

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

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ABSTRACT: An annotated check-list is given of Ascidiacea species occurring deeper than 2000 m in the seas bordering Europe. The check-list is based on published data. The check-list includes 54 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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Глубоководная фауна европейских морей: аннотированный список видов донных беспозвоночных, обитающих глубже 2000 м в морях, окружающих Европу. Ascidiacea

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РЕЗЮМЕ: Приводится аннотированный список видов Ascidiacea, обитающих глубже 2000 м в морях, окружающих Европу. Список основан на опубликованных данных. Список насчитывает 54 вида. Для каждого вида приведены синонимия, данные о нахождениях 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, Ascidiacea.

Phylum Tunicata
Class Ascidiacea
Order Aplousobranchia
Family Polyclinidae

Genus *Aplidium* Savigny, 1816

COMPOSITION: About 230 species. Type species: *Aplidium lobatum* Savigny, 1816.

DISTRIBUTION: cosmopolitan; Arctic — ~10, Atlantic — ~30, Indian Ocean — ~40, Pacific — ~130, Antarctic Ocean — ~25; 0–6000 m. Centres of diversity: tropical Pacific, Australia.

Aplidium enigmaticum
Monniot et Monniot, 1973

Aplidium enigmaticum Monniot, Monniot, 1973: 394; Monniot, Monniot, 1974b: 728; Millar, 1982: 165; Monniot, Monniot, 1984a: 133; Monniot, Monniot, 1985b: 16; Monniot, Monniot, 1992: 593.

LOCALITIES: “Jean Charcot”, St. 126, 130, 245 (Monniot, Monniot, 1973); NORATLANTE, St. E8 (Monniot, Monniot, 1974b); ABYPLAINE, St. 2, 8 (Monniot, Monniot, 1984a).

DISTRIBUTION: The species is known only from the North Atlantic.

DEPTH RANGE: 235–4490 m.

Order Phlebobranchia
Family Diazonidae

Genus *Pseudodiazona* Millar, 1963

COMPOSITION: 2 species. Type species: *Pseudodiazona sabulosa* Millar, 1963.

DISTRIBUTION: Atlantic and West Indian Oceans — 1, Australian waters — 1; 10–5228 m.

Pseudodiazona abyssa
Monniot et Monniot, 1974

Pseudodiazona abyssa Monniot, Monniot, 1974b: 733; Monniot, Monniot, 1976a: 665; Monniot, Monniot, 1985b: 18; Monniot, Monniot, 1985c: 36; Monniot, Monniot, 1987: 37; Monniot, 1997: 20.

LOCALITIES: POLYGAS, St. CV 13 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 5, 6, 8, 10, 11, 12 (Monniot, Monniot, 1984a); INCAL, St. 2-3 (Monniot, Monniot, 1985b).

DISTRIBUTION: Widely distributed in the Atlantic basins. One specimen recorded in the West Indian Ocean, Comores Islands (Monniot, Monniot, 1985c).

DEPTH RANGE: In the Atlantic: 826–5280 m, in the West Indian Ocean: 450 m.

Family Cionidae
Genus *Ciona* Linnaeus, 1767

COMPOSITION: 10 species. Type species: *Ascidia intestinalis* Linnaeus, 1767.

DISTRIBUTION: *C. intestinalis* is a widely distributed cosmopolitan species, the other 9 species are rare and have limited distributions. Arctic — 2, Atlantic — 3, Antarctic Ocean — 1, Indian Ocean — 1, Pacific — 8; 0–4364 m.

***Ciona imperfecta* Monniot et Monniot, 1977**

Ciona imperfecta Monniot, Monniot, 1977a: 698; Monniot, Monniot, 1985b: 19; Hoshino, Nishikawa, 1985: 76; Monniot, Monniot, 1992: 594.

LOCALITIES: BIOGAS V, St. DS 67 (St.3) (Monniot, Monniot, 1977a); INCAL, St. 2-3 (Monniot, Monniot, 1985b).

REMARKS: The assignment of this species to the genus *Ciona* is dubious.

DISTRIBUTION: Northeast Atlantic, several specimens from Bay of Biscay, 3992–4364 m, one specimen on Josephine Seamount (235–245 m).

DEPTH RANGE: 235–4364 m.

Family Ascidiidae

Genus *Araneum* Monniot et Monniot, 1973

COMPOSITION: 2 species. Type species: *Araneum sigma* Monniot, Monniot, 1973.

DISTRIBUTION: Atlantic — 1 (1386–5223 m), South West Pacific — 1 (570–610 m).

***Araneum sigma* Monniot et Monniot, 1973**

Araneum sigma Monniot, Monniot, 1973: 398; Monniot, Monniot, 1974b: 736; Monniot, Monniot, 1976: 632; Monniot, Monniot, 1976a: 665; Monniot, Monniot, 1985b: 19; Monniot, Monniot, 1987: 37.

LOCALITIES: “Jean Charcot”, St. 126, 245, 249 (Monniot, Monniot, 1973); NORATLANTE, St. B10 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4, 6 (Monniot, Monniot, 1977a); NORBI, St. DS 04, CP 03, CP 04, CP 06, DS 08, DS 09, DS 10, DS 11, DS 12, DS 13, DS 14, DS 15, CP 16, DS 17, CP 17, DS 18, KR 10, KR 20 (Monniot, Monniot, 1979); ABYPLAINE, St. 2, 10, 11, 12 (Monniot, Monniot 1984a); INCAL, St. 1-8, 2-2, 2-3, 2-4 (Monniot, Monniot, 1985b); “Chain”, St. 326, 328, 330 (Monniot, Monniot, 1985b).

REMARKS: I agree with Kott (1990: 21), who wrote: “*Araneum* Monniot, Monniot, 1973, assigned by its authors to the family Cionidae has no apparent cionid characters. It appears a highly adapted, abysal phlebobranch related to the Ascidiidae”.

DISTRIBUTION: Atlantic.

DEPTH RANGE: 1386–5280 m.

Family Octacnemidae

Genus *Situla* Vinogradova, 1969

COMPOSITION: 6 species. Type species: *Situla pelliculosa* Vinogradova, 1969.

DISTRIBUTION: cosmopolitan; Atlantic — 1, Indian Ocean — 2, Pacific — 3, Antarctic Ocean — 1; 1300–8200 m. Centre of diversity: Pacific.

***Situla lanosa* Monniot et Monniot, 1973**

Situla lanosa Monniot, Monniot, 1973: 402; Monniot, Monniot, 1974b: 738; Monniot, Monniot, 1985b: 20; Monniot, Monniot, 1985c: 39.

LOCALITIES: “Jean Charcot”, St. 126, 235, 249, 251, 252 (Monniot, Monniot, 1973); POLYGAS A, St. DS 15 (Monniot, Monniot, 1974b); BIOGAS, St. 1, 2 (Monniot, Monniot, 1977a); ABYPLAINE, St. 12 (Monniot, Monniot, 1984a); “Chain”, St. 334 (Monniot, Monniot, 1985b).

DISTRIBUTION: North Atlantic. One specimen has been recorded from west Indian Ocean (1800 m).

DEPTH RANGE: 1800–4990 m.

Genus *Dicopia* Sluiter, 1905

COMPOSITION: 3 species. Type species: *Dicopia fimbriata* Sluiter, 1905.

DISTRIBUTION: Atlantic — 1, Pacific — 2; 600–4500 m.

***Dicopia antirrhinum* Monniot, 1972**

Dicopia antirrhinum Monniot, 1972: 9; Monniot, Monniot, 1974b: 737; Monniot, Monniot, 1985b: 19.

LOCALITIES: POLYGAS, St. DS 15, DS 17, DS 18, DS 25, CV 09, CV 10 (Monniot, Monniot, 1974b); BIOGAS, St. 1, 2, 3, 6 (Monniot, Monniot, 1977a); INCAL, St. 1-5 (Monniot, Monniot, 1985b); ABYPLANE St. CP 68 (Monniot, Monniot, 1988).

DISTRIBUTION: North Atlantic.

DEPTH RANGE: 600–4300 m.

Genus *Octacnemus* Moseley, 1876

COMPOSITION: 6 species. Type species: *Octacnemus bythius* Moseley, 1876.

DISTRIBUTION: cosmopolitan; Atlantic — 2, Indian Ocean — 2, Pacific — 3, Antarctic Ocean — 1; 1160–8200 m.

***Octacnemus ingolfi* Madsen, 1947**

Octacnemus ingolfi Madsen, 1947: 31; Monniot, Monniot, 1973: 410; Monniot, Monniot, 1976: 633; Monniot, Monniot, 1985a: 289; Monniot, Monniot, 1985b: 22; Monniot, Monniot, 1985c: 39; Monniot, Monniot, 1991: 393.

LOCALITIES: “Jean Charcot”, St. 249 (Monniot, Monniot, 1973); BIOGAS, St. 1, 2, 3 (Monniot, Monniot, 1977a); ABYPLAINE, St. 12 (Monniot, Monniot, 1984a); INCAL, St. 2-1 (Monniot, Monniot, 1985b).

REMARKS: It is possible that several different *Octacnemus* species have been recorded under the name *O. ingolfi* (Sanamyan, Sanamyan, 2002).

DISTRIBUTION: Atlantic, Indian Ocean, south Pacific.

DEPTH RANGE: 1620–4990 m.

Octacnemus zarcoi**Monniot et Monniot, 1984**

Octacnemus zarcoi Monniot, Monniot, 1984a: 135.

LOCALITY: ABYPLAINE, St. 8 (Monniot, Monniot, 1984a).

DISTRIBUTION: The species is known only from six specimens recorded in the North Atlantic (north of Madeira).

DEPTH RANGE: 4260–4270 m.

Family Corellidae**Genus *Abyssascidia* Herdman, 1880**

COMPOSITION: 3 species. Type species: *Abyssascidia wyvillii* Herdman, 1880.

DISTRIBUTION: Atlantic — 1, Indian Ocean — 1, Pacific — 2; 207–5900 m.

***Abyssascidia millari* Monniot, 1971**

Abyssascidia millari Monniot, 1971: 460; Monniot, Monniot, 1973: 416; Monniot, Monniot, 1974b: 738; Monniot, Monniot, 1985a: 286; Monniot, Monniot, 1985b: 24; Monniot, Monniot, 1988: 417.

LOCALITIES: POLYGAS, St. CV 14, DS 21 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 11, 12 (Monniot, Monniot, 1984a); INCAL, St. 2-3, 2-4 (Monniot, Monniot, 1985b).

DISTRIBUTION: This abyssal species has been recorded in the Atlantic and Indian Oceans with two records in the Mediterranean Sea at unusually shallow depths — 207 and 523 m — near Gibraltar.

DEPTH RANGE: 207–5280 m.

Genus *Corynascidia* Herdman, 1882

COMPOSITION: 9 species. Type species: *Corynascidia suhmi* Herdman, 1882.

DISTRIBUTION: Atlantic — 2, Pacific — 4, Antarctic Ocean (Weddell Sea) — 4; 283–6145 m.

***Corynascidia translucida* (Monniot, 1969)**

Agnesiopsis translucida Monniot, 1969: 164; Monniot, 1970: 1136; Monniot, Monniot, 1974b: 747; Monniot, Monniot, 1985b: 24.

LOCALITIES: NORATLANTE, St. B 17; POLYGAS, St. DS 20, DS 21, DS 28, CV 14 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 9, 10, 11, 12 (Monniot, Monniot, 1984a); “Chain”, St. 326, 328; INCAL, St. 1-3, 2-2, 2-4 (Monniot, Monniot, 1985b).

DISTRIBUTION: North Atlantic.

DEPTH RANGE: 500–5280 m.

Family Agneziidae**Genus *Proagnesia* Monniot et Monniot, 1973**

COMPOSITION: 1 species. Type species: *Agnesia depressa* Millar, 1955.

DISTRIBUTION: Atlantic and Indian Oceans, Weddell Sea; 2483–5970 m.

***Proagnesia depressa* (Millar, 1955)**

Agnesia depressa Millar, 1955: 223; Kott, 1969: 453; Millar, 1970: 117.

Proagnesia depressa: Monniot, Monniot, 1973: 418; Monniot, Monniot, 1974b: 739; Monniot, Monniot, 1985a: 284; Monniot, Monniot, 1985b: 22; Monniot, Monniot, 1985c: 36; Monniot, 1997: 20; Sanamyan, Sanamyan, 2002: 330.

LOCALITIES: “Jean Charcot”, St. 250 (Monniot, Monniot, 1973); NORATLANTE, St. B 14, B 17; POLYGAS, St. DS 20, DS 22, CV 13 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 4, 5, 6, 8, 9, 11, 12 (Monniot, Monniot, 1984a); INCAL, St. 1-5, 1-8, 2-1, 2-2, 2-3, 2-4; “Chain”, St. 323, 326 (Monniot, Monniot, 1985b).

DISTRIBUTION: Northern and central Atlantic, around South Africa, central and northern parts of the Indian Ocean. Weddell Sea (Sanamyan, Sanamyan, 2002).

DEPTH RANGE: 2483–5970 m.

Genus *Agnesia* Monniot et Monniot, 1991

COMPOSITION: 13 species. Type species: *Agnesia glaciata* Michaelsen, 1898.

DISTRIBUTION: Atlantic — 2, Indian Ocean — 3, Pacific — 3, Antarctic Ocean — 6; 15–8116 m. Centre of diversity: Antarctic region.

***Agnesia atlantica*
(Monniot et Monniot, 1973)**

Agnesia atlantica Monniot, Monniot, 1973: 421; Monniot, Monniot, 1974b: 741; Millar, 1982: 165; Monniot, Monniot, 1985b: 23.

LOCALITIES: “Jean Charcot”, St. 250 (Monniot, Monniot, 1973); ABYPLAINE, St. 8 (Monniot, Monniot, 1984a); INCAL, St. 1-3, 1-8, 2-3; “Chain”, St. 326, 328 (Monniot, Monniot, 1985b); “Challenger”, (1973), St. 6, 10 (Millar, 1982).

DISTRIBUTION: North Atlantic.

DEPTH RANGE: 2068–5150 m.

***Agnesia celtica* (Monniot et Monniot, 1974)**

Agnesia celtica Monniot, Monniot, 1974b: 743; Monniot, Monniot, 1976: 633; Monniot, Monniot, 1985b: 23; Monniot, Monniot, 1985c: 36. *Agnesia celtica*: Monniot, 1994: 239.

LOCALITIES: NORATLANTE, St. B 17; POLYGAS, St. DS 20, DS 21, DS 22, DS 23, DS 28 (Monniot, Monniot, 1974b); BIOGAS, St. 1, 3, 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 12 (Monniot, Monniot, 1984a); INCAL, St. 2-2, 2-3, 2-4; “Chain”, St. 323, 326, 328, 330 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic and east Indian Oceans.

DEPTH RANGE: 707–5150 m.

Genus *Adagnesia* Kott, 1963

COMPOSITION: 12 species. Type species: *Adagnesia opaca* Kott, 1963.

DISTRIBUTION: Atlantic — 3, Indian Ocean — 2, Pacific — 7, Antarctic Ocean — 4; 0–5840 m. Centre of diversity: Pacific.

Adagnesia rimosa

Monniot et Monniot, 1974

Adagnesia rimosa Monniot, Monniot, 1974b: 744; Monniot, Monniot, 1985b: 24.

LOCALITIES: POLYGAS, St. DS 21, DS 22, CV 13 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 5, 8 (Monniot, Monniot, 1984a); INCAL, St. 2-2; “Chain”, St. 326, 328 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 4156–5150 m.

Adagnesia charcoti

Monniot et Monniot, 1973

Adagnesia charcoti Monniot, Monniot, 1973: 424; Monniot, Monniot, 1974b: 744; Monniot, Monniot, 1976: 634; Monniot, Monniot, 1976a: 666; Millar, 1978: 104; Millar, 1982: 168; Monniot, Monniot, 1985a: 284; Monniot, Monniot, 1985b: 23; Monniot, 1994: 235; Sanamyan, Sanamyan, 1999: 1844; Sanamyan, Sanamyan, 2002: 328.

LOCALITIES: “Jean Charcot”, St. 126, 250 (Monniot, Monniot, 1973); NORATLANTE, St. E 1; POLYGAS, St. DS 21, DS 23 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 8 (Monniot, Monniot, 1984a, INCAL, St. 1-3, 1-5, 1-8, 2-3; “Chain”, St. 323, 326, 328 (Monniot, Monniot, 1985b); “Challenger”, St. 50 (Millar, 1982).

DISTRIBUTION: Atlantic, Indian Ocean (Amsterdam Island), Pacific (Macquarie Island) and Antarctic Ocean (Weddell abyssal plain) (Sanamyan, Sanamyan, 2002).

DEPTH RANGE: 500–5450 m.

Genus *Tantillulum* Monniot et Monniot, 1984

COMPOSITION: 1 species. Type species: *Tantillulum molle* Monniot et Monniot, 1984.

DISTRIBUTION: North east Atlantic; 4260–4990 m.

Tantillulum molle

Monniot et Monniot, 1984

Tantillulum molle Monniot, Monniot, 1984a: 133.

LOCALITIES: ABYPLAINE, St. 8, 12 (Monniot, Monniot, 1984a).

REMARKS: The genus is known from 5 specimens from two stations: Monniot, Monniot (1984a)

mentioned only four specimens from St.8, but according to their Table 1 in the same paper there is another specimen from St. 12. It was very tentatively assigned to Cionidae. In my opinion it is related to the Agnesiidae.

DISTRIBUTION: Northeast Atlantic.

DEPTH RANGE: 4260–4990 m.

Order Stolidobranchia

Family Styelidae

Genus *Polycarpa* Heller, 1877

COMPOSITION: About 120 species. Type species: *Pandocia conchilega* Fleming, 1822

DISTRIBUTION: cosmopolitan; Arctic — 3 or 4, Atlantic — ~30, Indian Ocean — ~20, Pacific — ~90; 0–5500 m. Centres of diversity: shallow waters of tropical Pacific.

Polycarpa pseudoalbatrossi

Monniot et Monniot, 1968

Polycarpa pseudoalbatrossi Monniot, Monniot, 1968: 14; Monniot, Monniot, 1970: 320; Monniot, Monniot, 1973: 429 (part); Monniot, Monniot, 1974b: 750; Monniot, Monniot, 1976: 641; Monniot, Monniot, 1976b: 676; Monniot, Monniot, 1977a: 700; Millar, 1982: 169; Monniot, Monniot, 1985b: 26; Monniot, Monniot, 1987: 37; Monniot, 1997: 21.

LOCALITIES: “Jean Charcot”, St. 126, 250 (Monniot, Monniot, 1973); POLYGAS, St. DS 20, DS 21, DS 22, CV 13 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 5, 8, 12 (Monniot, Monniot, 1984a); “Chain”, St. 321, 323, 326, 328; INCAL, St. 1-3, 1-8, 2-1, 2-2, 2-3, 2-4 (Monniot, Monniot, 1985b); “Challenger”, St. 6, 27, 137, 147 (Millar, 1982).

DISTRIBUTION: Widely distributed in the Atlantic.

DEPTH RANGE: 750–5180 m.

Polycarpa biscayensis

Monniot et Monniot, 1977

Polycarpa biscayensis Monniot, Monniot, 1977a: 700. *Polycarpa pseudoalbatrossi* (not Monniot, Monniot, 1968): Monniot, Monniot, 1973: 429 (part). *Polycarpa* sp. Monniot, Monniot, 1974b: 750.

LOCALITIES: POLGAS, St. DS 15, DS 17 (Monniot, Monniot, 1974b); BIOGAS, St. 1, 2 (Monniot, Monniot, 1977a).

DISTRIBUTION: North Atlantic.

DEPTH RANGE: 1200–3548 m.

Polycarpa caudata

Monniot et Monniot, 1974

Polycarpa caudata Monniot, Monniot, 1974a: 1356. LOCALITIES: POLYMEDE I, St. DS 05, DS 10, DS 12 (Monniot, Monniot, 1974a).

DISTRIBUTION: Mediterranean Sea.

DEPTH RANGE: 866–2665 m.

Genus *Cnemidocarpa* Huntsman, 1912

COMPOSITION: About 70 species. Type species: *Styela joannae* Herdman, 1898.

DISTRIBUTION: cosmopolitan; Arctic — ~7, Atlantic — ~15, Indian Ocean — ~10, Pacific — ~50, Antarctic Ocean — ~12; 0–7000 m. Centre of diversity: Pacific.

Cnemidocarpa bathyphila Millar, 1955

Cnemidocarpa bathyphila Millar, 1955: 228 (part). *Styela sericata* (not Herdman, 1888): Millar, 1959: 196 (part). *Styela bathyphila*: Kott, 1971: 53; Monniot, Monniot, Millar, 1976: 1190; Monniot, Monniot, 1973: 430 (part). *Cnemidocarpa* sp.: Monniot, Monniot, 1977a: 702; Monniot, Monniot, 1985b: 28; Monniot, 1997: 21; Sanamyan, Sanamyan, 2002: 339.

LOCALITIES: “Jean Charcot”, St. 126, 174 (Monniot, Monniot, 1973); BIOGAS V, St. DS 67, (Monniot, Monniot, 1977a); ABYPLAINE, St. 5 (Monniot, Monniot, 1984a); INCAL, St. 2-2, 2-3 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic and Indian Oceans, also recorded from the Southwest Pacific.

DEPTH RANGE: 3050–5300 m.

Cnemidocarpa bythia (Herdman, 1881)

Styela bythia Herdman, 1881: 63; Herdman, 1882: 151. *Cnemidocarpa bythia*: Millar, 1959: 194; Monniot, Monniot, 1973: 432; Monniot, Monniot, 1974b: 752; Monniot, Monniot, 1977b: 313; Monniot, Monniot, 1982: 113; Monniot, 1998: 552, Sanamyan, Sanamyan, 2002: 340; Sanamyan, Sanamyan, 2005: 2008.

LOCALITIES: “Jean Charcot”, St. 126, 245, 249, 250 (Monniot, Monniot, 1973); NORATLANTE, St. B 10, B 17; POLYGAS, St. DS 28, (Monniot, Monniot, 1974b); BIOGAS, St. 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 4, 5, 8, 10, 11, 12 (Monniot, Monniot, 1984a).

REMARKS: The species was described originally from the waters south of Australia. Sanamyan, Sanamyan (2002) pointed out minor differences between Atlantic and Pacific specimens, but although records are numerous, most of them lack descriptions, and additional material is required to confirm possible differences between Atlantic and Pacific specimens.

DISTRIBUTION: Atlantic, Indian and Pacific Oceans and around the Antarctic.

DEPTH RANGE: 2273–7000 m.

Cnemidocarpa digonas

Monniot et Monniot, 1968

Cnemidocarpa digonas Monniot, Monniot, 1968: 27; Monniot, Monniot, 1970: 321; Monniot, Monniot, 1974b: 752; Monniot, Monniot, 1982: 113; Monniot, Monniot, 1985b: 27.

LOCALITIES: POLYGAS, St. CV 14, (Monniot, Monniot, 1974b); BIOGAS, St. 1, 2, 3 (Monniot, Monniot, 1977a); ABYPLAINE, St. 8, 9 (Monniot, Monniot, 1984a); INCAL, St. 2-3 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic Ocean and Atlantic sector of the Antarctic.

DEPTH RANGE: 2873–5300 m.

***Cnemidocarpa devia* Arnback, 1931**

Cnemidocarpa devia Arnback, 1931: 1; Lutzen, 1965: 418; Monniot, 1969: 178; Monniot, 1970: 1140; Monniot, Monniot, 1974b: 754; Monniot, Monniot, 1985b: 27; Monniot, Monniot, 1992: 597.

LOCALITIES: POLYGAS, St. CV 13 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2 (Monniot, Monniot, 1984a).

DISTRIBUTION: Originally described from the Swedish coast of the Skagerrak at only 80 m, the species has been recorded subsequently several times from the Northeast Atlantic at depths not exceeding 1000 m. In addition, there are two records from 4339 and 4490 m.

DEPTH RANGE: 80–4825 m.

***Cnemidocarpa platybranchia* Millar, 1955**

Cnemidocarpa platybranchia Millar, 1955: 226; Monniot, Monniot, Millar, 1976: 1192; Monniot, Monniot, 1984a: 141; Monniot, Monniot, 1985a: 294; Monniot, Monniot, 1985b: 28; Sanamyan, Sanamyan, 1999: 1850; Sanamyan, Sanamyan, 2002: 342. *Bathystyeloides enderbyanus* (not Michaelsen, 1904): Monniot, Monniot, 1970: 323.

LOCALITIES: ABYPLAINE, St. 2, 3, 4, 5, 6, 8, 9, 11 (Monniot, Monniot, 1984a).

DISTRIBUTION: Atlantic Ocean and Atlantic sector of the Antarctic Ocean, central Indian Ocean, Tasman Sea.

DEPTH RANGE: 3344–5860 m.

Genus *Styela* Fleming, 1822

COMPOSITION: About 70 species. Type species: *Cynthia canopus* Savigny, 1816.

DISTRIBUTION: Cosmopolitan; Arctic — ~6, Atlantic — 20, Indian Ocean — ~15, Pacific — ~60, Antarctic Ocean — ~12; 0 — ~5600 m. Centre of diversity: Pacific.

Styela calva

Monniot, Monniot et Millar, 1976

Styela calva Monniot, Monniot, Millar, 1976: 1196; Millar, 1982: 172; Monniot, Monniot, 1985a: 296; Monniot, Monniot, 1985b: 28; Monniot, Monniot, 1988: 423; Sanamyan, Sanamyan, 2005: 2013. *Styela sericata* (not Herdman, 1888). Millar, 1959: 196 (part). *Cnemidocarpa bathyphila* Monniot, Monniot (1973): 430 (part).

LOCALITIES: BIOGAS VI, St. CP 15, CP 17; “Jean Charcot”, St. 249 (Monniot et al., 1976); BIO-

GAS, St. 4 (Monniot, Monniot, 1977a); “Challenger”, St. 6, 49, 56, 143 (Millar, 1982); ABYPLAINE, St. 5, 8, 10, 11 (Monniot, Monniot, 1984a); INCAL, St. 2-1, 2-2, 2-4 (Monniot, Monniot, 1985b); “Cryos”, ABYPLAINE, St. CP 69 (Monniot, Monniot, 1988).

DISTRIBUTION: Atlantic, Indian Ocean, Tasman Sea (the holotype).

DEPTH RANGE: 1632–5280 m.

***Styela charcoti* Monniot et Monniot, 1973**

Styela charcoti Monniot, Monniot, 1973: 435; Monniot, Monniot, 1974b: 755; Monniot, Monniot, 1985a: 296; Monniot, Monniot, 1985b: 29; Monniot, Monniot, 1992: 597.

LOCALITIES: “Jean Charcot”, St. 245, 251 (Monniot, Monniot, 1973); NORATLANTE, St. B 17; POLYGAS, St. DS 20, DS 21, DS 23, CV 13 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 8, 10, 12 (Monniot, Monniot, 1984a); INCAL, St. 1-3, 1-5, 2-2, 2-3 (Monniot, Monniot, 1985b); “Chain”, St. 326 (Monniot, Monniot, 1985b); “Le Noroit”, St. 30; Campagne Seamount 1, St. CP30, (Monniot, Monniot, 1992).

DISTRIBUTION: Atlantic and Indian Oceans.

DEPTH RANGE: 1940–5330 m.

***Styela crinita* Monniot et Monniot, 1973**

Styela crinita Monniot, Monniot, 1973: 438; Monniot, Monniot, 1985a: 297; Monniot, Monniot, 1985b: 29; Monniot, Monniot, 1985c: 45; Monniot, 1994: 238; Sanamyan, Sanamyan, 1999: 1848.

LOCALITIES: “Jean Charcot”, St. 126, 249, 250 (Monniot, Monniot, 1973); BIOGAS, St. 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 5, 8, 9, 10, 11, 12 (Monniot, Monniot, 1984a); INCAL, St. 2-2, 2-3, 2-4 (Monniot, Monniot, 1985b); “Chain”, St. 328 (Monniot, Monniot, 1985b).

DISTRIBUTION: North and Central Atlantic, West, Central Indian Ocean, South Pacific.

DEPTH RANGE: 2000–5600 m.

***Styela chaini* Monniot et Monniot, 1970**

Styela gelatinosa (not Traustedt, 1886): Monniot, Monniot, 1968: 21. *Styela chaini* Monniot, Monniot, 1970: 321; Monniot, Monniot, 1973: 440; Monniot, Monniot, 1974b: 755; Monniot, Monniot, 1976: 645; Millar, 1982: 174; Monniot, Monniot, 1985b: 28.

LOCALITIES: “Jean Charcot”, St. 250 (Monniot, Monniot, 1973); POLYGAS, St. DS 21 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4, 5, 6 (Monniot, Monniot, 1977a); INCAL, St. 2-1, 2-2, 2-3 (Monniot, Monniot, 1985b); “Chain”, St. 323, 326, 328, 330 (Monniot, Monniot, 1985b); “Challenger”, St. 10, 184 (Millar, 1982); ABYPLAINE, St. 8 (Monniot, Monniot, 1984a).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 1102–4680 m.

***Styela similis* Monniot 1970**

Styela similis Monniot, 1970: 1142; Monniot, Monniot, 1973: 440; Monniot, Monniot, 1974b: 754; Monniot, Monniot, 1985b: 29.

LOCALITIES: “Jean Charcot”, St. 171, 202, 245, 249 (Monniot, Monniot, 1973); BIOGAS, St. 3, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 4, 5, 8, 10 (Monniot, Monniot 1984a); POLYGAS, St. CV 13 (Monniot, Monniot, 1985b); “Chain”, St. 328, (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 250–4690 m.

***Styela loculosa* Monniot et Monniot, 1968**

Styela loculosa Monniot, Monniot, 1968: 24; Monniot, Monniot, 1970: 323; Millar, 1970: 128; Monniot, Monniot, 1973: 442; Monniot, Monniot, 1974b: 754; Monniot, Monniot, 1985b: 29; Monniot, 1997: 21.

LOCALITIES: “Jean Charcot”, St. 250 (Monniot, Monniot, 1973); BIOGAS, St. 3 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 8 (Monniot, Monniot, 1984a); INCAL, St. 2-2, 2-3, 2-4 (Monniot, Monniot, 1985b); “Chain”, St. 334 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 1810–4829 m.

Genus *Dicarpa* Millar, 1955

COMPOSITION: 10 species. Type species: *Dicarpa simplex* Millar, 1955.

DISTRIBUTION: Cosmopolitan; Atlantic — 6, Indian Ocean — 2, Pacific — 3, Antarctic Ocean — 4; 75–5500 m. Centre of diversity: Atlantic.

***Dicarpa atlantica* Monniot, 1994**

Dicarpa atlantica Monniot, 1994: 238. ?*Cnemidocarpa peruviana* Millar, 1970: 124 (part, specimen from Labrador basin). *Dicarpa pacifica* (not Millar, 1964): Monniot, 1971: 462; Monniot, Monniot, 1974b: 749; Monniot, Monniot, 1976b: 671; Monniot, Monniot, 1985b: 25.

LOCALITIES: POLYGAS, St. CV 13. DS 28 (Monniot, Monniot, 1974b); BIOGAS, St. 1, 3, 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 10, 11 (Monniot, Monniot, 1984a); INCAL, St. 1-3, 2-3, (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 1491–5280 m.

***Dicarpa simplex* Millar, 1955**

Dicarpa simplex Millar, 1955: 225; Millar, 1959: 198; Monniot, Monniot, 1974b: 747; Monniot, Monniot, 1984a: 139; Monniot, Monniot, 1987: 37.

LOCALITIES: ABYPLAINE, St. 2, 3, 5, 8 (Monniot, Monniot, 1984a).

DISTRIBUTION: Atlantic and Pacific (Kermadec Trench, Mexico).

DEPTH RANGE: 550–5500 m.

Genus *Bathystyeloides* Seeliger, 1905

COMPOSITION: 7 species. Type species: *Bathystyeloides enderbyanus* Michaelsen, 1904.

DISTRIBUTION: cosmopolitan; Atlantic — 4, Indian Ocean — 2, Pacific — 4, Antarctic Ocean — 1; 400–7450m.

***Bathystyeloides enderbyanus* (Michaelsen, 1904)**

Bathystyeloides enderbyanus Michaelsen, 1904: 226; Kott, 1969: 125. *Bathystyeloides enderbyanus*: Hartmeyer, 1912: 256; Millar, 1959: 197; Millar, 1970: 131; Monniot, Monniot, 1970: 323 (part); Monniot, Monniot, 1973: 443; Monniot, Monniot, 1974b: 756; Monniot, Monniot, 1976a: 669; Monniot, Monniot, 1977b: 313; Monniot, Monniot, 1985a: 292; Monniot, Monniot, 1985b: 29; Monniot, Monniot, 1985c: 39; Monniot, Monniot, 1987: 38; Monniot, Monniot, 1988: 406; Monniot, Monniot, 1994: 28; Monniot, 1994: 235; Monniot 1997: 20. *Bathystyeloides atlantica* Millar, 1955: 229.

LOCALITIES: “Jean Charcot”, St. 126, 250 (Monniot, Monniot, 1973); NORATLANTE, St. E 8, E 14; POLYGAS, St. DS 20, DS 21, DS 22, CV 13, CV 14, DS 23, DS 28 (Monniot, Monniot, 1974b); BIOGAS, St. 1, 3, 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 4, 5, 6, 8, 9, 10 (Monniot, Monniot, 1984a); INCAL, St. 2-1, 2-2, 2-3, 2-4 (Monniot, Monniot, 1985b); “Chain”, St. 323, 328 (Monniot, Monniot, 1985b).

DISTRIBUTION: cosmopolitan.

DEPTH RANGE: 785–5880 m.

***Bathystyeloides laubieri* Monniot et Monniot, 1974**

Bathystyeloides laubieri Monniot, Monniot, 1974b: 759 (part); Monniot, Monniot, 1984a: 139; Monniot, Monniot, 1985b: 30; Monniot, 1997: 20.

LOCALITIES: BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 12 (Monniot, Monniot, 1984a); INCAL, St. 2-1, 2-3; “Chain”, St. 328 (Monniot, Monniot, 1985b).

REMARKS: Some records of this species in depths exceeding 2000 m in NE Atlantic (Monniot, Monniot, 1974b), are not listed because specimens belonging to *B. dubius* were recorded under the name *B. laubieri*, and these records cannot be separated.

DISTRIBUTION: NE Atlantic.

DEPTH RANGE: 2500–4490 m.

***Bathystyeloides dubius* Monniot et Monniot, 1984**

Bathystyeloides dubius Monniot, Monniot, 1984a: 139; Monniot, Monniot, 1985b: 30. *Bathystyeloides laubieri* Monniot, Monniot, 1974b: 759 (part).

LOCALITIES: ABYPLAINE, St. 8, 11 (Monniot, Monniot, 1984a); INCAL, St. 2-3 (Monniot, Monniot, 1985b).

DISTRIBUTION: NE Atlantic.
DEPTH RANGE: 4260–5280 m.

Genus *Bathyoncus* Herdman, 1882

COMPOSITION: 4 species. Type species: *Bathyoncus mirabilis* Herdman, 1882.

DISTRIBUTION: cosmopolitan; Atlantic — 1 or 2, Indian Ocean — 1, Pacific — 2 or 3, Antarctic Ocean — 1; 435–5631 m.

***Bathyoncus mirabilis* Herdman, 1882**

Bathyoncus mirabilis Herdman, 1882: 165; Kott, 1969: 126; Monniot, Monniot, 1982: 115; Monniot, Monniot, 1985a: 292; Monniot, Monniot, 1985b: 30; Sanamyan, Sanamyan, 1999: 1856; Sanamyan, Sanamyan, 2002: 342. *Bathyoncus herdmanni* (not Michaelsen, 1904). Monniot, Monniot, 1973: 443; Monniot, Monniot, 1974b: 761; Monniot, Monniot, 1977a: 704.

LOCALITIES: “Jean Charcot”, St. 251 (Monniot, Monniot, 1973); NORATLANTE, St. B 17; POLYGAS, St. DS 20 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3 (Monniot, Monniot, 1977a).

DISTRIBUTION: The species is widely distributed round the Antarctic continent and in the Atlantic Ocean.

DEPTH RANGE: 2025–5631 m.

Family Pyuridae

Genus *Cratostigma* Monniot et Monniot, 1961

COMPOSITION: 7 species. Type species: *Caesira singularis* Van Name, 1912.

DISTRIBUTION: North Atlantic — 4, Mediterranean Sea — 3; 0–5000 m.

***Cratostigma simplex* Millar, 1982**

Cratostigma simplex Millar, 1982: 174.

LOCALITIES: “Challenger”, St. 6, 10, 12, 27, 55, 140, 176, 184 (Millar, 1982).

DISTRIBUTION: Northeast Atlantic.

DEPTH RANGE: 1392–2900 m.

Genus *Bathypyura* Monniot, 1971

COMPOSITION: 2 species. Type species: *Bathypyura asymetrica* Monniot, 1971.

DISTRIBUTION: One species North and Central Atlantic and New Caledonia, the other one Northeast Atlantic; 587–3783 m.

***Bathypyura celata* Monniot et Monniot, 1973**

Bathypyura celata Monniot, Monniot, 1973: 445; Monniot, Monniot, 1974b: 761; Monniot, Monniot, 1985b: 30.

LOCALITIES: “Jean Charcot”, St. 126 (Monniot, Monniot, 1973); POLYGAS, St. DS 20, DS 21, DS 22, CV 14 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a), ABYPLAINE, St. 2, 5, 8, 9, 11 (Monniot, Monniot,

1984a); INCAL, St. 2-2, 2-3, 2-4; “Chain”, St. 326 (Monniot, Monniot, 1985b).

DISTRIBUTION: Northeast Atlantic.

DEPTH RANGE: 3360–5300 m.

Genus *Bolteniopsis* Harant, 1927

COMPOSITION: 4 species. Type species: *Bolteniopsis prenanti* Harant, 1927.

DISTRIBUTION: Atlantic — 2, Indian Ocean — 1, Pacific — 1; 0–4452 m.

Bolteniopsis sessilis

Monniot et Monniot, 1973

Bolteniopsis sessilis Monniot, Monniot, 1970: 329; Monniot, Monniot, 1973: 451; Monniot, Monniot, 1974b: 764; Monniot, Monniot, 1985b: 31; Monniot, 1997: 21.

LOCALITIES: “Jean Charcot”, St. 126 (Monniot, Monniot, 1973); NORATLANTE, St. E 1 (Monniot, Monniot, 1974b); BIOGAS, St. 6 (Monniot, Monniot, 1977a); INCAL, St. 1-5, 1-8; “Chain”, St. 321, 323 (Monniot, Monniot, 1985b).

DISTRIBUTION: North and Central Atlantic.

DEPTH RANGE: 1845–4452 m.

Genus *Hemistyla* Millar, 1955

COMPOSITION: 3 species. Type species: *Hemistyla pilosa* Millar, 1955.

DISTRIBUTION: Atlantic — 1, Antarctic Ocean (Weddell Sea) — 1, Indian Ocean — 1, Pacific — 1; 618–5300 m.

***Hemistyla pilosa* Millar, 1955**

Hemistyla pilosa Millar, 1955: 231. *Boltenia pilosa*: Monniot, Monniot, 1974b: 761; Monniot, Monniot, 1984a: 141; Monniot, Monniot, 1985b: 30; Monniot, Monniot, 1985c: 50; Monniot, Monniot, 1987: 40.

LOCALITIES: NORATLANTE, St. B 17 (Monniot, Monniot, 1974b); ABYPLAINE, St. 5, 8, 10, 12 (Monniot, Monniot, 1984a); INCAL, St. 2-2 (Monniot, Monniot, 1985b).

DISTRIBUTION: North and Central Atlantic. One dubious record from the Indian Ocean.

DEPTH RANGE: 618–5300 m.

Genus *Culeolus* Herdman, 1881

COMPOSITION: 20 species. Type species: *Culeolus murrayi* Herdman, 1881.

DISTRIBUTION: cosmopolitan; Atlantic — 4, Indian Ocean — 2, Pacific — 15, Antarctic Ocean — 4; 270–7295 m. Centre of diversity: Pacific.

***Culeolus suhmi* Herdman, 1881**

Culeolus suhmi Herdman, 1881: 86; Van Name, 1945: 364 (and synonymy); Millar, 1955: 232; Millar, 1959: 199 (part, not specimens from Kermadec Trench); Monniot, Monniot, 1973: 453; Monniot, Monniot, 1974b: 765; Monniot, Monniot, 1985a: 300; Monniot, Monniot, 1985b: 31; Sanamyan, Sanamyan, 2002: 350; Sanamyan, San-

amyan, 2005: 2015. Not *Culeolus suhmi*: Millar, 1970: 136.

LOCALITIES: A telegraph cable taken up at 47°26'N, 07°53'W, 3907 m (Van Name 1945); "Jean Charcot", St. 249 (Monniot, Monniot, 1973); NORATLANTE, St. B 18; POLYGAS, St. CV 14, CV 15, DS 22 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 8, 11, 12 (Monniot, Monniot, 1984a); INCAL, St. 2-2, 2-3, 2-4 (Monniot, Monniot, 1985b); "Chain", St. 326, 328 (Monniot, Monniot, 1985b).

DISTRIBUTION: North and Central Atlantic, Indian Ocean.

DEPTH RANGE: 2695–5312 m.

Family Molgulidae

Genus *Anomopera* Hartmeyer, 1923

COMPOSITION: 1 species.

DISTRIBUTION: Single record in North Atlantic; 2066 m.

Anomopera ingolfiana Hartmeyer, 1923

Anomopera ingolfiana Hartmeyer, 1923: 130; Van Name, 1945: 428.

LOCALITIES: Ingolf-Expedition, St. 18 (Hartmeyer, 1923).

REMARKS: The taxonomic position of this species is not clear. Van Name (1945: 428) pointed out that *Anomopera* "does not appear to differ very greatly from *Molgula*".

DISTRIBUTION: One specimen recorded between the Iceland and Greenland.

DEPTH RANGE: 2066 m.

Genus *Molgula* Forbes, 1848

COMPOSITION: 130 species. Type species: *Molgula oculata* Forbes, 1848.

DISTRIBUTION: cosmopolitan; Arctic Ocean — ~10, Atlantic — ~50, Indian Ocean — ~15, Pacific — ~60, Antarctic Ocean — ~20; 0–4893 m. Centre of diversity: Pacific.

Molgula tethys Monniot et Monniot, 1974

Molgula tethys Monniot, Monniot, 1974a: 1357; Monniot, Monniot, 1988: 423.

LOCALITIES: POLYMEDE I, St. DS 12 (Monniot, Monniot, 1974a).

DISTRIBUTION: Mediterranean Sea.

DEPTH RANGE: 252–2090 m.

Genus *Molguloides* Huntsman, 1922

COMPOSITION: 16 species. Type species: *Molgula vitrea* Sluiter, 1904.

DISTRIBUTION: Atlantic — 3, Indian Ocean — 6, Pacific — 8, Antarctic Ocean — 5; 390–6364 m. Centre of diversity: Pacific.

Molguloides crenatum

Monniot et Monniot, 1974

Molguloides crenatum Monniot, Monniot, 1974b: 774; Millar, 1982: 177; Monniot, Monniot, 1985a: 303; Monniot, Monniot, 1985b: 33. *Molguloides* sp.: Monniot, Monniot, 1973: 456.

LOCALITIES: "Jean Charcot", St. 126 (Monniot, Monniot, 1973); NORATLANTE, St. B 17 (Monniot, Monniot, 1974b); BIOGAS, St. 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 10 (Monniot, Monniot, 1984a); "Jean Charcot", INCAL, St. 1-8, 2-2, 2-4; "Chain", St. 326, 328, 330 (Monniot, Monniot, 1985b); "Challenger", St. 6, 129, 137, 143, 147 (Millar, 1982).

DISTRIBUTION: Atlantic and Indian Oceans.

DEPTH RANGE: 1271–4700 m.

Genus *Protomolgula* Monniot, 1971

COMPOSITION: 3 species. Type species: *Protomolgula bythia* Monniot, 1971.

DISTRIBUTION: Atlantic — 2, Pacific (New Caledonia region) — 1; 1632 — 5280 m.

Protomolgula bythia Monniot, 1971

Protomolgula bythia Monniot, 1971: 467; Monniot, Monniot, 1976: 651; Monniot, Monniot, 1976a: 669; Monniot, Monniot, 1984a: 141; Monniot, Monniot, 1985b: 33.

LOCALITIES: ABYPLAINE, St. 11 (Monniot, Monniot, 1984a).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 2487–5280 m.

Protomolgula triangularis Millar, 1982

Protomolgula triangularis Millar, 1982: 179.

LOCALITIES: "Challenger", St. 55, 58, 111 (Millar, 1982).

DISTRIBUTION: Northeast Atlantic.

DEPTH RANGE: 1632–2900 m.

Genus *Minipera* Monniot, 1974

COMPOSITION: 4 species. Type species: *Minipera pedunculata* Monniot, Monniot, 1974.

DISTRIBUTION: Atlantic — 3, Indian Ocean — 2, Pacific — 2; 750–5660 m.

Minipera papillosa

Monniot et Monniot, 1974

Minipera papillosa Monniot, Monniot, 1974b: 767; Monniot, Monniot, 1976a: 669; Monniot, Monniot, 1985b: 32; Monniot, Monniot, 1987: 40; Monniot, 1997: 22.

LOCALITIES: NORATLANTE, St. B 17; POLYGAS St. DS 20, DS 21, DS 22, DS 23, CV 14 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 4, 5, 6, 8, 10, 11, 12 (Monniot, Monniot, 1984a); INCAL, St. 2-2, 2-3, 2-4; "Chain", St. 326, 328 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic and Indian Oceans, Central Pacific.

DEPTH RANGE: 750–5320 (5660) m.

Minipera pedunculata

Monniot et Monniot, 1974

Minipera pedunculata Monniot, Monniot, 1974b: 765; Monniot, Monniot, 1976a: 669; Monniot, Monniot, 1976b: 676; Monniot, Monniot, 1985b: 32; Monniot, Monniot, 1985c: 50; Monniot, Monniot, 1987: 4; Monniot, 1997: 22.

LOCALITIES: POLYGAS, St. DS 21 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 11 (Monniot, Monniot, 1984a); INCAL, St. 2-3, 2-4 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic and Indian Oceans.

DEPTH RANGE: 2842–5280 m.

Genus *Eugyra* Alder et Hancock, 1870

COMPOSITION: 25 species. Type species: *Molgula arenosa* Alder and Hancock, 1870.

DISTRIBUTION: cosmopolitan; Arctic Ocean — 3, Atlantic — 4, Indian Ocean — 2, Pacific — 14, Antarctic Ocean — 3; 0–5880 m. Centre of diversity: Pacific.

Eugyra borealis

(Monniot et Monniot, 1977)

Eugyrioides borealis Monniot, Monniot, 1977a: 705; Monniot, Monniot, 1985b: 33; Monniot, 1997: 22. *Pareugyrioides* sp.: Monniot, Monniot, 1974b: 772. *Eugyra* or *Pareugyrioides* sp.: Monniot, Monniot, 1973: 455.

LOCALITIES: BIOGAS, St. 2 (Monniot, Monniot, 1977a); ABYPLAINE, St. 8 (Monniot, Monniot, 1984a); INCAL, St. 1-8, “Chain”, St. 330 (Monniot, Monniot, 1985b).

DISTRIBUTION: North Atlantic.

DEPTH RANGE: 2100–5880 m.

Genus *Pareugyrioides* Hartmeyer, 1914

COMPOSITION: 10 species. Type species: *Eugyrioides dalli* Ritter, 1913.

DISTRIBUTION: cosmopolitan; Atlantic — 3, Indian Ocean — 2, Pacific — 6, Antarctic Ocean — 2; 0–6070 m. Centre of diversity: Pacific.

Pareugyrioides chardyi

Monniot et Monniot, 1977

Pareugyrioides chardyi Monniot, Monniot, 1977a: 705; Monniot, Monniot, 1985b: 33. *Pareugyrioides galathea* (not Millar, 1959): Monniot, Monniot, 1974b: 770.

LOCALITIES: POLYGAS I, St. DS 21 (Monniot, Monniot, 1974b); BIOGAS, St. 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 8 (Monniot, Monniot, 1984a); INCAL, St. 2-2; “Chain”, St. 326 (Monniot, Monniot, 1985b).

DISTRIBUTION: North Atlantic.

DEPTH RANGE: 3992–4825 m.

Family Hexacroblyidae

Genus *Asajirus* Kott, 1989

COMPOSITION: Monniot, Monniot (1990) recognize 12 species but Kott (1992) believes that many of these species are synonyms and recognizes no more than 6 species. I follow her opinion. Type species: *Hexacroblylus indicus* Oka, 1913.

DISTRIBUTION: cosmopolitan; According to Monniot, Monniot (1990): Arctic — 1, Atlantic — 3, Indian Ocean — 2, Pacific — 4, Antarctic Ocean — 1; 600–7480 m.

***Asajirus indicus* (Oka, 1913)**

Hexacroblylus indicus Oka, 1913: 6. *Hexacroblylus arcticus* Hartmeyer, 1923: 133. *Hexacroblylus eunuchus* Monniot, Monniot, 1976: 658. *Hexadactylus indicus*: Monniot, Monniot, 1990: 271. *Hexadactylus antarcticus* Monniot, Monniot, 1990: 259. *Hexadactylus longitestis* Monniot, Monniot, 1990: 275. *Hexadactylus millari* Monniot, Monniot, 1990: 277. *Hexadactylus seeligeri* Monniot, Monniot, 1990: 281. *Asajirus indicus*: Kott, 1989: 521. Kott, 1992: 649 (and synonymy). Sanamyan, Sanamyan, 2006: 339.

LOCALITIES: NORBI, St. CP 1, DS 3, CP 17 (Monniot, Monniot, 1979).

DISTRIBUTION: Atlantic, Antarctic, Indian Ocean, Pacific.

DEPTH RANGE: 850–4750 m.

Asajirus ledanoisi

(Monniot et Monniot, 1990)

Hexadactylus ledanoisi Monniot, Monniot, 1990: 273. *Hexacroblylus indicus* (not Oka, 1913): Monniot, Monniot, 1973: 457; Monniot, Monniot, 1974b: 777; Monniot, Monniot, 1977a: 697. *Hexacroblylus arcticus* (not Hartmeyer, 1923): Monniot, Monniot, 1985b: 34.

LOCALITIES: “Jean Charcot”, St. 249 (Monniot, Monniot, 1973); BIOGAS, St. 2, 3, 4, 6 (Monniot, Monniot, 1977a); POLYGAS, St. CV 11, CV 13, CV 14, DS 21 (Monniot, Monniot, 1974b); INCAL, St. 2-1, 2-2, 2-3, 2-4; “Chain”, St. 326, 328, 330 (Monniot, Monniot, 1985b).

REMARK: Monniot, Monniot (1990: 273) included in the synonymy of this species *Hexacroblylus arcticus*: Monniot, Monniot, 1984b: 203 (part, specimens from BIACORES and BIOGAS cruises). However, a different species (*H. gulosus*) is described in that paper and at that page, and it came from another cruise.

DISTRIBUTION: Northeast Atlantic.

DEPTH RANGE: 720–4829 m.

Genus *Oligotrema* Bourne, 1903

COMPOSITION: 6 or 5 species. Type species: *Oligotrema psammites* Bourne, 1903.

DISTRIBUTION: Atlantic — 4, Indian Ocean — 3, Pacific — 2; 1000–5000 m.

***Oligotrema lyra* (Monniot et Monniot, 1973)**

Gasterascidia lyra Monniot, Monniot, 1973: 457; Monniot, Monniot, 1974b: 777; Monniot, Monniot, 1984b: 209; Monniot, Monniot, 1985b: 35; Monniot, Monniot, 1990: 251. *Oligotrema lyra*: Kott, 1989: 526; Sanamyan, Sanamyan, 1999: 1873.

LOCALITIES: "Jean Charcot", St. 126, 245, 249, 250 (Monniot, Monniot, 1973); NORATLANTE, St. B 17; POLYGAS, DS 21, DS 22, CV 13, CV 14 (Monniot, Monniot, 1974b); BIOGAS, St. 1, 2, 3, 4, 5 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 3, 5, 8, 10, 11, 12 (Monniot, Monniot, 1984a); INCAL, St. 2-3; "Chain", St. 323, 326, 328, 330 (Monniot, Monniot, 1985b).

DISTRIBUTION: Atlantic, Indian Ocean and Pacific.

DEPTH RANGE: 1985–5500 m.

***Oligotrema sandersi*
(Monniot et Monniot, 1968)**

Gasterascidia sandersi Monniot, Monniot, 1968: 36; Monniot, Monniot, 1970: 334; Monniot, Monniot, 1974b: 777; Monniot, Monniot, 1985b: 35; Monniot, Monniot, 1990: 247. ?*Gasterascidia sandersi*: Millar, 1970: 148. *Oligotrema sandersi*: Kott, 1989: 531.

LOCALITIES: NORATLANTE, St. E 8 (Monniot, Monniot, 1974b).

DISTRIBUTION: Widely distributed in the Atlantic.

DEPTH RANGE: 2200–5020 m.

***Oligotrema unigonas*
(Monniot et Monniot, 1974)**

Sorbera unigonas Monniot, Monniot, 1974b: 777; Monniot, Monniot, 1984b: 209; Monniot, Monniot, 1985a: 307; Monniot, Monniot, 1985b: 35; Monniot, Monniot, 1990: 244. *Oligotrema unigonas*: Kott, 1989: 532.

LOCALITIES: POLYGAS, DS 20, DS 23 (Monniot, Monniot, 1974b); BIOGAS, St. 2, 3, 4 (Monniot, Monniot, 1977a); ABYPLAINE, St. 2, 3, 5, 8, 10, 11 (Monniot, Monniot, 1984a); "Chain", St. 323, 326, 328 (Monniot, Monniot, 1985b).

DISTRIBUTION: Widely distributed in Atlantic and recorded also in Indian Ocean (Comoro Islands).

DEPTH RANGE: 2300–5500 m.

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