Summary
This contribution reports on six holothuroids that have recently been collected on the Mediterranean continental slope. One species, *Pseudothyone serrifera* (Oestergren, 1898) (Holothuroidea, Dendrochirotida), is a new record for the Mediterranean Sea (Capraia Island, Italy). This uncommon species was hitherto only known from the North Atlantic (Scandinavia, the Faroe Islands and the Bay of Biscay). We provide a re-description of *P. serrifera.*

Key words
Range extension, Capraia Island, Sclerodactylidae, biogeography

Résumé
A propos d'une petite collection d'holothuries provenant du talus continental méditerranéen avec la description concise de *Pseudothyone serrifea* (Oestergren, 1898) (Holothuroidea ; Dendrochirotida) espèce nouvelle pour la faune méditerranéenne
Cet article traite de six espèces d'holothuries qui ont récemment été récoltées sur le talus continental méditerranéen. L'espèce *Pseudothyone serrifera* (Oestergren, 1898) est nouvelle pour la faune de la mer Méditerranée (île de Capraia, Italie). Cette espèce rare n'était jusqu'ici seulement connue de l'Atlantique nord (Scandinavie, les îles Féroé et Golfe de Gascogne). Une redescription de *P. serrifera* est donnée.

Mots clés
Extension de distribution, île de Caprai, Sclerodactylidae, biogéographie

On a small collection of sea cucumbers from the Mediterranean continental slope with the first report and re-description of *Pseudothyone serrifera* (Oestergren, 1898) (Holothuroidea, Dendrochirotida) a new species for the Mediterranean Sea.

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Introduction

The continental shelf (0-200 m depth) of the Mediterranean Sea (Spain, France and Italy) has been intensively prospected (**Cherbonnier, 1959; Tortonese, 1949; 1964; 1980; Perez Ruzafa & Lopez-Ibor, 1988**) and its holothuroid fauna is well known. However, the continental slope (200-1000 m depth) has only been occasionally prospected (**Hérouard, 1902; Sibuet, 1974**), so it is not surprising that new records could be added recently (**Massin, 1996; 1997**). The present paper reports on a small collection of holothuroids that were collected in 2003 and 2004 during two oceanographic campaigns of the RV Urania (CORTI and COBAS campaigns respectively) and re-describes *Pseudothyone serrifera*, which represents a new record for Italy and the Mediterranean Sea.

Material and methods

Acronyms
ED: Epibentic Dredge;
ETD: Epibentic Triangular Dredge;
m: meter;
ns: number of specimens;
RBINS: Royal Belgian Institute of Natural Science;
RD: Rock Dredge.

Material has been collected during two oceanographic campaigns of the RV Urania: CORTI (December 2003) and COBAS (April 2004). Table 1 summarizes the stations where holothurians have been collected. Sea cucumbers were sorted on board by Dr H Zibrowius (Station Marine d'Endoume, Marseille) and sent to the RBINS for identification and deposition. Specimens have been registered in the collections of the RBINS under the general inventory number I.G. 31014. Register numbers of the separate species are provided in Table 2.

Table 1 gives an overview of the sampled stations and the gear used.

Campaign	Station	Locality	Depth	Gear	Date
CORTI	23	43°21'N-10°17'	58	ETD	23.XII.2003
CORTI	24	43°17'N-9°22'E	210	ETD	28.XII.2003
CORTI	29	43°14'N-9°36'E	399	ETD	28.XII.2003
CORTI	55	43°'18'N-9°29'E	303	ETD	30.XII.2003
CORTI	7	36°31'N-2°55'W	475	RD	10.IV.2004
CORTI	23	36°31'N-2°53'W	289	grab	10.IV.2004
CORTI	25	36°31'N-2°50'W	350	grab	11.IV.2004
CORTI	27	36°3 'N-2°55'W	459	grab	11.IV.2004
CORTI	31	36°36'N-2°54'W	180	RD	11.IV.2004
CORTI	33	36°30'N-2°49'W	429	RD	11.IV.2004
CORTI	34	36°36'N-2°50'W	82	grab	11.IV.2004
CORTI	37	36°47'N-1°39'W	831	grab	12.IV.2004
CORTI	51	38°39'N-00°57'W	344	ETD	12.IV.2004
CORTI	78	38°45'N-1°18'E	96	ED	12.IV.2004

Table 1. Data of collected stations

Results

Table 2 gives the species and number of specimens per station.

Campaign	Station	Species	RBINS register number	ns
CORTI	23	*Labidoplax digitata* (Montagu, 1815)	HOL.1586	1
CORTI	24	*Labidoplax digitata* (Montagu, 1815)	HOL.904/8	22
CORTI	29	*Pseudothyone serrifera* (Oestergren, 1898)	HOL.1587	1
CORTI	55	*Mesothuria intestinalis* (Askanius & Rathke)	HOL.1588	1
CORTI	7	*Labidoplax digitata* (Montagu, 1815)	HOL.904/4	1
CORTI	23	*Thyone fusus* (O.F. Müller, 1788)	HOL.906	1
CORTI	25	*Labidoplax digitata* (Montagu, 1815)	HOL.904/5	1
CORTI	27	*Labidoplax digitata* (Montagu, 1815)	HOL.904/2	1
CORTI	31	*Labidoplax digitata* (Montagu, 1815)	HOL.904/7	3
CORTI	33	*Labidoplax digitata* (Montagu, 1815)	HOL.904/3	5
CORTI	34	*Steroderma kirsberghi* (Heller, 1868)	HOL.907	1
CORTI	37	*Labidoplax digitata* (Montagu, 1815)	HOL.904/6	2
CORTI	51	*Labidoplax digitata* (Montagu, 1815)	HOL.904/1	1
CORTI	78	*Trachythone tergestina* (Sars, 1857)	HOL.905	1

Table 2. Overview of the collected species.

Table 3 provides the known depth distributions and the here recorded depths of the collected species. Recorded bathymetric ranges largely correspond with the literature apart for *Labidoplax digitata* (Table 3).

Species	Bathymetric range according to literature	Bathymetric range here recorded
Mesoturia intestinalis	18-4255 m (Tortonese, 1949)	300 m
Labidoplax digitata	20-655 m (Hansen & Madsen, 1994)	58-831 m
Thyone fusus	10-460 m (Hansen & Madsen, 1994)	285 m
Pseudothyone serrifera	200-1000 m (Hansen & Madsen, 1994)	399 m
Stereoderma kirshberghi	50-80 m (Tortonese, 1965)	82 m
Trachythyone tergestina	14-170 m (Massin 1996)	96 m

Table 3. Known depth distributions and the here recorded depths of the collected

Six species have been collected viz. *Pseudothyone serrifera*, *Thyone fusus*, *Stereroderma kirchberghi*, *Trachythyone tergestina*, *Mesothuria intestinalis* and *Labidoplax digitata* (see Table 2.). Dendrochirotida and Aspidochirotida are represented by a single species at 4 stations whereas *L. digitata* is represented by 17 specimens from 9 stations.

The collected species have an Atlantic Mediterranean distribution (see **Koehler, 1927; Tortonese 1949; 1964; Hansen & Madsen, 1994**). Only *Pseudothyone serrifera* is a new record for the Mediterranean Sea (Capraia Island, Ligurian Sea, Italy). This uncommon species was *hitherto* only known from Scandinavia, the Faroe Islands and the Bay of Biscay. Its bathymetric range is here extended to 831 m.

Dendrochirotida (Grube, 1840)
Sclerodactylidae (Panning, 1949)
Pseudothyone (Panning, 1949)
Pseudothyone serrifera (Oestergren, 1898) (Figure 1A-D)
Thyone serrifera (Oestergren, 1898): 133; fig. 2; (Mortensen, 1924: 235, fig.115; (Mortensen, 1927: 406, fig. 245(2); Koehler, 1927: 194; Oestergren, 1938; 140, pl IX fig.8-10; Kramer, 1971, 193, figs 1-3).
Pseudothyone serrifera (Panning, 1949); (Hansen & Madsen, 1994: 36 fig. 20-21, map 8; Hansson, 2001: 349).

Description

The specimen (CORTI station 29) is 9 mm long and 4.5-5.0 mm across (Figure 1A). Colour of preserved specimen: whitish. Body wall covered by sand grains and shell fragments. Posterior part with a small tail (Figure 1A). Ventral podia mainly along the ambulacra, numerous, long, very fine (Figure 1A); dorsal podia all over the surface, thick, less numerous than ventrally.

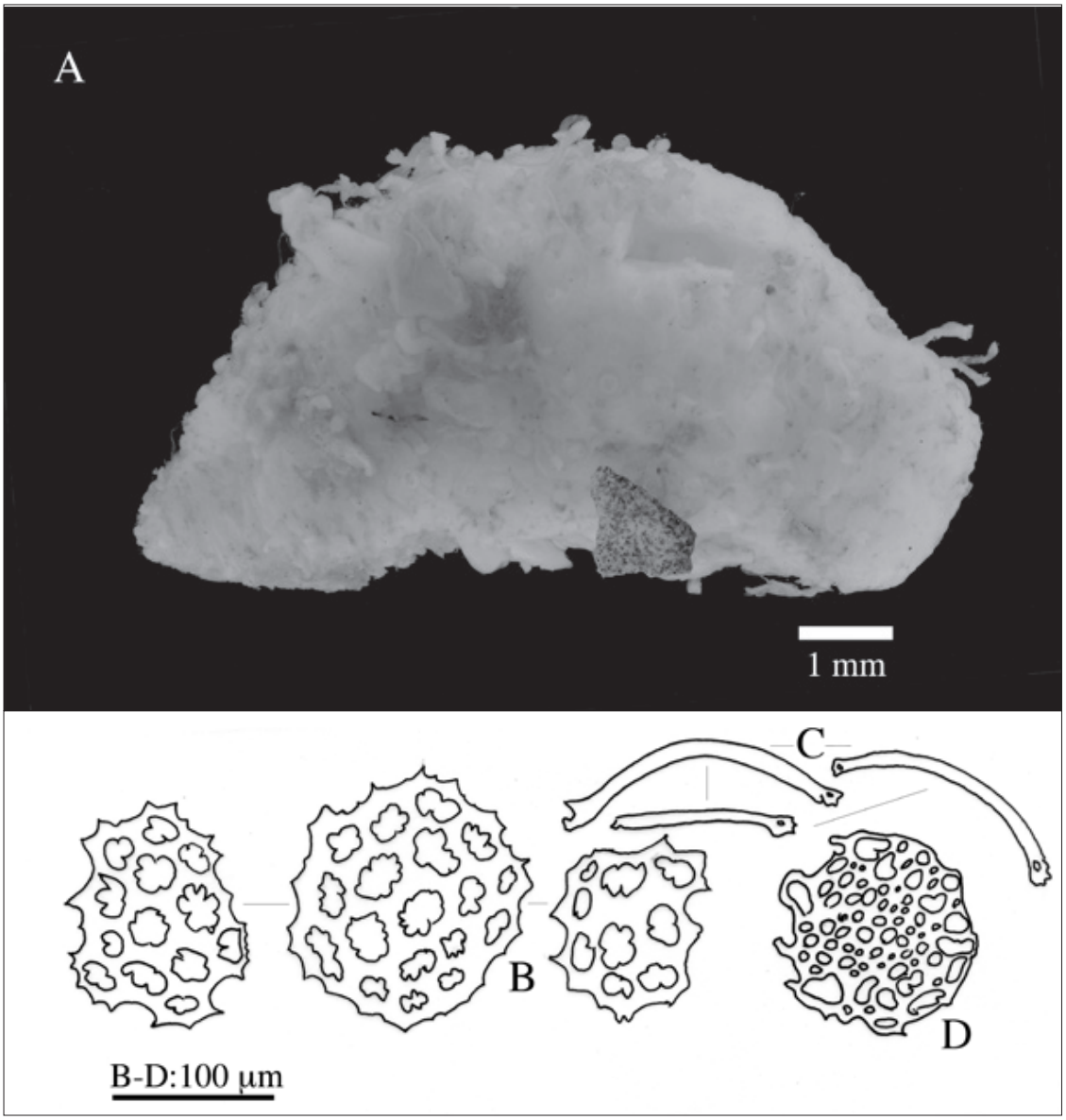

Figure 1. Pseudothyone serrifera (Oestergren, 1898). A: General view; B: body wall spiny perforated plates; C: curved small rods of the tube feet; D: end plate of the tube feet.

Ossicles of dorsal and ventral body wall are spiny perforated plates 130-170 µm across (Figure 1B); tube feet with few curved smooth rods (Figure 1C) with perforated extremities, 119-170 µm across. End plates 110-140 µm cross (Figure 1D).

Remarks

The ossicle assemblage of this species appears very constant over the distribution range (e.g. the body wall ossicles illustrated by **Madsen & Hansen, 1994**: Figure 20 versus those illustrated in the present Figure 1B).

Pseudothyone serrifera was first described from the European Atlantic Coast and now from the Occidental Mediterranean Sea. Same distribution was known for *Psolidium complanatum* (**Massin,**

1997) and many other echinoderms (**Cherbonnier, 1969; Sibuet, 1974; Perez Ruzafa & Lopez-Ibor, 1988**).

The present observation supports the Atlantic origin of the marine fauna of the occidental Mediterranean Sea.

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