

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

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**ABSTRACT:** An annotated check-list is given of Scleractinia species occurring deeper than 2000 m in the seas bordering Europe. The check-list is based on published data. The check-list includes 23 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, Scleractinia.

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

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**РЕЗЮМЕ:** Приводится аннотированный список видов Scleractinia, обитающих глубже 2000 м в морях, окружающих Европу. Список основан на опубликованных данных. Список насчитывает 23 вида. 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, Scleractinia.

Only recent species are considered in the present work.

### Genus *Fungiacyathus* Sars, 1872

Type species — *Fungiacyathus fragilis* Sars, 1872.

COMPOSITION: 19 species (Cairns, 1991, 1995)

DISTRIBUTION: Cosmopolitan.

DEPTH RANGE: 69–6328 m.

#### Subgenus *Fungiacyathus* (*Fungiacyathus*) Sars, 1872

COMPOSITION: 5 species (Cairns 1995).

DISTRIBUTION: Cosmopolitan. Atlantic and Arctic — 1 species, Indo-Pacific — 2, Pacific — 2.

DEPTH RANGE: 69–2440 m.

CENTRE OF DIVERSITY: Pacific.

#### *Fungiacyathus* (*Fungiacyathus*) *fragilis* G.O. Sars, 1872

*Fungiacyathus fragilis* — Sars, 1872: 58, pl. 5: 24–32; Zibrowius, 1980: 23–24, pl. 5: A–J synonymy; Cairns, 1982: 7, pl. 1: 3–7, synonymy; *Fungiacyathus* (*Fungiacyathus*) *fragilis* — Cairns, 1995: 32, pl. 1: d, f, synonymy.

LOCALITIES: “Travailleur et Talisman”, 1880–1883, St. 44; “Akademik Mstislav Keldysh”, 1982, St. 316-3, 317-2, 499 (Keller, 1989).

DISTRIBUTION: Arctic, Atlantic Ocean, Norwegian and Greenland Seas, Azores and Cape Verde Islands; Pacific, Hawaii, New Zealand, Macquarie Ridge.

DEPTH RANGE: 285–2440 m.

#### Subgenus *Fungiacyathus* (*Bathyactis*) Moseley, 1881

COMPOSITION: 14 species (Cairns, 1991).

DISTRIBUTION: Atlantic — 7 species, Pacific — 5, Indian — 1, Cosmopolitan — 1.

DEPTH RANGE: 183–6328 m.

CENTRE OF DIVERSITY: North Atlantic.

#### *Fungiacyathus* (*Bathyactis*) *marenzelleri* (Vaughan, 1906)

*Bathyactis symmetrica* — Moseley, 1881: 189, in part; Marenzeller, 1904: 76, in part; *Bathyactis marenzelleri* — Vaughan, 1906: 66, pl. 4: 1, 1a–b; *Fungiacyathus marenzelleri* — Cairns, 1979: 35, pl. 2: 6, 8–9, pl. 3: 3, 8, synonymy; Zibrowius, 1980: 24–25, pl. 6: A–M, pl. 7: A–K, synonymy; Cairns, 1982: 5–7, pl. 1: 1, 2, 8 synonymy; *Fungiacyathus* (*Bathyactis*) *marenzelleri* — Cairns, 1994: 15–16, pl. 1: a–f.

LOCALITIES: “Princesse Alice II”, St. 2964, 2990 (Gravier, 1920); “Challenger”, 1973: St. 12; “Jean Charcot”, 1971: St. 120, 129, 227, 235, 245, 249; BIOGAS VI: CP 16, CP 20, CP 21; “Sarsia”, 1976, St. 7603; “Travailleur et Talisman”, 1880–1883, St. 44; “Talisman”, 1883, St. Dr 39, 134 (Zibrowius, 1980); “Akademik Mstislav Keldysh”, 1982, St. 268 (Keller, 1989).

DISTRIBUTION: Cosmopolitan.

DEPTH RANGE: 183–6328 m.

### Suborder Faviina Family Oculinidae

#### Genus *Madrepora* Linnaeus, 1758

Type species: *Madrepora oculata* Linnaeus, 1758.

COMPOSITION: 5 species (Cairns, 1995; Cairns, Zibrowius, 1997).

DISTRIBUTION: Atlantic — 2 species; Pacific — 2, cosmopolitan — 1.

DEPTH RANGE: 15–2700 m.

#### *Madrepora oculata* Linnaeus, 1758

*Madrepora oculata* — Linnaeus, 1758: 798; Zibrowius, 1974: 762–766, pl. 2: 3–5, synonymy; Cairns, 1979: 39–42, pl. 3: 2, pl. 4: 5, pl. 5: 1–3, synonymy; Zibrowius, 1980: 36–40, pl. 13: A–P, synonymy; Cairns, 1982: 15, pl. 3: 4–6, synonymy; Cairns, 1991: 9–10, pl. 2: j, pl. 3: a–d, synonymy; Cairns, 1994: 18–19, pl. 3: f–h, synonymy; Cairns, 1995: 41, pl. 5: e–f, pl. 6: a–b; Cairns, Keller, 1993: 233; Cairns, Zibrowius, 1997: 79, synonymy.

LOCALITIES: “Thalassa”, 1973, St. Z 453; “Jean Charcot”, 1971, St. 252 (Zibrowius, 1980).

DISTRIBUTION: Cosmopolitan, except Antarctic.

DEPTH RANGE: 15–2700 m.

### Suborder Caryophylliina Family Caryophylliidae

#### Genus *Caryophyllia* Lamarck, 1801

Type species: *Madrepora cyathus* Ellis et Solander, 1786.

COMPOSITION: 56 species (Cairns, 1991).

DISTRIBUTION: Cosmopolitan.

DEPTH RANGE: 0–3200 m.

#### Subgenus *Caryophyllia* (*Caryophyllia*) Lamarck, 1801

COMPOSITION: 56 species (Cairns, 1991).

DISTRIBUTION: Atlantic — 20, Indo-West Pacific — 18, Pacific — 9, Antarctic — 2, widespread — 7.

DEPTH RANGE: 0–3200 m.

CENTRE OF DIVERSITY: Pacific.

#### *Caryophyllia atlantica* (Duncan, 1873)

*Bathycyathus atlanticus* — Duncan, 1873: 318, pl. 48: 1–2; *Caryophyllia atlantica* — Zibrowius, 1980: 56, pl. 20: A–K, synonymy.

LOCALITIES: “Princesse Alice II”, St. 1116 (Gravier, 1920); “Porcupine”, 1870, St. 17 (Zibrowius, 1980).

DISTRIBUTION: Widely distributed in the North-East Atlantic.

DEPTH RANGE: 1100–2165 m.

#### *Caryophyllia abyssorum* Duncan, 1873

*Caryophyllia abyssorum* — Duncan, 1873: 315, pl. 40: 1–4; Zibrowius, 1974: 773, pl. 1: A–E; Zibrowius, 1980: 61, pl. 23: A–L, synonymy.

LOCALITIES: "Porcupine", 1870, St. 17 (Zibrowius, 1980); "Vityaz", 1982, St. 80B (Keller, 1989).

DISTRIBUTION: Northeast Atlantic, Celtic Sea to the Azores and African coast.

DEPTH RANGE: 732–2040 m, most common at 1000–1500 m.

#### ***Caryophyllia sarsiae* Zibrowius, 1974**

*Caryophyllia sarsiae* — Zibrowius, 1974: 779, pl. 3: A–F; Zibrowius, 1980: 62, pl. 24: A–J, synonymy.

LOCALITIES: "Bartlett", 1975, St. n/a (Zibrowius, 1980).

DISTRIBUTION: Northeast Atlantic, Celtic Sea to Azores and Madeira.

DEPTH RANGE: 520–2200 m, most common at 800–1300 m.

#### ***Caryophyllia ambrosia* Alcock, 1898**

*Caryophyllia ambrosia* — Alcock, 1898: 12, pl. 1: 1, 1a; Zibrowius, 1980: 63–65, pl. 25: A–K, synonymy; *Caryophyllia ambrosia ambrosia* — Cairns, 1979: 59; Cairns, Keller, 1993: 234, pl. 13: H; Cairns, 1994: 48, pl. 21: d–h, synonymy; Cairns, 1995: 53–54, pl. 11: d–e, synonymy; Cairns, Zibrowius, 1997: 95, synonymy.

LOCALITIES: "Travailleur et Talisman", St. 34, 129; "Princesse Alice", St. 536, 624, 778; "Princesse Alice II" 1116, 1318, 2990 (Gravier, 1920); "Challenger", 1973, St. ES 12; "Michael Sars", 1910, St. 25; "Archimede Bathyscaphe", St. AC 15; "Jean Charcot", 1969, St. 124; 1971, 120, 131; BIOGAS I, "La Perle", 1972, St. 12 CV 4, St. 16 CV 5, St. 21 CV 7; BIOGAS III, 1973, DS 38; BIOGAS IV, 1974, DS 52; (Zibrowius, 1980); "Akademik Mstislav Keldysh", 1982, St. 316-3, 317-2 (Keller, 1989).

DISTRIBUTION: Atlantic, Indian Ocean, temperate North Pacific, Philippine Sea, South China Sea, Sulu Sea, Java Sea, Great Australian Bight, Tasmanian Sea.

DEPTH RANGE: 311–3018 m.

#### ***Caryophyllia cornuformis* Pourtales, 1868**

*Caryophyllia cornuformis* — Pourtales, 1868: 133; Pourtales, 1871: 9, pl. 1: 14–15; Pourtales, 1880: 99; Cairns, 1979: 49, pl. 7: 2–5, synonymy; Zibrowius, 1980: 66, pl. 26: A–L, synonymy; *Caryophyllia* sp. cf. *C. cornuformis* — Cairns, Keller, 1993: 235, figs. 3: C, F.

LOCALITIES: "Jean Charcot", 1969, St. 124; 1972, St. 33 CP 11; BIOGAS I, "La Perle", 1972, St. 10 CV 3, CV 8, DS 06, DS 07, DS 09, DS 11; BIOGAS III, 1973, DS 37, DS 38; 1974, DS 61, DS 63; "Meteor", 1971, St. n/a (32°56'N, 16°52'W) (Zibrowius, 1980); "Akademik Mstislav Keldysh", 1982, St. 316-3, 317-2 (Keller, 1989).

DISTRIBUTION: Atlantic, Celtic Sea to Azores and Morocco, 63°N to Brazil; Indian Ocean, Gulf of Aden to southwest Mozambique.

DEPTH RANGE: 37–2200 m.

#### **Genus *Deltocyathus* Milne-Edwards et Haime, 1848**

Type species: *Turbinolia italica* Michelotti, 1838.

COMPOSITION: 17 species (Cairns, 1995).

DISTRIBUTION: World-wide, except Antarctic and Arctic regions; Pacific — 9 species; Indo-Pacific — 2, Atlantic — 6.

DEPTH RANGE: 142–5080 m.

CENTRE OF DIVERSITY: Pacific.

#### ***Deltocyathus conicus* Zibrowius, 1980**

*Deltocyathus conicus* — Zibrowius, 1980: 83, pl. 39 A–L, synonymy.

LOCALITIES: "Princesse Alice", St. 624; "Princesse Alice II", St. 1116 (Gravier, 1920); "Jean Charcot", 1971, St. 206; "Talisman", 1883, St. n/a; "Meteor", St. n/a; "Valdivia", 1898, St. n/a; "Galathea", 1950, St. n/a (Zibrowius, 1980); "Vityaz" II, 1982: St. 170 (Keller, 1989).

DISTRIBUTION: East and west Atlantic.

DEPTH RANGE: East Atlantic 1500–2300 m (single record at 1100 m); West Atlantic 200–300 m.

#### ***Deltocyathus moseleyi* Cairns, 1979**

*Deltocyathus moseleyi* — Cairns, 1979: 100, pl. 18: 1–3, synonymy; Zibrowius, 1980: 87, pl. 42 A–K; 43 A–L, synonymy.

LOCALITIES: "Princesse Alice II", St. 1116 (Gravier, 1920).

DISTRIBUTION: Atlantic, Celtic Sea to around Azores and Madeira; Caribbean Sea; Gulf of Mexico.

DEPTH RANGE: 200–2165 m.

#### **Genus *Stephanocyathus* Seguenza, 1864**

Type species: *Stephanocyathus elegans* Seguenza, 1864.

COMPOSITION: 15 species (Cairns, 1995).

DISTRIBUTION: World-wide.

DEPTH RANGE: 106–2235 m.

#### **Subgenus *Stephanocyathus***

##### **(*Stephanocyathus*) Seguenza, 1864**

COMPOSITION: 7 species (Cairns, 1995).

DISTRIBUTION: World-wide: Atlantic — 5 species; Indo-Pacific — 2.

DEPTH RANGE: 520–2210 m.

#### ***Stephanocyathus moseleyanus* (Sclater, 1886)**

*Stephanocyathus moseleyanus* — Sclater, 1886: 128, pl. 13: 2–4; *Stephanocyathus moseleyanus* — Zibrowius, 1980: 98, pl. 49: A–K, synonymy.

LOCALITIES: "Princesse Alice", St. 515 (Gravier, 1920); "Talisman", 1883: St. n/a (Zibrowius, 1980).

DISTRIBUTION: Northeast Atlantic.

DEPTH RANGE: 600–2210 m, usually 1000–2000 m.

**Subgenus *Stephanocyathus* (*Odontocyathus*)****Moseley, 1881**

COMPOSITION: 5 species (Cairns, 1995).

DISTRIBUTION: Tropical to temperate Atlantic and Indo-West Pacific, Atlantic — 1, Atlantic and Indian Ocean — 1, Indian Ocean — 1, West Pacific — 2.

DEPTH RANGE: 206–1610 m, most common at 800–1500 m.

***Stephanocyathus* (*Odontocyathus*) *nobilis* (Moseley, 1873)***Ceratotrochus nobilis* — Moseley in Thomson, 1873: 402: 3; Moseley, 1876: 554. *Stephanotrochus nobilis* — Moseley, 1881: 155, pl. 3: 3 a–b, text-fig. *Stephanocyathus nobilis* — Zibrowius, 1980: 101–103, pl. 51: A–K, synonymy. *Stephanocyathus* (*Odontocyathus*) *nobilis* — Cairns, 1979: 110–111, pl. 20: 7, 10, Cairns, Keller, 1993: 242, figs. 5D–E, synonymy.

LOCALITIES: “Princesse Alice”, St. 515, 778; “Princesse Alice II”, St. 1116 (Gravier, 1920); “Thalassa”, 1973, St. Z 453; “Michael Sars”, 1910, St. 25; “Talisman”, 1883, St. 41, St. n/a; “Meteor”, 1971, St. n/a (Zibrowius, 1980).

DISTRIBUTION: Atlantic and Indian Oceans.

DEPTH RANGE: 1300–2235 m (one record at 750 m).

**Genus *Vaughanella* Gravier, 1915**Type species: *Caryophyllia margaritata* Jourdan, 1895.

COMPOSITION: 4 species (Cairns, 1995).

DISTRIBUTION: World-wide; Atlantic — 2 species, Pacific — 2.

DEPTH RANGE: 540–3018 m, most common at 1000–2000 m.

***Vaughanella concinna* Gravier, 1915***Vaughanella concinna* — Gravier, 1915: 10, Gravier, 1920: 63, pl. 9: 138–143, Zibrowius, 1980: 104, pl. 25: A–K, pl. 53: A–L, synonymy.

LOCALITIES: “Princesse Alice II”, St. 1318 (Gravier, 1920); “Jean Charcot”, 1971: St. 95? (Zibrowius, 1980); “Vityaz”, 1982: St. 170 (Keller, 1989).

DISTRIBUTION: East Atlantic, Celtic Sea to Azores and Madeira.

DEPTH RANGE: 540–3018 m; usually 1000–2000 m.

**Genus *Desmophyllum* Ehrenberg, 1834**Type species: *Madrepora dianthus* Esper, 1794.

COMPOSITION: 2 species (Cairns, 1995).

DISTRIBUTION: Cosmopolitan, except Antarctic and northern boreal region. Pacific — 1 species, Atlantic — 1.

DEPTH RANGE: 35–2460 m.

***Desmophyllum dianthus* (Esper, 1794)***Madrepora dianthus* — Esper, 1794: pl. 69: 1–3; *Desmophyllum cristagalli* — Milne-Edwards, Haime,1848: 253, pl. 7: 10, 10a; Cairns, 1979: 117–119, pl. 21: 7–8, pl. 22: 8, synonymy; Zibrowius, 1980: 11–121, pl. 61: A–O, pl. 62: A–M, synonymy; Cairns, 1982: 29–30, pl. 8: 9–12, pl. 9: 1–3, synonymy; *Desmophyllum dianthus* — Cairns, 1994: 26–27, pl. 9: a–b, synonymy.

LOCALITIES: “Princesse Alice II”, St. 1116, 1420 (Gravier, 1920); “Jean Charcot”, 1966: St. n/a; “Shackleton”, 1972 (36°34′N, 11°46′W, depth 2000 m); Talisman, 1883: St. n/a (Zibrowius, 1980).

DISTRIBUTION: Cosmopolitan except Antarctic and northern boreal Pacific.

DEPTH RANGE: 35–2460 m.

**Genus *Lophelia* Milne-Edwards et Haime, 1849**Type species: *Madrepora prolifera* Pallas, 1766.

COMPOSITION: 1 species (Zibrowius, 1980).

DISTRIBUTION: world-wide.

DEPTH RANGE: 60–2170 m.

***Lophelia prolifera* (Pallas, 1766)***Lophelia prolifera* — Cairns, 1979: 125–127, pl. 24: 1–5, synonymy and discussion; Cairns, 1982: 30–31, pl. 9: 6; *Lophelia pertusa* — Zibrowius, 1980: 126, pl. 66: A–L, synonymy and discussion.

LOCALITIES: “Princesse Alice II”, St. 1116 (Gravier, 1920).

DISTRIBUTION: Cosmopolitan, except Antarctic.

DEPTH RANGE: 60–2170 m.

**Genus *Solenosmilia* Duncan, 1873**Type species: *Solenosmilia variabilis* Duncan, 1873.

COMPOSITION: 1 species (Zibrowius, 1980).

DISTRIBUTION: Widespread, except southern oceans.

DEPTH RANGE: 220–2165 m.

***Solenosmilia variabilis* Duncan, 1873***Solenosmilia variabilis* — Duncan, 1873: 328, pl. 42: 11–18; Zibrowius, 1974: 768; Cairns, 1979: 136–138, pl. 26: 2–4, synonymy; Zibrowius, 1980: 143–145, pl. 75: A–N, synonymy; Scheer, Pillai, 1983: 160; Cairns, Parker, 1992: 29–30, pl. 8: d–e; Cairns, Keller, 1993: 250, fig. 6D, synonymy.

LOCALITIES: “Princesse Alice II”, St. 1116 (Gravier, 1920); “Porcupine”, 1870, St. 17; “Jean Charcot”, 1973, St. n/a; “Thalassa”, 1971: St. n/a (Zibrowius, 1980).

DISTRIBUTION: Widespread in the Atlantic and Indian Oceans, absent in the Antarctic.

DEPTH RANGE: 280–2165 m.

**Family Flabellidae****Genus *Flabellum* Lesson, 1831**Type species: *Flabellum pavoninum* Lesson, 1831.

COMPOSITION: 45 species (Cairns, 1995).

DISTRIBUTION: Cosmopolitan.

DEPTH RANGE: 22–2875 m.

**Subgenus *Flabellum* (*Flabellum*)****Lesson, 1831**

COMPOSITION: 28 species (Cairns, 1995).

DISTRIBUTION: Cosmopolitan; Indo-West Pacific — 14 species; Antarctic — 3; Atlantic — 11.

DEPTH RANGE: 22–2875 m.

***Flabellum alabastrum* Moseley, 1873***Flabellum alabastrum* — Moseley in Thomson, 1873: 403, fig. 2; Moseley, 1881: 169, pl. 7: 1, 1 a–b, 2, 2a–b, pl. 16: 11; Zibrowius, 1980: 148, pl. 77: A–J, synonymy.

LOCALITIES: “Jean Charcot”, 1969 St. n/a; 1973, St. n/a; “Thalassa”, 1973, St. Z 453; “Michael Sars”, 1910, St. 25; “Meteor”, 1971, St. n/a; “Talisman”, 1883, St. n/a (Zibrowius, 1980).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 1200–2250 m.

***Flabellum angulare* Moseley, 1876***Flabellum angulare* — Moseley, 1876: 547, 556; Moseley, 1881: 164, pl. 6: 2, 2a–b; Zibrowius, 1980: 152, pl. 79: A–L, pl. 107: F–G, synonymy.

LOCALITIES: “Princesse Alice II”, St. 2990, 3006 (Gravier, 1920); “Talisman”, 1883: St. Dr 41; “Jean Charcot”, 1966, St. n/a; 1969, St. 84/B 12; 1971, St. 95, 206, 227, 235, 252; 1972, St. 33/CV 11; BIOGAS I, 1972, CV 03; BIOGAS IV, 1974, DS 51; BIOGAS VI, CP 09; “Challenger”, 1973, St. ES 10, ES 12 (Zibrowius, 1980); “Akademik Mstislav Keldysh”, 1982: St. 316–3, 499 (Keller, 1989).

DISTRIBUTION: Atlantic.

DEPTH RANGE: 1647–2875 m.

**Genus *Javania* Duncan, 1876**Type species: *Javania insignis* Duncan, 1876.

COMPOSITION: 9 species (Cairns, 1995).

DISTRIBUTION: Cosmopolitan. Atlantic — 1 species; Pacific — 5; Indo-Pacific — 1; Antarctic — 1; World-wide — 1.

DEPTH RANGE: 52–3165 m.

CENTRE OF DIVERSITY: Pacific.

***Javania cailleti* (Duchassaing et Michelotti, 1864)***Desmophyllum cailleti* — Duchassaing, Michelotti, 1864: 66, pl. 8: 11; *Javania eburnea* — Zibrowius, 1974: 12, 13, pl. 3: 13–17, synonymy; *Javania cailleti* — Cairns, 1979: 153–156, pl. 28: 8–12, pl. 30: 1, 4, synonymy; Zibrowius, 1980: 157–159, pl. 82: A–L, synonymy; Cairns, 1982: 46–48, pl. 14: 9–12; Cairns, 1991: 21, pl. 8: c–e; Cairns, 1994: 29, pl. 10: g–i.

LOCALITIES: “Princesse Alice II”, St. 1116 (Gravier, 1920); “Thalassa”, St. W 425, Z 453 (Zibrowius, 1980).

DISTRIBUTION: Widespread.

DEPTH RANGE: 86–2165 m.

***Javania* cf. *eburnea* (Moseley, 1881)***Javania* cf. *eburnea* — Zibrowius, 1974: 13, pl. 4: 22–34, synonymy.

LOCALITIES: “Princesse Alice II”, St. 1116 (Gravier, 1920); “Thalassa”, St. W 425, Z 453 (Zibrowius, 1974).

DISTRIBUTION: North Atlantic Ocean and Mediterranean.

DEPTH RANGE: 300–2165 m, in Mediterranean 400–660 m.

**Genus *Enallopsammia* Michelotti, 1871**Type species: *Coenopsammia scillae* Seguenza, 1864.

COMPOSITION: 4 species (Cairns, 1995).

DISTRIBUTION: Cosmopolitan — 1 species, west Atlantic — 1, Indo-Pacific — 1, Pacific — 1.

DEPTH RANGE: 229–2165 m.

***Enallopsammia rostrata* (Pourtales, 1878)***Amphihelia rostrata* — Pourtales, 1878: 204, pl. 1: 4–5; *Enallopsammia rostrata* — Zibrowius, 1973: 45–48, figs. 16–20; Zibrowius, 1980: 203–204, pl. 106: D–I, synonymy; Zibrowius, Gili, 1990: 39–42, pl. 6: A–F; Cairns, 1982: 57, pl. 18: 1–4, synonymy; Cairns, Parker, 1992: 52–53, pl. 18: e–I; Cairns, Keller, 1993: 281–282; Cairns, 1994: 92–93, pl. 39: d–f.

LOCALITIES: “Princesse Alice II”, St. 1116.

DISTRIBUTION: Cosmopolitan, except for Antarctic and East Pacific.

DEPTH RANGE: 229–2165 m.

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