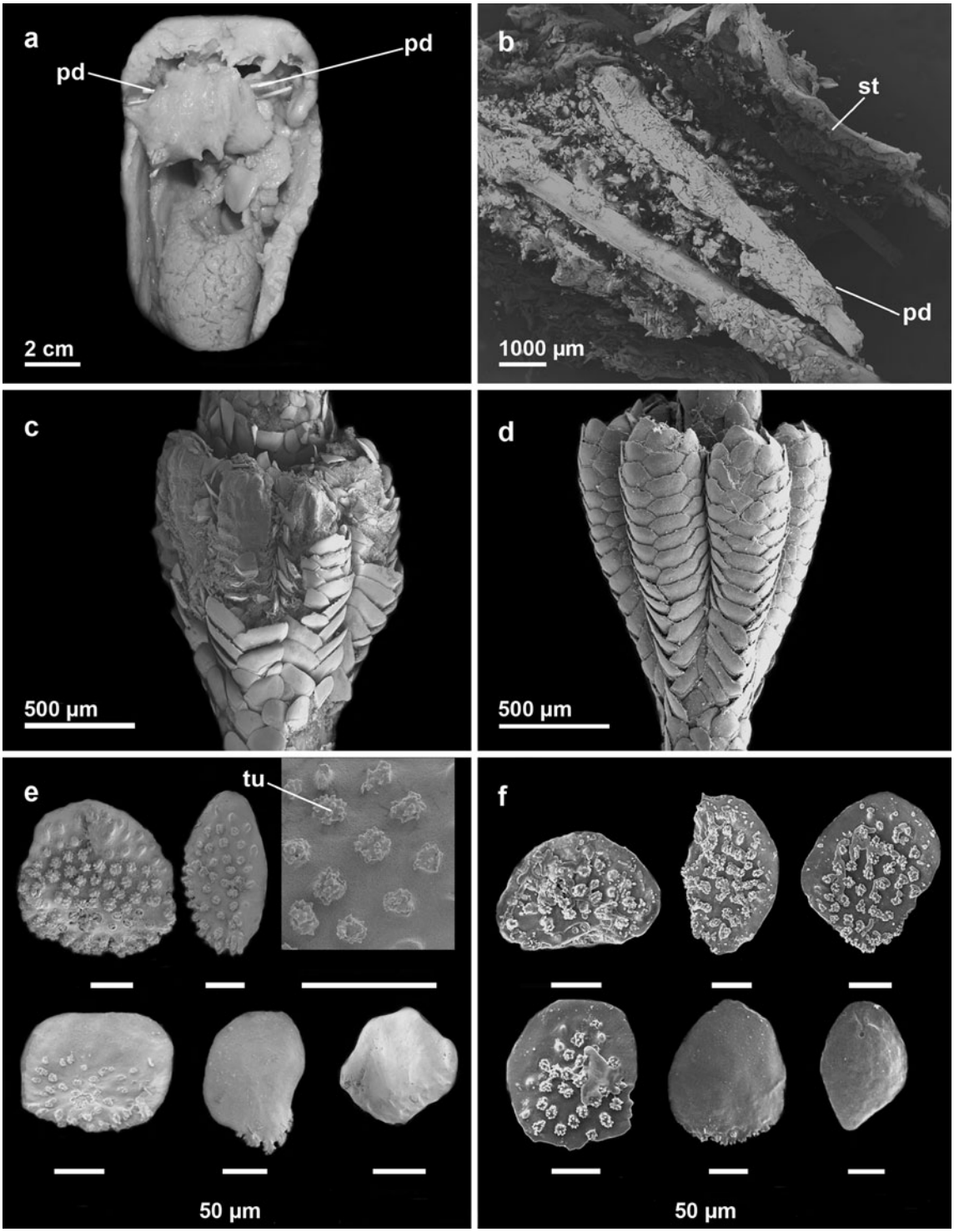

Fig. 3 **a** Digital photograph of Tritonia odhneri MACN-in 16627 showing a stomach (*st*) full of axes of *Primnoella divaricata* (*pd*); **b** SEM images of a portion of the stomach (*st*) MACN-in 16627-1a of *T. odhneri* showing the bits of *P. divaricata* (*pd*) inside; **c** SEM image of a polyp whorl of *P. divaricata* isolated from the nudibranch stomach MACN-in 16627-1; **d** SEM image of a polyp whorl of *P. divaricata* MACN-in 36549; **e** SEM images of sclerites taken from the nudibranch stomach MACN-in 16627-1, showing a detail of the (*tu*) tubercles of a scale; **f** SEM images of sclerites of *P. divaricata* MACN-in 36549

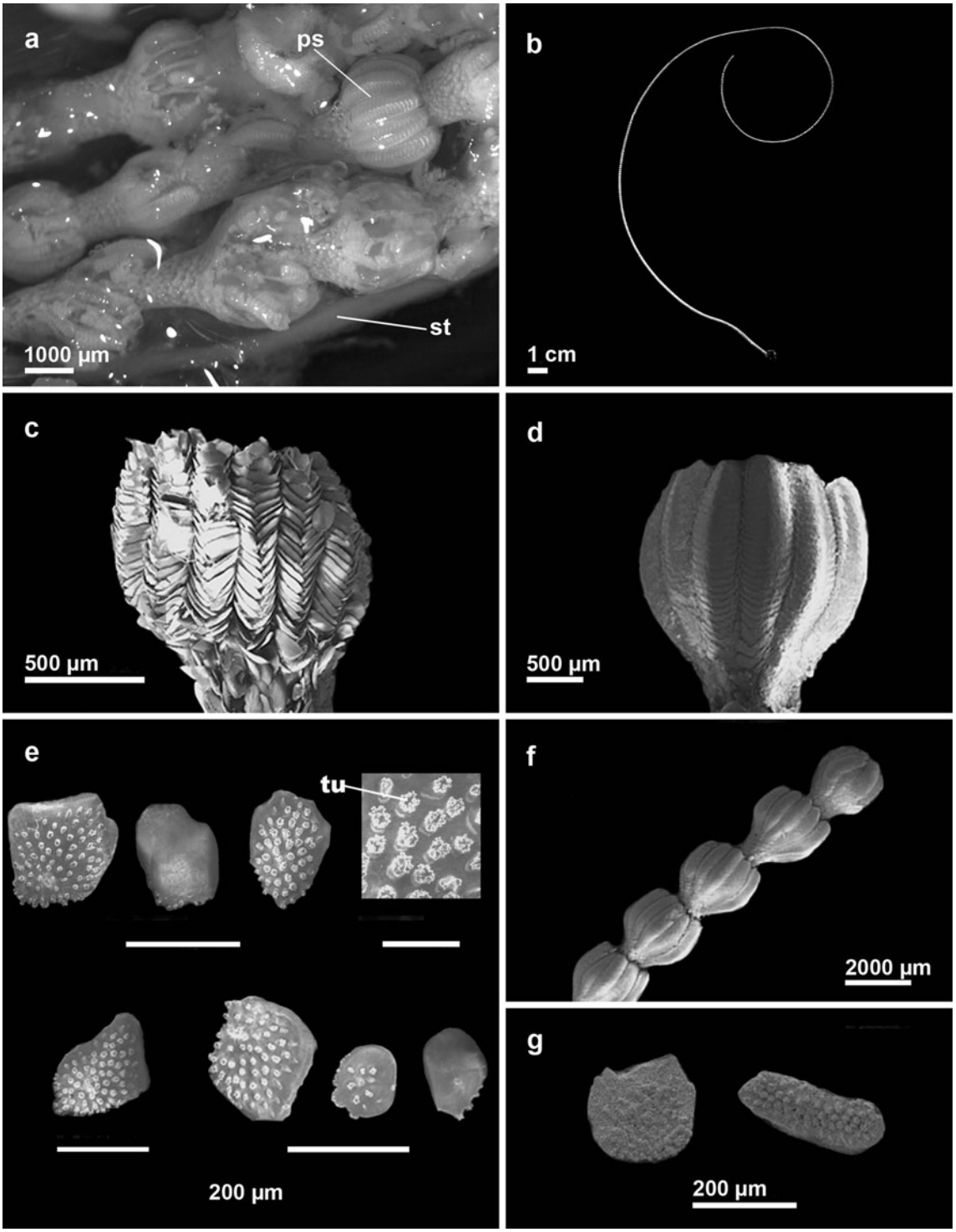

Fig. 4 **a** Stereoscopic photograph of a portion of *T. odhneri* stomach (*st*) MACN-in 16627-1b showing fragments of *Primnoella scotiae* (*ps*); **b** digital photograph of *P. scotiae* MACN-in 16608; **c** SEM image of a polyp whorl of *P. scotiae* isolated from the nudibranch stomach MACN-in 16627-1b; **d** SEM image of a polyp whorl of *P. scotiae* MACN-in 16608; **e** SEM images of sclerites taken from the nudibranch stomach MACN-in 16627-1b, showing a detail of the (*tu*) tubercles; **f**, **g** Polyps and sclerites of *P. scotiae* MACN-in 16608

collected together with the nudibranch MACN-in 36987. In both cases, sclerites were deep violet and rod-shaped with rounded end and ranged between 100 and 600 µm in length (Fig. 5e, f; MACN-in 36987-1, MACN-in 34986).

The geographical distribution of *R. octodentata* is known from San Jorge Gulf to Bahía de Valparaíso, Chile (33ºS, 72ºW) (Zamponi and Pérez 1995; Pérez 1996; Zamponi 2001; present work) (Fig. 2).

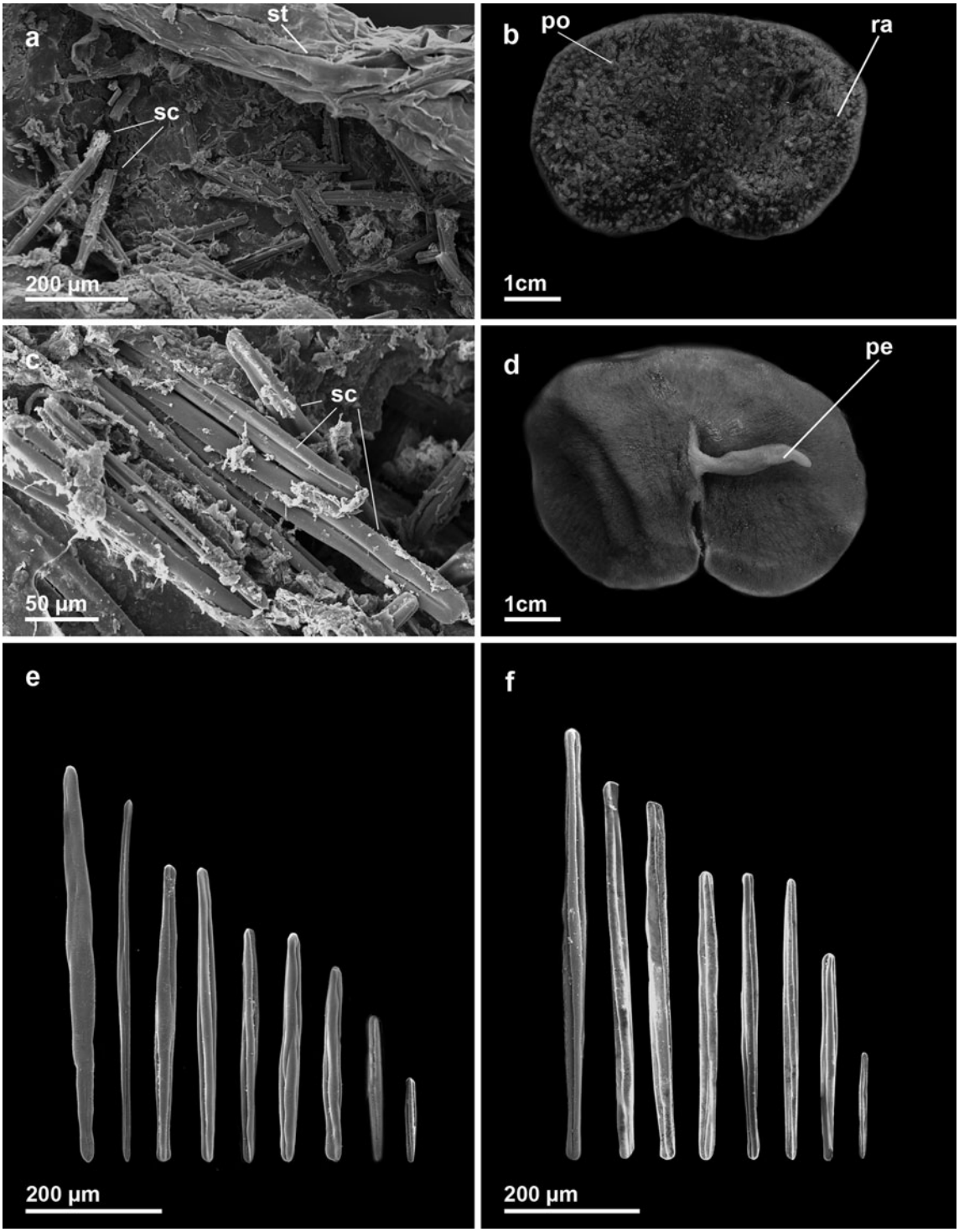

Fig. 5 **a** SEM images of a portion of *T. odhneri* stomach (*st*) MACN-in 36987-1 showing the sclerites (*sc*) of *Renilla octodentata*; **b** digital photograph of the dorsal view of *R. octodentata* MACN-in 34986 showing the raquis (*ra*) and the polyps (*po*); **c** SEM image of a group of sclerites (*sc*) in the nudibranch stomach MACN-in 36987-1; **d** Ventral view of *R. octodentata* MACN-in 34986 showing the peduncule (*pe*); **e** SEM images of sclerites of *R. octodentata* isolated from the nudibranch stomach MACN-in 36987-1; **f** SEM images of sclerites of *R. octodentata* isolated from the coral sample MACN-in 34986

***Stylatula* sp.**

The gut content of seven specimens of *Tritonia odhneri* from San Jorge Gulf was composed of 6–25 fragments of the pennatulacean *Stylatula* sp. They were cream-coloured, 8.4–12 mm in length, with several white sclerites dispersed. Some fragments had the calcareous plates intact, without the autozooids, and others exhibited the axis completely naked

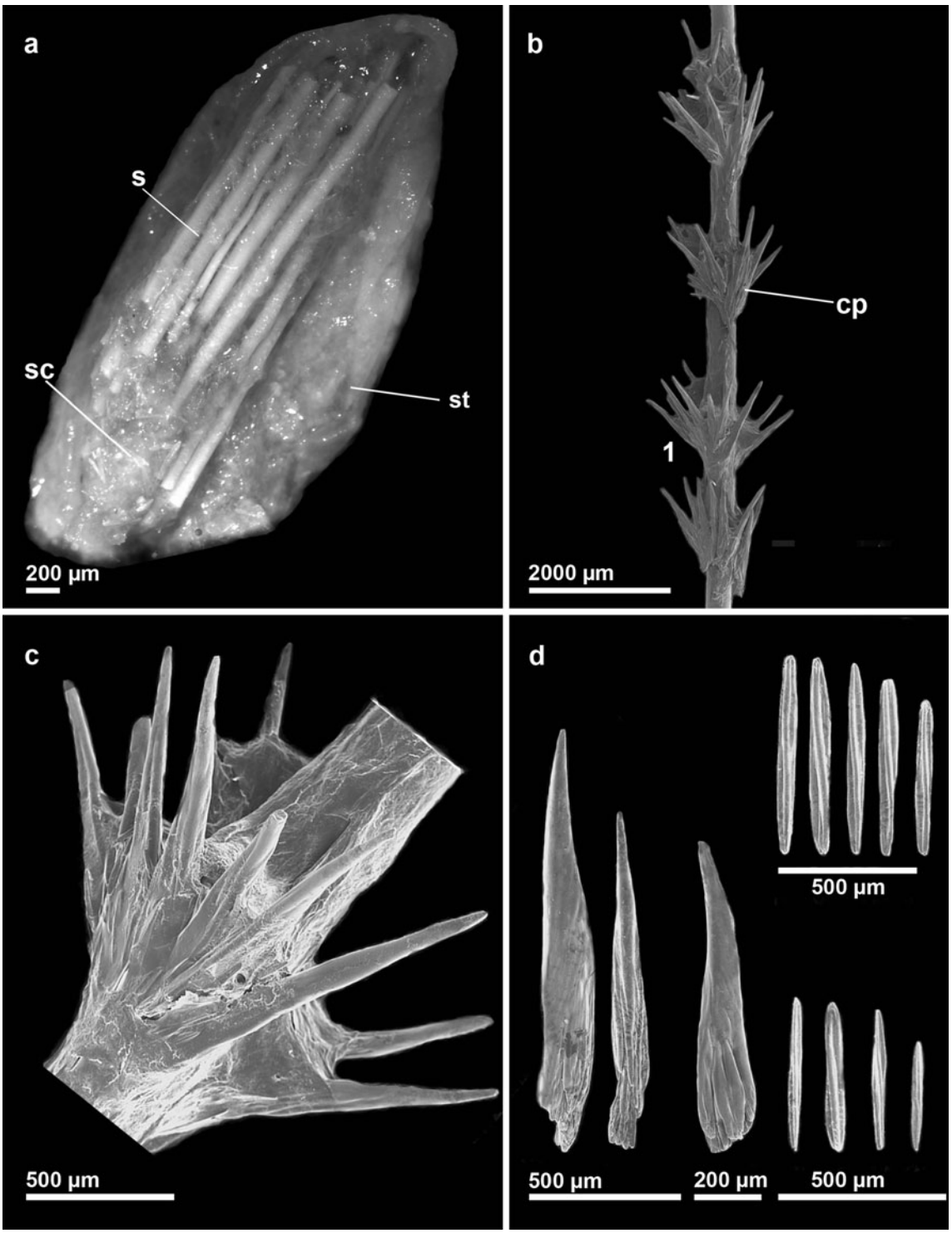

Fig. 6 **a**) Stereoscopic photograph of a portion of the stomach (*st*) of *T. odhneri* (MACN-in 37578) showing fragments of *Stylatula* sp. (*s*) and its sclerites (*sc*); **b** SEM images of a fragment of *Stylatula* sp. MACN-in 37578-1 showing the calcareous plates (*cp, 1*); **c** detail of the calcareous plates; **d** SEM images of *Stylatula* sp. sclerites isolated from the nudibranch stomach MACN-in 37578-1

(Fig. 6a, b, c; MACN-in 37578-1). Calcareous plates were well-spaced one from the other and arranged in pairs on opposite sides along the rachis (Fig. 6b). They had 5–9 projecting needles of 857–1,441 μm in length, and numerous smaller sclerites on plate bases of 198–655 μm in length; the smallest sclerites were three-flanged rods with rounded ends (Fig. 6c, d; MACN-in 37578-1). The geographical distribution of the species of *Stylatula* is known from Argentina as follows: *S. polyzoidea* Zamponi and Pérez 1996 from Buenos Aires to Chubut (Zamponi and Pérez 1996, MACN-in 20313); *S. antillarum* Kölliker 1860 from the Caribbean (Antilles) to Santa Cruz (Zamponi and Pérez 1996); and *S. darwinii* Kölliker 1870 from the Caribbean, through Río de Janeiro to Chubut (Zamponi and Pérez 1996; Barreira e Castro and Semeraro de Medeiros 2001) (Fig. 2).

Discussion

The bibliographic review conducted in the present work reveals that the octocoral prey of species of the genus *Tritonia* belong to the orders Alcyonacea, Gorgonacea, Pennatulacea, and Stolonifera (Table 1). In general, species of Tritoniidae feed on prey species included in those orders (Gosliner and Ghiselin 1987; Willan 1988; McDonald and Nybakken 1996, 1999; Smith and Gosliner 2003, 2005). An exception is a recently described species of *Tritonia*, which has been found upon its prey, a species of *Epizoanthus* (Cnidaria: Anthozoa) (Bertsch et al. 2009).

Our results indicate that the Magellanic nudibranch *Tritonia odhneri* has an octocoral-specific diet, and that in the Argentine sea, the species predates on at least five species, *P. divaricata, P. scotiae* (=*P. compressa*), *T. clavaria, R. octodentata* and *Stylatula* sp., all of them endemic to South America (Tommasi 1971; Pérez and Zamponi 2004; Cairns 2006; Pérez 2007).

According to our recent research work, *T. odhneri* predates mostly upon *R. octodentata*; this interaction remaining constant throughout the year in the San Jorge Gulf, at 10–100 m in depth (Riera et al. 2006; Muniain, unpublished data). In the Pacific Ocean in Chile (Bahía de Coliumo), *T. odhneri* has been observed on the gorgona-

Table 1 Summary of known dietary interactions in species of the genus *Tritonia* of different geographical ranges (updated from McDonald and Nybakken 1996, 1999)

Species	Prey	References
Tritonia bayeri	*Briareum asbestinum*; *Leptogorgia virgulata*; *Pseudopterogorgia* sp.	McDonald and Nybakken 1996
Tritonia bollandi	*Verrucella aurantia*	Smith and Gosliner 2003
Tritonia challengeriana	*Alcyonium antarcticum*	Wägele 1995
Tritonia diomedea	*Ptilosarcus gurneyi*; *Stylatula elongata*; *Virgularia* sp.	McDonald and Nybakken 1996, 1999; Wyeth et al. 2006; Behrens 2007
Tritonia festiva	*Clavularia* sp.; *Discophyton rudyi*; *Gersemia fruticosa* ; *Gersemia rubiformis*; *Leptogorgia chilensis*; *Ptilosarcus gurneyi*	McDonald and Nybakken 1996, 1999; Goddard 2006
Tritonia griegi	*Paramuricea placomus*	McDonald and Nybakken 1996, 1999
Tritonia hamnerorum	*Gorgonia flabellum*; *Gorgonia ventalina*	McDonald and Nybakken 1996, 1999
Tritonia hawaiiensis	*Anthelia edmondsoni*	McDonald and Nybakken 1996, 1999
Tritonia hombergi	*Alcyonium digitatum; Antennularia* sp.	Bulloch and Dorsett 1979; McDonald and Nybakken 1996, 1999
Tritonia incerta	*Alcyonium aurantiacum*	McDonald and Nybakken 1996, 1999
Tritonia lineata	*Kirchenpaueria pinnata; Sarcodictyon catenata*	McDonald and Nybakken 1996, 1999
Tritonia manicata	*Cornularia cornucopiae; Clavularia* sp.	McDonald and Nybakken 1996, 1999
Tritonia myrakeenae	*Gorgonians and octocorals* (not identified)	Camacho-García et al. 2005
Tritonia nilsodhneri	*Eunicella verrucosa; Eunicella singularis; Leptogorgia sarmentosa*	McDonald and Nybakken 1996, 1999
Tritonia odhneri	*Leptogorgia platyclados ; Primnoella divaricata; Primnoella scotiae; Renilla octodentata; Stylatula* sp.*; Tripalea clavaria*	Schrödl 2003; present work
Tritonia papalotla	*Epizoanthus* sp.	Bertsch et al. 2009
Tritonia plebeia	*Alcyonium digitatum; Alcyonium siderium; Eunicella verrucosa; Leptogorgia (Lophogorgia) sarmentosa; Obelia geniculata; Paramuricea placomus*; *Halecium* sp.	Allmon and Sebens 1988; McDonald and Nybakken 1996, 1999
Tritonia pickensi	*Leptogorgia chilensis; Psammogorgia arbuscula; Muricea* sp.	McDonald and Nybakken 1996, 1999; Camacho-García et al. 2005
Tritonia striata	*Paralcyonium elegans*	McDonald and Nybakken 1996, 1999
Tritonia vorax	*Pachyclavularia cylindrica*	McDonald and Nybakken 1996, 1999
Tritonia wellsi	*Gorgonia ventalina*; *Leptogorgia virgulata*	McDonald and Nybakken 1996, 1999

cean *Leptogorgia platyclados* (=*Lophogorgia*) at 9–15 m in depth (Table 1; Schrödl 2003, Fig. 39A), but the dietary interaction has not been confirmed for Chilean specimens through specific studies of gut content.

A comparison of the prey species of *Tritonia* revealed that *Renilla* sp. would not be included in the diet of any of them (Table1). *T. diomedea* inhabits subtidal waters (5–750 m) in the northern Pacific Ocean and feeds on pennatulaceans, preferentially on the species *Ptilosarcus gurneyi*. However, another nudibranch, *Armina californica* (Cooper 1863), has been mentioned by Bertsch (1968) as an important predador of *R. koellikeri* in the same habitats.

The tritoniids MACN-in 16217 and MACN-in 16218 collected from 37º35′S, 56º25′W consumed the gorgonacean *T. clavaria*. Two types of sclerites were found both in the stomach and in the coral sample MACN-in 16735. This is in agreement with the description of Bayer (1961), who reported that those capstan sclerites that are like short, belted spindles correspond to the outer layer of the cortex, and those longer with less crowded sculture, to the inner cortex. The present work is the first SEM analysis of *T. clavaria* structures. The fragments found in the stomach were whitish, whereas the original colouring of *T. clavaria* is light orange (Excoffon et al. 2004). The latitude at which individuals of *T. odhneri* containing *T. clavaria* in their stomachs were found (37º35′S, 56º25′W) agrees with the known distributions for both species (Fig. 2).

The nudibranch MACN-in 16627 from 35º30′S, 52º 50′W fed on the gorgonacean *P. divaricata*. Three species of this genus have been described for this locality: *P. chilensis* (=*Primnoella biserialis*), *P. divaricata* and *Primnoella scotiae* (=*Primnoella compressa*) according to recent reviews (Pérez and Zamponi 2004; Cairns 2006; Cairns and Bayer 2009). The morphological characteristics of *Primnoella* fragments found in the stomach are consistent with those described by Cairns (2006) for *P. divaricada*, polyps arranged in 4–7 whorls, rounded in cross-section, 1.00–1.3 mm in length and 0.38–0.45 mm in diameter. The abaxial scales are arranged in two alternate rows of 10 or 11 scales each. The present data make an important contribution, since part of the specimens of the MACN collection analysed were collected in 1925–1926 and are in a perfect state of preservation.

Regarding predation on *Stylatula* species, we were not able to identify the octocoral fragments to species level because the three species cited for the Argentine sea do not agree with our descriptions and the lack of SEM images hamper taxonomic comparisons (Zamponi and Pérez 1996).

The present analysis of prey–predator interactions indirectly contributes to improve poorly conducted taxonomic and biogeographic studies on several octocoral species found in the Argentine sea. Our research group focuses on an interdisciplinary research line in the search of active metabolites in nudibranchs and their prey. Numerous opisthobranchs are known to sequester chemical defences from their prey and use them for their own defence (McClintock et al. 1994; Cimino and Gavagnin 2006). Until now, information on secondary metabolites is available only for one species of the genus *Tritonia*, *T. hamnerorum* Gosliner and Ghiselin 1987 (Cronin et al 1995; Cimino and Ghiselin 2009). For this reason, in parallel to the present research, we are conducting studies on the chemical ecology of *T. odhneri* and its prey to identify the origin of the metabolite (dietary or de novo biosynthesis origin), its location in the nudibranch body and the role it plays (Muniain et al. 2007; García-Matucheski et al. 2009).

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