

Deep-sea fauna of European seas: An annotated species check-list of benthic invertebrates living deeper than 2000 m in the seas bordering Europe. Aplacophora

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ABSTRACT: An annotated check-list is given of Aplacophora species occurring deeper than 2000 m in the seas bordering Europe. The check-list is based on published data. The check-list includes 18 species. For each species synonymy, data on localities in European seas and general species distribution are provided. Station data are presented separately in the present thematic issue.

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KEY WORDS: deep-sea fauna, European seas, Aplacophora.

Глубоководная фауна европейских морей: аннотированный список видов донных беспозвоночных, обитающих глубже 2000 м в морях, окружающих Европу. Арпласорфора

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РЕЗЮМЕ: Приводится аннотированный список видов Арпласорфора, обитающих глубже 2000 м в морях, окружающих Европу. Список основан на опубликованных данных. Список насчитывает 18 видов. Для каждого вида приведены синонимия, данные о нахождении в европейских морях и сведения о распространении. Данные о станциях приводятся в отдельном разделе настоящего тематического выпуска.

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КЛЮЧЕВЫЕ СЛОВА: глубоководная фауна, европейские моря, Арпласорфора.

Phylum Mollusca
Class Aplacophora
Subclass Solenogastres
Family Acanthomeniidae

Genus *Acanthomenia* Thiele, 1913

TYPE SPECIES: *Acanthomenia gaussiana* Thiele, 1913 (by monotypy).
 COMPOSITION: 2 species.
 DISTRIBUTION: 2000–4300 m, Atlantic — 1, Antarctic (Davis Strait) — 1.
 CENTRE OF DIVERSITY: unknown.

***Acanthomenia arcuata* Scheltema, 1999**

Acanthomenia arcuata Scheltema, 1999: 7–10, fig. 1A, B, 2, 3A, B, 4.
 LOCALITIES: INCAL (CENTOB), St. DS 01, DS 02, DS 05, DS 06, DS 07, DS 08, DS 09, DS 15, DS 16, CP 01, CP 02, CP 03, CP 04, CP 05, CP 06, CP 07, OS 01, OS 06, OS 07, OS 08, WS 01, WS 07, WS 09 (Scheltema, 1999).
 DISTRIBUTION: West European Basin.
 DEPTH RANGE: 2068–4327 m.

Family Dondersiidae

Genus *Lyratoherpia* Salvini-Plawen, 1978

TYPE SPECIES: *Lyratoherpia carinata* Salvini-Plawen, 1978.
 COMPOSITION: 2 species.
 DISTRIBUTION: 385–2091 m, Atlantic — 1, Antarctic (Ross Sea) — 1.
 CENTRE OF DIVERSITY: unknown.

***Lyratoherpia incali* Scheltema, 1999**

Lyratoherpia incali Scheltema, 1999: 11–15, fig. 1C, E, 3C, D, 5, 6.
 LOCALITIES: INCAL (CENTOB), Sta. DS-01 (Scheltema, 1999).
 DISTRIBUTION: Type locality.
 DEPTH RANGE: 2091 m.

Family Macellomeniidae

Genus *Macellomenia* Simroth, 1893

TYPE SPECIES: *Paramenia palifera* Pruvot, 1893 (by monotypy).
 COMPOSITION: 2 species.
 DISTRIBUTION: 80–2897 m, Atlantic — 2, Mediterranean Sea — 1.
 CENTRE OF DIVERSITY: unknown.

***Macellomenia aciculata* Scheltema, 1999**

Macellomenia aciculata Scheltema, 1999: 25–27, fig. 11, 12.
 LOCALITIES: INCAL (CENTOB), St. DS-09, WS-02 (Scheltema, 1999).
 DISTRIBUTION: West European Basin.
 DEPTH RANGE: 2498–2897 m.

Family Simrothiellidae

Genus *Kruppomonia* Nierstrasz, 1905

TYPE SPECIES: *Kruppomonia minima* Nierstrasz, 1905 (by monotypy).
 COMPOSITION: 4 species.
 DISTRIBUTION: 250–4327 m, Atlantic — 4, Mediterranean Sea — 1.
 CENTRE OF DIVERSITY: unknown.

Kruppomonia levis

Scheltema et Schander, 2000

Kruppomonia levis Scheltema, Schander, 2000: 134–137, fig. 6F, H, 12A–C, F, G, 13A, 14A–D.
 LOCALITIES: INCAL (CENTOB), Sta. DS 14, DS 16, OS 07, OS 08; BIOGAS VI, St. DS 76, DS 77 (Scheltema, Schander, 2000).
 DISTRIBUTION: West European Basin.
 DEPTH RANGE: 4228–4327 m.

Kruppomonia delta

Scheltema et Schander, 2000

Kruppomonia delta Scheltema, Schander, 2000: 137–138, fig. 6G, 12D, E, H–K, 13B, 14E–J.
 LOCALITIES: INCAL (CENTOB), Sta. DS 15, DS 16, OS 06, OS 08 (Scheltema, Schander, 2000).
 DISTRIBUTION: West European Basin.
 DEPTH RANGE: 4211–4327 m.

Genus *Plawenia*

Scheltema et Schander, 2000

TYPE SPECIES: *Simrothiella schizoradulata* Salvini-Plawen, 1978 (OD).
 COMPOSITION: 3 species.
 DISTRIBUTION: 2000–6000 m, Atlantic — 2, Antarctic — 1.
 CENTRE OF DIVERSITY: unknown.

Plawenia sphaera

Scheltema et Schander, 2000

Plawenia sphaera Scheltema, Schander, 2000: 140–141, fig. 15D, E, 16 sclerites 2, 8–11, 17C, D, J, 18B, G, H, K, 19D–G.
 LOCALITIES: INCAL (CENTOB), Sta. DS 01, DS 02, DS 05, CP 01, CP 02; Sarsia St. 50 (Scheltema, Schander, 2000).
 DISTRIBUTION: West European Basin.
 DEPTH RANGE: 1739–2503 m.

Genus *Simrothiella* Pilsbry, 1898

TYPE SPECIES: *Solenopus margaritaceus* Koren et Danielsen, 1978 (SD).
 COMPOSITION: 1 species.
 DISTRIBUTION: 70–2173 m, NE Atlantic — 1.
 CENTRE OF DIVERSITY: unknown.

Simrothiella margaritacea**(Koren et Danielssen, 1877)**

Simrothiella margaritacea Scheltema, Schander, 2000: 143–144, fig. 11A–C, 20–22.

LOCALITIES: “Chain-106”, St. 316 (Scheltema, Schander, 2000).

DISTRIBUTION: West European Basin.

DEPTH RANGE: 70–2173 m.

Genus *Spioenia* Arnofsky, 2000

TYPE SPECIES: *Spioenia spiculata* Arnofsky, 2000 (by monotypy).

COMPOSITION: 1 species.

DISTRIBUTION: 2070–4800 m, Atlantic — 1.

CENTRE OF DIVERSITY: unknown.

***Spioenia spiculata* Arnofsky, 2000**

Spioenia spiculata Arnofsky, 2000: 113–117, fig. 1–3.

LOCALITIES: INCAL (CENTOB), Sta. DS 02, DS 05, DS 06, DS 07, DS 08, DS 09, CP 01, CP 02, CP 05, CP 06, CP 07, CP 08, CP 09, OS 02, OS 06, WS 01, WS 02 (Arnofsky, 2000).

DISTRIBUTION: West European Basin.

DEPTH RANGE: 2068–4829 m.

Subclass Caudofoveata**Family Scutopodidae****Genus *Scutopus* Salvini-Plawen, 1968**

TYPE SPECIES: *Scutopus ventrolineatus* Salvini-Plawen, 1968.

COMPOSITION: 4 species.

DISTRIBUTION: Cosmopolitan (?), 40–3542 m, Atlantic — 3, Pacific — 1.

CENTRE OF DIVERSITY: unknown.

***Scutopus robustus* Salvini-Plawen, 1970**

Scutopus robustus Salvini-Plawen, 1970: 3–5, 2, 4; Ivanov, Scheltema, 2001: 2, 2A.

LOCALITIES: POLYMEDE I, St. KR 04/13, KR 10/31; POLYMEDE II, St. DS 21/45 (Salvini-Plawen, 1977).

DISTRIBUTION: A temperate, Iceland-East Atlantic, near-continental species, living on shelf and upper slope.

DEPTH RANGE: 50–3542 m [very common in the Atlantic and the western Mediterranean at 50 to 685 m. Three records in the Mediterranean at depth of 2415, 2917 and 3542 m (Salvini-Plawen, 1977) seem doubtful (Ivanov, Scheltema, 2001)].

Genus *Psilodens* Savini-Plawen, 1977

TYPE SPECIES: *Limifossor elongatus* Salvini-Plawen, 1972.

COMPOSITION: 2 species.

DISTRIBUTION: 1609–3760 m, Pacific — 1, Atlantic — 2.

CENTRE OF DIVERSITY: unknown.

***Psilodens tenuis* Salvini-Plawen, 1977**

Psilodens tenuis Salvini-Plawen, 1977: 415–417, 1–3.

LOCALITIES: POLYMEDE I, St. DS 14 (Salvini-Plawen, 1977).

DISTRIBUTION: Known from type locality only — Atlantic, off the Strait of Gibraltar.

DEPTH RANGE: 2500 m.

Family Prochaetodermatidae**Genus *Prochaetoderma* Thiele, 1902**

TYPE SPECIES: *Chaetoderma radulifera* Kowalevsky, 1901 (by monotypy).

COMPOSITION: 6 species.

DISTRIBUTION: 50–2290 m. Atlantic — 4, Mediterranean Sea — 1, Arabian Sea — 1, (Scheltema, 1985; Scheltema, Ivanov, 2000; Ivanov, Scheltema, 2002; Ivanov, Scheltema, 2008).

CENTRE OF DIVERSITY: unknown.

***Prochaetoderma yongei* Scheltema, 1985**

Prochaetoderma yongei Scheltema, 1985: 501–509, fig. 3a–c, 4a–c, 6–8, 14y.

LOCALITIES: INCAL, St. DS 01, DS 02; CP 07; BIOGAS IV, St. DS 52 (Scheltema, Ivanov, 2000); BIOICE, St. 2856, 2859 (Ivanov, Scheltema, 2001).

DISTRIBUTION: North American Basin, West European Basin, Cape Verde Basin, and Cape Basin (Scheltema, 1985; Scheltema, Ivanov, 2000; Scheltema, Ivanov, 2009).

DEPTH RANGE: 450–2270 m.

Genus *Chevroderma* Scheltema, 1985

TYPE SPECIES: *Chevroderma turnerae* Scheltema, 1985 (OD).

COMPOSITION: 10 species.

DISTRIBUTION: 1180–8390 m. Atlantic — 4, Indian Ocean — 5, Pacific — 2. (Scheltema, 1985; Scheltema, Ivanov, 2000; Ivanov, Scheltema, 2002; Ivanov, Scheltema, 2008).

CENTRE OF DIVERSITY: unknown.

***Chevroderma turnerae* Scheltema, 1985**

Chevroderma turnerae Scheltema, 1985: 512–516, fig. 3 l–p, 5b, d, f, 10, 15t.

LOCALITIES: “Chain-106”, St. 323, 326, 328; 330; INCAL (CENTOB), St. DS 09, DS 10, DS 11, DS 13, DS 16, CP 09, CP 10, CP 11, CP 12, OS 01, OS 02, OS 03, OS 04, OS 06, OS 07, OS 08, WS 05, WS 07, WS 08, WS 09, WS 10; NORATLANTE, St. B16, 113-EO13; ABYPLAINE (CENTOB), St. DS 07, DS 09, DS 10; BIOGAS III, St. DS 45, DS 47, DS 48, DS 50; BIOGAS IV, St. DS 55, DS 56, DS 60, KR 33, KR 35; BIOGAS V, St. DS 66, DS 67; BIOGAS VI, St. DS 77, DS 78, DS 79, DS 80, DS 82,

DS 85, CP 14, CP 15, CP 16, CP 17, CP 19, CP 20, CP 22, CP 22A; BIOGAS IX, St. KG 178; BIOGAS XI, St. KG 203, KG 206, KG 207, KG 208, KG 209, KG 210, KG 211, KG 212, KG 213, KG 215, KG 216, KG 218 (Scheltema, 1985; Scheltema, Ivanov, 2000).

DISTRIBUTION: Lower continental slope to mostly abyssal depths throughout the Atlantic Ocean.

DEPTH RANGE: 2180–5320 m (Scheltema, 1985; Scheltema, Ivanov, 2000; Ivanov, Scheltema, 2008).

***Chevroderma gauson* Scheltema, 1985**

Chevroderma gauson Scheltema, 1985: 516–519, fig. 3q–t, 5a, 11, 15g.

LOCALITIES: “Chain-106”, St. 328, 330; INCAL, St. WS 03, OS 02 (Scheltema, 1985; Scheltema, Ivanov, 2000).

DISTRIBUTION: West European Basin.

DEPTH RANGE: 4426–4829 m.

***Claviderma* Ivanov et Scheltema, 2000**

Rhabdoderma — Scheltema, 1989: 56 [non Reiss, 1888, in Pisces, a fossil coelocanth].

TYPE SPECIES: *Rhabdoderma australe* Scheltema, 1989 (OD).

COMPOSITION: 10 species.

DISTRIBUTION: 100–3800 m. Atlantic — 7, Indian Ocean — 2, southwest Pacific — 1 (Scheltema, Ivanov, 2000; Ivanov, Scheltema, 2002; Ivanov, Scheltema, 2008).

CENTRE OF DIVERSITY: unknown.

***Claviderma gladiatum* (Salvini-Plawen, 1992)**

Prochaetoderma gladiatum Salvini-Plawen, 1992: 324, fig. 10, 24.

LOCALITIES: Sarsia, St. 50.

DISTRIBUTION: Bay of Biscay and Cape Verde, Guinea, Angola, and Cape Basins (Salvini-Plawen, 1992; Scheltema, Ivanov, 2000).

DEPTH RANGE: 1267–3814 m.

Genus *Spathoderma* Scheltema, 1985

TYPE SPECIES: *Spathoderma clenchi* Scheltema, 1985 (OD)

COMPOSITION: 6 species.

DISTRIBUTION: 80–5300 m. Atlantic — 3, Indian — 2, Northeast Pacific — 1 (Scheltema, Ivanov, 2000; Ivanov, Scheltema, 2002).

CENTRE OF DIVERSITY: unknown.

***Spathoderma clenchi* Scheltema, 1985**

Spathoderma clenchi Scheltema, 1985: 509–511, figs. 3D–G, 4D, F, 9, 14c.

LOCALITIES: “Chain-106”, St. 321, 323; INCAL, St. DS 01, DS 02, DS 05, DS 06, DS 07, DS 08,

DS 09, DS 10, CP 01, CP 02, CP 03, CP 04, CP 05, CP 06, CP 07, OS 01, WS 02; BIOGAS IV, St. DS 51, DS 61, DS 62, DS 63, DS 64; BIOGAS V, St. DS 70; BIOGAS VIII, St. KG 142, KG 144, KG 145, KG 157; BIOGAS IX, St. KG 173, KG 174, KG 178, KG 179, KG 181, KG 183, KG 185, BIOGAS XI, St. KG 183, KG 185; “Mac 81”, Box no. 14 (Scheltema, 1985; Scheltema, Ivanov, 2000); BIOICE, St. 2856, 2859, 2860, 2863 (Ivanov, Scheltema, 2001).

DISTRIBUTION: North American Basin, Iceland, West European Basin to Cape Basin.

DEPTH RANGE: 1150–3350 m.

***Spathoderma grossum* Scheltema et Ivanov, 2000**

Spathoderma grossum Scheltema, Ivanov, 2000: 359, figs. 20C, 29E, F, 30, 31.

LOCALITIES: INCAL (CENTOB), St. DS 16, OS 08, WS 09; ABYPLAINE (CENTOB), St. CP 11, CP 19, DS 01, DS 02, DS 04, DS 07, DS 09, DS 11, DS 13 (Scheltema, Ivanov, 2000).

DISTRIBUTION: From West European Basin to Cape Basin (Scheltema, Ivanov, 2000); probably anti-Atlantic (unpublished data).

DEPTH RANGE: 4184–5320 m.

Family Chaetodermidae

Genus *Falcidens* Salvini-Plawen, 1968

TYPE SPECIES: *Falcidens crossotus* Salvini-Plawen, 1968 (OD).

COMPOSITION: 27 species.

DISTRIBUTION: Cosmopolitan, 3–5600 m, Atlantic — 13, Indian Ocean — 2, Pacific Ocean — 10, Arctic — 3.

CENTRE OF DIVERSITY: unknown.

***Falcidens aequabilis* Salvini-Plawen, 1972**

Falcidens aequabilis Salvini-Plawen, 1972: 32–33, 3–7.

LOCALITIES: POLYMEDE I, Sta. KR-04/13, KR-05/15, KR-10/31; POLYMEDE II, Sta. DS-01/2, DS-24/77 (Salvini-Plawen, 1972, 1977).

DISTRIBUTION: Mediterranean Sea (Salvini-Plawen, 1972, 1977, 1997).

DEPTH RANGE: 2430–3542 m.

***Falcidens thorensis* Salvini-Plawen, 1971**

Falcidens thorensis Salvini-Plawen, 1971: 30; Ivanov, Scheltema, 2001: 5, 2C.

LOCALITIES: Thor, St. 164 (Salvini-Plawen, 1971); BIOICE, St. 2855, 2856 (Ivanov, Scheltema, 2001).

DISTRIBUTION: North Atlantic, lower bathyal species.

DEPTH RANGE: 1096–2150 m.

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Responsible editors

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