UNDERWATER FIELD GUIDE TO ROSS ISLAND & MCMURDO SOUND, ANTARCTICA, VOLUME 2: CNIDARIA
anemones, soft coral, medusa, siphonophores, hydroids, jellyfish

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The National Science Foundation's Office of Polar Programs sponsored Norbert Wu on an Artist's and Writer's Grant project, in which Peter Brueggeman participated. One outcome from Wu's endeavor is this Field Guide, which builds upon principal photography by Norbert Wu, with photos from other photographers, who are credited on their photographs and above. This Field Guide aims to facilitate underwater/topside field identification from visual characters. Most organisms were identified from photographs with no specimen collection, so there can be uncertainty with these identifications.

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February 2015: Jellyfish/Scyphozoa IDs reviewed by Ron Larson.

November 2021: Taxonomic names checked in Zoological Record and World Register of Marine Species
anemone *Artemidactis victrix*

*Artemidactis victrix* is found in Antarctica, South Shetland Islands, South Orkney Islands, South Georgia Island, Burdwood Bank, and Punta Arenas/Chile, at depths from 5 to 439 meters [1,4,5,6].
Artemidactis victrix can be up to thirteen centimeters long (preserved) with the pedal disc being 6.5 centimeters wide [1]. It’s evident that Artemidactis victrix can crawl along on its pedal disc [7].

The column of Artemidactis victrix is smooth and cylindrical, dilating into a wide expanded upper portion which can fold backwards and hide the upper part of the column, with tentacles pointing downward in a fringe at the edge of the oral disc [2,6]. The oral disc of A. victrix is much wider than its column [2,6].

Artemidactis victrix is white, yellowish-white, salmon, or red in color [1,5].
The oral disc of *Artemidactis victrix* is usually hidden under its partially expanded actinopharynx, and is a visual identification character for this species [5,6]. Stephenson said the actinopharynx is “puffed out” and that “the extruded part of the actinopharynx ... forms two great rounded inflated lips, which are strongly and regularly ridged and furrowed” [1,6]. *Artemidactis victrix* tentacles are finely striated and taper from a broad base to a blunt or pointed tip [2].
Artemidactis victrix has up to three hundred tentacles arranged in four or five cycles [1,2,4]. Larger specimens of *A. victrix* have a tentacular crown diameter of 8.4 centimeters and tentacle length of 2.1 centimeters [2].

*Artemidactis victrix* is found in McMurdo Sound's second and third benthic faunal zone below 15 meters depth [3].

Edwardsia and Scolanthus anemones burrow in mud, sand, or gravel, with the lower part of their column having a thickened cuticle, into which they can retract [3]. *E. meridionalis* and *S. intermedius* co-occur in McMurdo Sound, and can be distinguished by nemathybome (series of nematocyst-bearing sacs in column) and tentacle arrangement, and by muscle histology [4,7]. Edwardsia and Scolanthus anemones are similar to each other, with Scolanthus differing from Edwardsia in lacking a physa/foot; however, some Edwardsia species have very small physa [10,11].
Here is *Edwardsia* sp. removed from the substrate.

*Edwardsia meridionalis* has been reported from McMurdo Sound locations and the open Ross Sea, though its distribution may be wider to encompass the Antarctic Peninsula, South Georgia Island, Tierra del Fuego, and Chile from 5 to 500 meters depth [1]. *E. meridionalis* typically has sixteen white-tipped colorless tentacles in two circles of eight with the inner tentacles longer than the outer tentacles; twelve to eighteen tentacles have been counted in specimens [1,11]. The column of *E. meridionalis* has been measured up to 3.5 centimeters long and 0.25 centimeters in diameter, and has eight white elongated blotches over a chestnut-colored region [1]. Inner tentacles are about 11.25 millimeters long and outer tentacles about nine millimeters long [1].

*Edwardsia meridionalis* is found burrowed in mud, sand, gravel, sponge spicule mats, and cobbles and is most abundant between 6 to 65 meters [1]. *E. meridionalis* is a dominant species in the McMurdo jetty soft-bottom macrofaunal community [2]. A study examined the gut contents of *E. meridionalis* and found diatoms, egg cases, copepods, polychaetes (pelagic and *Spirophanes tcherniai*), and the tanaid *Nototanais dimorphus* [2]. Its predators include the fish *Trematomus bernacchii* and *Trematomus hansoni* [2].

*Scolanthus intermedius* has been reported from McMurdo Sound, the Antarctic Peninsula, South Georgia Island, Chile, and Tierra del Fuego, from 6 to 300 meters depth [1,4,5,7,8]. *S. intermedius* has sixteen tentacles in two circles of eight [4,8]. *S. intermedius* is up to 3.8 centimeters long and 0.45 centimeters wide [4,8].

**Taxonomic note:** *Edwardsia intermedia* was changed to *Scolanthus intermedius* [9].

Edwardsiella ignota was first described from specimens collected in Chile at depths from 40 to 60 meters; this photo was taken at 24 meters depth on Ross Island (Cape Armitage or Little Razorback Island) [2,5]. *E. ignota* can have twenty to forty tentacles, with the inner tentacles larger and longer than the other ones, and a thin cuticle on the lower part of its column [2,4]. *Edwardsiella ignota* can be distinguished from *Edwardsia meridionalis* by the number of tentacles (in live and preserved material), and the coloration pattern (live material only) [1].

*Edwardsiella* anemones do not burrow, and are usually found in worm holes or holes and crevices among rocks [3,4]. *Edwardsiella* anemones have three cycles of tentacles, are ridged on the uppermost part of their column, and have a thickened cuticle on the lower part of their column [3,4,6].
Members of the anemone family Edwardsiidae are generally small and shy; they are seldom found, with the result being that knowledge of their distribution is patchy [3].

**Taxonomic Note:** First described by Carlgren as *Fagesia ignota* [2]. Carlgren noted the tentacle count and other anatomical details for *Fagesia* in an earlier work [4]. The genus *Fagesia* is a junior synonym of *Edwardsiella* [3,6].

Members of the anemone family Edwardsiidae are generally small and shy; they are seldom found, with the result being that knowledge of their distribution is patchy [1].
anemone *Hormathia lacunifera*

*Hormathia lacunifera* is found throughout Antarctica and the Antarctic Peninsula, South Shetland Islands, South Orkney Islands, South Sandwich Islands, South Georgia Island, off Falkland Islands, Bouvet Island, and off Rio Plata in Argentina at depths from 15 to 3,020 meters [1,3,4,7,8].

*Hormathia lacunifera* can be up to 107 millimeters high with a column up to sixty millimeters diameter [1,6].

*Hormathia lacunifera* is often found attached to rocks [6].
Hormathia lacunifera is found in McMurdo Sound's second benthic faunal zone between 15 and 33 meters depth [2].
The cylindrical column of *Hormathia lacunifera* has two histologically
different divisions (shown here), with the lower division (scapus) having a
strong reticulated brownish or yellowish cuticle with rectangular
tubercles arranged in rows, and the upper division (scapulus) being
whitish, yellowish, or pinkish, and is smooth or has shallow longitudinal
ridges \[1,3,5,6,7,8\].

Three externally different morphotypes of *Hormathia lacunifera*
have been found, differing in presence and development of cuticle and
tubercles in the scapus \[6\].
The 96 tentacles of *Hormathia lacunifera* are arranged in an inner row of 48 longer tentacles (up to 2.5 centimeters) and a outer marginal row of 48 shorter tentacles (up to 0.8 centimeter) [1,3,6].

The oral disc of *Hormathia lacunifera* is flat, and up to 75 millimeters in diameter, being wider than the column [6].
The tentacles of *Hormathia lacunifera*, like the scapulus (upper part of column) and oral disc, are whitish, yellowish, or pinkish [1,5,6]. The scapulus (upper part of column) and oral disc, may be yellow-orange [1,5,6,7]. *H. lacunifera* tentacles are smooth, tapered to a point and relatively long, and are longitudinally ridged [1,5,6].

*Isotealia antarctica* is found in Antarctica and in Bouvet Island, Chile, Argentina, and on the mid-Atlantic Ridge off southern Brazil, at depths from 25 to 1,401 meters [2,3,5,7,9,11,13,14].

The somewhat blunt and conical tentacles of *Isotealia antarctica* are arranged in six cycles and are 168 in number (also reported as 192) [2,3,4,7,13]. The points of the tentacles are often pulled inward, and the inner tentacles are longer than outer tentacles [3,4,11,13].
The column of *Isotealia antarctica* is cylindrical, flat-surfaced with fine wrinkles and folds (visible mesenterial insertions), and is colored light pink, salmon, brown-violet or orange [3,5,12,13].

Oral disc and tentacles of *Isotealia antarctica*. The margin of *I. antarctica* has up to 100 small pseudo-acrorhagi (marginal pseudospherules without special nematocysts) [3].
The pedal disc of *Isotealia Antarctica* is wider than the oral disc [13].

*Isotealia antarctica* is among the largest and most conspicuous benthic invertebrates in the second benthic zone of Cape Armitage between 15 and 33 meters depth [1].
Here *Isotealia antarctica* is shown devouring the medusa *Periphylla periphylla*. Large medusae or jellyfish which get close enough to the bottom in shallow water are prey to be captured by an anemone's tentacles [1]. The struggle can continue for quite awhile. The medusa pulses its bell as it tries to swim away while the anemone slowly pulls the medusa into its mouth.
Isotealia antarctica (on the right) is probably grabbing at the same prey as Urticinopsis antarctica (on the left).
Isotealia antarctica (on the left) grabbing at the same Desmonema glaciale jellyfish as Urticinopsis antarctica (on the right). It appears that I. antarctica has been pulled off its attachment, probably by the struggles of the jellyfish, and has been seen attached to jellyfish it is consuming [10].
Here is *Isotealia antarctica* at Puerto Chacabuco, Chile in 25 - 30 meters depth, with the pedal disc being 2-3 centimeters diameter [8].

The anemone column was nearly invisible being covered with mud [8].
Here is a side-by-side comparison of *Urticinaopsis antarctica* (on the left) and *Isotealia antarctica* (on the right).

**Taxonomic Note:** Dell 1972 states that *Isotealia antarctica* is believed to be a synonym of *Tealianthus incertus* by Carlgren, citing Carlgren's 1939 and earlier works [6]. Carlgren in 1949 and 1959 refers to it as *Isotealia antarctica* and differentiates the two genera in 1949 [5,7]. *Isotealia antarctica* in Patagonian Chile is reported with 96 tentacles [11].

anemone *Stomphia selaginella*
Stomphia selaginella is found in Antarctica and the Antarctic Peninsula, South Shetland Islands, South Orkney Islands, South Georgia Island and Shag Rocks, and Bouvet Island at depths from 9 to 1,674 meters [2,3,5,7,8,9]. Above, Stomphia selaginella is perched on a hydroid above a Tritoniella bellii egg mass.

Stomphia selaginella perched on a featherduster worm tube.

Stomphia selaginella is found in McMurdo Sound's third benthic faunal zone below 33 meters depth [1].
Specimens of *Stomphia selaginella* have been measured up to ten centimeters high and six centimeters in diameter; the pedal (foot) disc diameter a bit less than length [2,3].
The skin of *Stomphia selaginella* has a distinct coloration, with a white column with irregular orange spots, an oral disc that is light red or orange with dark orange radial lines at mesenterial insertions, a light orange mouth and actinopharynx, and light orange tentacles with two darker orange bands [3,6,7,8,9].
The white balls within the tentacles of the upper *Stomphia selaginella* anemone are embryos. *Stomphia selaginella* females brood their young internally [3]. The tentacles of *Stomphia selaginella* are thick and pointed, numbering 64 to 68 in most anemones [some authors report 37 to 80], and are restricted to the margin of the anemone’s column, with inner tentacles longer than outer ones [2,3,4,7,9].
Young *Stomphia selaginella* have oral disc diameters of three to six millimeters with their pedal disc shaped into a cone [3].
Stomphia selaginella has two morphotypes: thin and delicate, or thick and robust [7].
References:  
anemone *Urticinopsis antarctica*

*Urticinopsis antarctica* is found in Antarctica and the South Shetland Islands from 6 to 223+ meters depth [2,5,6].
Urticinopsis antarctica has a cylindrical massive sandy-colored body column up to fifteen centimeters high and eleven centimeters in diameter \(^{[2,7]}\). Urticinopsis antarctica is among the largest and most conspicuous benthic invertebrates in the Cape Armitage community between 15 and 33 meters depth and is found below 33 meters as well \(^{[1]}\).
The tentacles and oral disk of *Urticinopsis antarctica* are dirty white \[2,7\]. *U. antarctica* tentacles range in number from 120 (1.2 centimeter diameter anemone) to 600 - 800 (10 centimeter diameter anemone) \[2,4\]. Contracted tentacles are short and conical with slight longitudinal furrows and sometimes rounded on the end \[2,4,6\].
Urticinopsis antarctica may bend over to engulf a seastar (*Perknaster fuscus antarcticus* shown here). *U. antarctica* feeds predominantly on seastars and sea urchins which are 77% of its diet [1].
The sea urchin *Stereochinus neumayeri* is the most frequent prey of *Urticinopsis antarctica* at 65% of its diet [1]. *Stereochinus neumayeri* shields itself from the anemone's tentacled grasp with attached bits of shell, debris and algae; the shells and debris often have stinging hydroids on them (see the whitish polyps on top of the urchin at left). If the anemone touches the urchin's hydroids, it releases the urchin. If the urchin is aware of the anemone's tentacles, the urchin releases its protective camouflage and escapes. If this camouflage isn't present on the urchin, *Urticinopsis antarctica* captures and eats the urchin [1].
The seastars *Odontaster validus* (shown being devoured above) and *Diplasterias brucei* are significant prey items at 4% and 5% of the diet of *Urticinopsis antarctica* respectively [1]. Combined predation on the seastar *Acodontaster conspicuus* by *Urticinopsis antarctica* and the seastar *Odontaster validus* minimally killed 3.5% of the population of the seastar *Acodontaster conspicuus* in one year at Cape Armitage [3].

*Urticinopsis antarctica* is a generalist in its diet, and one study found in its gastrovascular cavity molluscs (*Adamussium colbecki, Laevilacunaria pumilia, Eatoniella caliginosa, a Rissoid gastropod, a Comatulida crinoid, sea urchin Sterechinus neumayeri, ophiuroid Ophiurolepis brevirima, and fish Trematomus* sp. [8]. Several *Conicostoma* sp. amphipods have been found undigested in *U. antarctica* and may be commensal organisms [8].
Urticinopsis antarctica also feeds on large medusae or jellyfish (Desmonema glaciale shown here) which get close enough to the bottom in shallow water to be captured by the anemone's tentacles; 21% of its diet are medusae [1]. Study of the stinging capsules in the endodermal epithelium of the pharynx of Urticinopsis antarctica showed them to be typical for scyphozoan medusas and properly oriented, indicating their use by the anemone in prey capture [8].
Divers may occasionally see two *Urticinopsis antarctica* anemones devouring the same medusa, *Diplulmaris antarctica* shown here.
A *Diplulmaris antarctica* jellyfish with its hitchhiking hyperiid amphipods, being devoured by the anemone *Urticinopsis antarctica*. 
Here is a side-by-side comparison of *Urticinopsis antarctica* (on the left) and *Isotealia antarctica* (on the right).

**References:**
**soft coral *Alcyonium antarcticum***

*Alcyonium antarcticum* is found in Antarctica and the Antarctic Peninsula, South Shetland Islands, South Georgia Island, Shag Rocks, Kerguelen Island, Heard Island, Burdwood Bank, Falkland Islands, and Argentina from shallow depths down to 642 meters [6,7,8,9,10,11,12,15].
The color of *Alcyonium antarcticum* is white, grayish white, grayish brown, light rose, orange, pale orange, or orange pink with white tentacles [1,6,7,9,10,11].
Alcyonium antarcticum has been measured at population densities of 0.02 and 7.3 colonies per square meter at Explorer's Cove and Arrival Heights respectively [5].
Individual colonies of *Alcyonium antarcticum* live at least 4.5 years, and many adults have shown no measurable growth over four years [5].
Alcyonium antarcticum produces chemicals that it releases into the water surrounding itself to deter predators and bacterial growth [4]. These anti-predator chemicals cause tube-foot retraction in the seastars Perknaster fuscus and Odontaster validus [2].
Juvenile *Alcyonium antarcticum* about two centimeters tall [14].
Alcyonium antarcticum feeds on plankton [3]. It has few predators, and is preyed upon by the sea spider Colossendeis megalonyx [2].

**Taxonomic Note:** Alcyonium paessleri was synonymized with *A. antarcticum* in 1992 [6]. The diagnosis of the genus *Alcyonium* was revised in 1986 [13].

Clavularia frankliniana is found in Antarctica and the Antarctic Peninsula and South Georgia Island at depths from 12 to 675 meters [2,3,4,7,9,22]. C. frankliniana is nearly transparent, white or pinkish to yellowish white [2]. C. frankliniana is shown here attached to sea urchin Sterechinus neumayeri.
Clavularia frankliniana can be found on rock or gravel bottoms, attached to stones, worm tubes, and shells [2,3,4,8].

An individual polyp (zooid) of Clavularia frankliniana averages 8.3 millimeters in height (can be up to 25 millimeters), has eight feathery tentacles [4,8,16,18].

Individual polyps die within 1.5 years though clones may live much longer [7].
An individual polyp of *Clavularia frankliniana* is connected by ribbon-like or spreading stolons to other polyps [4,8,16,18]. The stolon adheres to hard objects, thus attaching the colonies [18]. *C. frankliniana* has been measured at population densities of 0.18 and 1,337.3 polyps per square meter at Explorer's Cove and Arrival Heights respectively [7].

*Clavularia frankliniana* has a diet linked to food resuspended from the seafloor, probably by currents, bivalve molluscs, echinoderms, and fish; its polyps are located close to the bottom, and it feeds on diatoms, protozoans, foraminiferans, nematodes, and invertebrate larvae [21]. *C. frankliniana* has few predators and is preyed upon by the nudibranchs *Tritoniella belli* and *Notaeolidia gigas* and also by the sea spiders *Colossendeis robusta, Colossendeis megalonyx*, and *Thavmastopycnon striata* [1,3,4].
Extracts from *Clavularia frankliniana* cause tube-foot retraction in the seastars *Perknaster fuscus* and *Odontaster validus* which indicates feeding deterrence [4]. Extracts of the nudibranch *Tritoniella belli* and the soft coral *C. frankliniana* have chimyl alcohol in common. The common predatory seastar *Odontaster validus* shows feeding deterrence to *Tritoniella belli* mantle tissue and to chimyl alcohol [6]. *Tritoniella belli* probably defends itself chemically against predators using chimyl alcohol that it obtains from *C. frankliniana*.

**Taxonomic Note:** In 1906, Kukenthal changed *Clavularia frankliniana* to *Anthelia frankliniana* [11]. In 1929, Molander changed *Clavularia frankliniana* to *Pachyclavularia cylindrica* var. *frankliniana* [9]. In 1940, Gohar reassigned *Anthelia frankliniana* to *Clavularia frankliniana* and affirmed *Clavularia* as the genus instead of *Pachyclavularia* [12]. In 1960, noting Gohar, Verseveldt affirmed Molander's change to the genus *Pachyclavularia* and noted *Clavularia frankliniana* as properly being in the genus *Pachyclavularia* (though this work only sorted out genera and didn't sort out species characters) [10]. In 1974, it is referred to as *Clavularia cylindrica* [19]. In 1990, *Clavularia cylindrica* is referenced from original description and reports in South Africa; author notes inadequate descriptions in literature and need for revision of genus [20]. In 1990, *Pachyclavularia cylindrica* is noted as resembling *Pachyclavularia frankliniana* so the two species are deemed distinct [17]. Recent non-taxonomic publications referred to this soft coral as *Clavularia frankliniana*; those authors verified the ID as *Clavularia frankliniana* with Frederick M Bayer of the Dept of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution [4, 6, 7, 14]. The Smithsonian's US National Museum Polar Invertebrate Catalog refers to *Clavularia frankliniana* [15]. In 1981, Bayley published a key to Octocorallia genera which sorted out *Clavularia* and *Pachyclavularia* so it is assumed his later identification of the genus of this organism as *Clavularia frankliniana* is based on that published key [16]. Reassignment of the species *frankliniana* to the genus *Clavularia* appears to be unpublished as of August 2022.

nephtheid soft coral *Gersemia antarctica*

*Gersemia antarctica* is found in McMurdo Sound, South Georgia Island, South Sandwich Islands, and Bouvet Island from 12 to 3,144 meters depth [3,6,7,8,11,14,16]. *Gersemia* spp. have been reported from the eastern Weddell Sea, Bransfield Strait off the Antarctic Peninsula, and the South Shetland Islands [13].

In McMurdo Sound, *Gersemia antarctica* is found on White Island and on the Antarctic coastline from Granite Harbor down to Cape Chocolate at depths from 18 to 250 meters, and has been found on Ross Island at the south end of Cape Evans from 12 to 24 meters depth, and at the McMurdo Intake Jetty at 12 meters depth [3,7,11,14,16].

In Explorer's Cove at New Harbor, *Gersemia antarctica* is found in soft sediment communities where it is anchored to scallop shells, small rocks, or clay substrate [3]. At Explorer's Cove, *Gersemia antarctica* averages 0.04 colonies per square meter and is found there between 18 and 33 meters depth, with most colonies found from 27 to 33 meters depth [3].
*Gersemia antarctica* colonies can inflate to over two meters in height [1].
In addition to an upright feeding posture, *Gersemia antarctica* can bend its entire colony down so that the polyps reach the bottom to feed there [1].
The food that *Gersemia antarctica* seeks on the bottom includes benthic diatoms, foraminiferans, and particulate organic matter [1].

This grazing behavior has likely evolved to supplement plankton capture from the water and is useful in Antarctica where plankton in the water column is seasonal [1].
A *Gersemia antarctica* colony can move like an inch worm, to reach undisturbed sediments for grazing [1]. *Gersemia antarctica* colonies have been observed moving over fourteen meters in one year's time [1].

When a *Gersemia antarctica* colony encounters sediment previously grazed by *G. antarctica*, it contracts from it [1].
Gersemia antarctica colonies have been observed surviving for at least 4.5 years [4].
Sea spiders *Achelia* sp. clinging to *Gersemia antarctica*. Adult *Achelia* sea spiders are small, spending their lives clinging to the substrate on which they feed [12]. The protonymphon stage of *Achelia* may be passed in the tissues of the organism on which juveniles and adults feed [12].

The sea spider *Thavmastopycnon* sp. is also a predator of *Gersemia antarctica* [3].

*Gersemia antarctica* produces chemicals that it releases into the water surrounding itself to deter predators and bacterial growth [2].
Rob Robbins, McMurdo Station’s Scientific Diving Coordinator, photographed *Gersemia antarctica* at the south end of Cape Evans at 12 to 18 meters depth; this was the first recorded location for *Gersemia antarctica* on Ross Island [3,6,7,8,11].

Shown here at 24 meters depth, *Gersemia antarctica* hangs down from the wall at the south end of Cape Evans [14].
Several *Gersemia antarctica* are at the McMurdo Intake Jetty at 12 meters depth [16].
Taxonomic Note: First described by Kukenthal as *Eunephthya antarctica* in 1906 and discussed in 1914 by Gravier in comparison with another species of *Eunephthya* [6,10]. In 1961, Utinomi revised the family Nephtheidae for the genera *Gersemia*, *Duva*, *Drifa*, and *Pseudodrifa* and renamed *Eunephthya antarctica* to *?Drifa antarctica* and also synonymized *Paraspongodes antarctica* under *?Drifa antarctica* [5]. Recent non-taxonomic work referred to this soft coral as *Gersemia antarctica*; those authors verified the ID as *Gersemia antarctica* with Frederick M Bayer of the Dept of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution [1,2,3,4,7]. The Smithsonian's US National Museum Polar Invertebrate Catalog refers to *Gersemia antarctica* [8]. In 1981, Bayer published a key to Octocorallia genera which sorted out *Gersemia* and *Drifa*, so it is assumed his later identification of the organism as *Gersemia antarctica* is based on that published key [9]. A reassignment of *Eunephthya antarctica* or *?Drifa antarctica* to the genus *Gersemia* appears to be unpublished as of August 2022. *Gersemia antarctica* superficially resembles *Gersemia juliepackardae* but differs internally in radiates and sclerites [9].

**gorgonian *Onogorgia nodosa***

*Onogorgia nodosa* is found in Antarctica and the Antarctic Peninsula, South Shetland Islands and South Georgia Island at depths from 21 to 433 meters [1,3,4].

*Onogorgia nodosa* has unbranched pinkish-yellow whip-like colonies with a thin holdfast and its axis having longitudinal grooves [3,4]. *O. nodosa* has 2–3 whorls per centimeter of axial length, and up to 4.5 mm at middle part of colonies, with its polyps in one row at each whorl [3,4].
**Onogorgia nodosa** with contracted polyps.

**References:**
1: Smithsonian National Museum of Natural History, Antarctic Invertebrates naturalhistory.si.edu/iz/antiz/index.cfm ;
4: Smithsonian Contributions to Zoology 629:1-79, 2009
gorgonian, family Ellisellidae, possibly *Ctenocella* sp.

Cnidarian predators like gorgonians hunt passively, waiting with outstretched tentacles for prey to drift by [1].

The individual gorgonian polyps are linked by a body wall [1]. A horny protein called gorgonin contains fused calcareous spicules or sclerites and forms a solid or jointed central rod [1].
Sea whips are several genera of corals of the order Gorgonacea, characterized by long, whiplike growth [1]. The whip is a colony of tentacled polyps growing one upon one another in a continuous single stem. Spicule needles of lime are embedded in the polyp which provides firm, flexible support for the whip [1].
Sea whips differ from sea pens in that the sea whip polyps come directly off the center stalk, whereas sea pen polyps are on branches from the central stalk.

soft coral
Solmundella bitentaculata is found in the Atlantic, Pacific, and Indian Oceans and the Mediterranean and is particularly common in the southern hemisphere; it has been found throughout Antarctica [1,3,5]. Found at depths from the surface down to 1,100 meters, *S. bitentaculata* is usually found between 100 and 500 meters [1,3]. *S. bitentaculata* can be up to 7.2 centimeters wide and is higher than wide [1]. *S. bitentaculata* has thick apical jelly and the apex of the bell tends to be sharp-edged and keel-shaped, with the line of the keel between the two long tentacles [3,5].
Here's *Solmundella bitentaculata* taken from above, looking down at its central circular mouth, which opens to the aboral surface. Its two long tentacles issue from near the apex of its umbrella and are up to ten centimeters long [3]. *S. bitentaculata* swims with those two tentacles held in front of its umbrella, rather than trailing like most medusae.

*S. bitentaculata* can be abundant, and has been measured at average of 200 individuals per 1,000 square meters in the Antarctic Peninsula, with highest quantity at 1,000 to 1,200 meters depth with a mean of over 300 individuals per 1,000 square meters [6].

Here's a line drawing of *Solmundella bitentaculata* showing its features [1]. In this drawing *S. bitentaculata* is not in its swimming posture because its two tentacles are trailing behind the umbrella rather than being held in front of the umbrella.

*S. bitentaculata* can have the hitchhiking hyperiid amphipod *Hyperiella dilatata* on its exumbrella [2]. One prey item of *S. bitentaculata* is the shelled pteropod *Limacina rangii* [2,4].

leptomedusa, probably *Cosmetirella davisii*

*Cosmetirella davisii* is found in Antarctic and subantarctic neritic waters as well as the Magellan region and South Africa [1,2,4]. *Cosmetirella davisii* is up to 6 centimeters wide, has an almost hemispherical umbrella with a variable number of tentacles up to 180, and has four radial canals, along which its linear sinuous gonads run for half to two-thirds of the radial canals [1,4]. Leptomedusae have a hemispherical or flattened umbrella and have gonads on radial canals [1].

**Taxonomic Note:** *Cosmetirella simplex* was described with 32 or more tentacles, and is now synonymous with *C. davisii* which was described with about 80 tentacles; in this synonymy a smaller Antarctic growth form with 28-48 tentacles was recognized and a larger sub-Antarctic growth form with 56-150 tentacles was recognized. So this photo could be the *C. simplex* form [3].
trachymedusa *Benthocodon hyalinus*

*Benthocodon hyalinus* has been seen at scuba diving depths in McMurdo Sound, and may normally occur in deeper water [4,7]. *Benthocodon hyalinus* has also been reported from the Chukchi Sea in the Arctic Ocean [6].

*Benthocodon hyalinus* has a transparent dome-shaped umbrella up to four centimeters in diameter, with its white gonads as eight linear to wavy bands along its radial canals, and its tentacles are colorless or have light reddish brown tips [4,5].
Trachymedusae have the margin of their umbrella entire and not divided into lobes, have a thickened marginal nematocyst ring, have radial canals with their gonads usually confined to those radial canals, and have solid or both solid and hollow marginal tentacles [1].

*Benthocodon hyalinus* photographed in the Chukchi Sea in the Arctic Ocean [6].

Gelatinous carnivores are a predominant and sometimes the main component of the macroplankton and nekton community in the Southern Ocean [2]. Gelatinous carnivores are important components of the food web because they are a control mechanism for its structure [3].
Benthocodon hyalinus photographed in the Chukchi Sea in the Arctic Ocean [6].

**physonect siphonophore** *Bargmannia elongata*

*Bargmannia elongata* occurs worldwide [4]. Siphonophores occur throughout Antarctica and subantarctic waters, with warm-water species observed in high latitudes during the spring and summer and cold-water species surviving at low latitudes during the winter [2].

Siphonophores are swimming/floating colonies consisting of different zooids specialized for feeding, sensing, flotation, and reproduction [1]. Siphonophore colonies bud from a stem whose gastrovascular canal is continuous with the canals of all the zooids in the colony [1]. Physonect siphonophores have an apical gas-filled float with a budding zone on either side of the base [1]. *Bargmannia* species are the only physonect siphonophores with siphosomal (tail-end) tentacles and they also lack dactylozooids (defensive stinging individual zooids) [3]. Siphonophores are active predators, feeding on other plankton like fish larvae and krill [2].

Zyzzyzus parvula has been collected in Antarctica from depths of 3 to 144 meters [1,8].
Zyzzyzus parvula has a distinctive dark reddish-brown or brick-red color with about 30 aboral tentacles, each about 1 centimeter in length \( [3,5] \). Zyzzyzus parvula has been collected at sizes up to 3.5 centimeters in length \( [2,3] \). Zyzzyzus parvula may have a sudden diminution in diameter about halfway from its base to the tentacles \( [3] \).
Here’s a closeup of the hydranth (head) of *Zyzyzus parvula*. The reddish-white beads are the reproductive sex cells (gonophores) which arise in the space between the oral and aboral tentacles. After fertilization, those gonophores containing eggs develop free-swimming medusae borne from stalks above the aboral tentacles; the medusae have a pointed apex and apical canal, with one extensile marginal tentacle with beads of sting-cells [6].

The small tentacle-fringed structure rising up in the middle of the gonophores is the hypostome with the hydroid's mouth and smaller oral tentacles at the end.
Here Zyzzyzus *parvula* is living in an ice pocket.

*Zyzzyzus parvula* is a conspicuous member of Cape Armitage's second benthic faunal zone between 15 and 33 meters depth; its distribution is patchy [7]. *Zyzzyzus parvula* is also a conspicuous member of McMurdo Sound's third benthic faunal zone below 33 meters depth [7].
Zyzzyus parvula preys on benthic species, primarily diatoms, but also amphipods, copepods, nematodes, invertebrate eggs, sea urchin juveniles, and hydrozoans [8].
Taxonomic Note: Genus was changed from Lampra [3] to Corymorpha in 1972 [2], though it was referenced earlier in 1949 and 1967 as Corymorpha parvula [4,9]. Listed as Corymorpha in 1979 [1]. The parvula species was assigned to the Lampra genus in 1999 [13], assigned to the Monocaulus genus in 2001 [10] (the illustrations of the parvula and microrhiza species in this 2001 publication are switched [12,14]), and assigned to the Corymorpha genus in 2009 [11]. Assigned to the Zyzzyzus genus in 2019 [15]. The firm perisarc in the lower part of the stem and the gregarious habit are indicative for Zyzzyzus, which is defined by the way it attaches to the substrate [12,14].

athecate hydroid *Corymorpha* sp., probably *Corymorpha microrhiza*
Corymorpha microrhiza is found in Antarctica (McMurdo Sound, Weddell Sea, and Lazarev Sea) at depths from 33 to 761+ meters [1,8,9,10]. C. microrhiza is up to 14 centimeters long [1,8].

Corymorpha microrhiza has forty to fifty aboral tentacles about four centimeters in length [1]. In Corymorpha hydroids, there are two sets of filiform tentacles (long, slender tentacles with stinging cells scattered along their length): the short, numerous, and densely crowded oral tentacles and the longer basal aboral tentacles in a single whorl [11]. The aboral tentacles of Corymorpha hydroids are only slightly contractile [11].

The stalk and the numerous attaching root filaments of Corymorpha microrhiza have a thin chitinous covering called the perisarc [1]. Corymorpha hydroids are solitary and anchor themselves by root filaments [11].

Corymorpha microrhiza is a conspicuous organism in Cape Armitage's third benthic faunal zone below 33 meters depth [9].
Here's a closeup of the hydranth (head) of the hydroid. The small pale orange beads are the reproductive sex cells (gonophores) which arise in the space between the oral and aboral tentacles. The pink tentacle-fringed conical structure rising up in the middle of the gonophores is the hypostome with the hydroid's mouth and smaller oral tentacles surrounding the mouth.
After fertilization, those gonophores containing eggs develop free-swimming medusae borne from stalks above the aboral tentacles; the medusae have a pointed apex and apical canal, with one extensile marginal tentacle with beads of sting-cells.
Taxonomic Note: The specimen described by Hickson & Gravely as Lampra microrhiza is in a poor state and is generic; it seems similar to the hydroid shown above but could be any of several species \[1,2,7\]. The microrhiza species of Hickson & Gravely was assigned to Corymorpha in 1972 \[3\], assigned to Lampra in 1999 \[4\], assigned to Monocaulus in 2001 \[5\], and then assigned to Corymorpha in 2009 \[6\]. Redescribed in 2019 \[8\].

These hydroids are usually colonial, forming a tangled mat with long unbranched stalks, a thin perisarc covering, and are attached to the substrate by stolons [1,2,4,11]. These hydroid colonies do not anchor by rooting filaments as do the solitary Monocaulus hydroids [1,2,3].

These hydroids have two sets of filiform tentacles (long, slender tentacles with stinging cells scattered along their length): the short, numerous, and densely crowded oral tentacles and the longer basal aboral tentacles in a single whorl [1,2,3,11].

On the hydranth (head) of these hydroids, the small beaded area between the oral and aboral tentacles are the reproductive sex cells (gonophores). The tentacle-fringed conical structure rising up in the middle of the gonophores is the hypostome with the hydroid's mouth and smaller oral tentacles at the end.

Hydroids have a complex life cycle -- a sexual reproduction stage involving medusae or is medusoid in character, and an asexual reproduction stage, often colonial, involving asexual budding.
A prominent McMurdo hydroid is *Ectopleura crocea* [5,6,11]. *Ectopleura crocea* is colonial, with a few to several hundred mostly smooth stems arising from a mat [9]. *E. crocea* is found at depths from 0 to 234 meters and has been collected up to 12-17 centimeters in length [6,7,8,9,11]. *E. crocea* has white or greenish stems, orange red hydranth and gonophores, and white tentacles [9,11]. *E. crocea* can form creeping colonies on stones [10]. *E. crocea* has a diet dependent on the water column, capturing planktonic prey like copepods and invertebrate eggs [10].

**Taxonomic Note:** *Tubularia hodgsoni* was synonymized into *Tubularia ralphi*, and *T. ralphi* was synonymized into *Ectopleura crocea* [6,11,12].

**References:**
The Antarctic scallop *Adamussium colbecki* may be colonized on either shell by the small hydroid *Hydractinia angusta* [1,3].

*Hydractinia angusta* hydroids eat tube feet and pedicellariae of sea urchins including *Stereochinus neumayeri*, which grazes on the algal film growing on the surface of the scallop's shell, but is not a predator of the scallop [1]. *A. colbecki* shells are very thin and such urchin grazing may damage the shell; thus the hydroids act in defense of the scallop [1]. *Hydractinia angusta* hydroids eat the film (includes agglutinated diatoms) that it can remove with its tentacles from the scallop shell, as well as bottom sediment exposed to it due to clapping activity of the scallop [1]. *Hydractinia angusta* hydroids also reduce the settling of young *Adamussium colbecki* scallop larvae onto the shells of adult scallops, competing successfully for shell space with the young scallops [2].

a thecate hydroid *Hydrodendron arboreum*

*Hydrodendron arboreum* is found throughout Antarctica and South Shetland Islands, Bouvet Island, Kerguelen Island, Marion and Prince Edward Islands, and Patagonia at depths from 18 to 1,370 meters [3,4,5,9,10,13,14,15].
*Hydrodendron arboreum* is found in shrubby woody colonies with thick fascicled stems and irregular branching in different planes, reaching up to 35 centimeters high [3,4,7,10,13,14,16].
Hydrodendron arboreum color is typically light greenish-brown or honey brown, with younger branches being pale yellowish to colorless [7,14].

The center of the colony may have a mass of sex cells with developing larvae, clustered on a specialized branch, that are 15-25 millimeters in diameter [6,10].
*Hydrodendron arboreum* is a conspicuous organism in Cape Armitage's third benthic faunal zone below 33 meters depth, and is also found scattered around in the second benthic faunal zone between 15 and 33 meters depth [8].

Hydroids feed on plankton suspended in the water. During the Antarctic winter, it is dark for four months and plankton is greatly reduced though still present during that period; Antarctic suspension feeders may continue to feed at a low level or suspend their feeding activity for a few months centered on July [2].
Several *Doto antarctica* nudibranchs are shown here on *Hydrodendron arboreum*.

*Hydrodendron arboreum* is preyed upon by the seastar *Odontaster validus*, the nudibranch *Doto antarctica*, and two unidentified aeolid nudibranchs (possibly *Eubranchus* sp. and *Coryphella* sp.) [1].

**Taxonomic Note:** Genus was *Halecium arboreum* in 1966 [3], then changed to *Hydrodendron arborea* in 1977 [4], followed by a change to *Ophiodes arboreus* in 1979 [5]. Several subsequent authors continued using the *Hydrodendron* genus and *Hydrodendron arboreum* [6,10,11,12,13]. Reassigned to *Hydrodendron arboreum* in 2008 [14].

scyphomedusa *Desmonema glaciale*

*Desmonema glaciale* is found in Antarctica and the Antarctic Peninsula, South Orkney Islands, and South Georgia Island, where it is found near the surface in continental shelf waters [1].

*Desmonema glaciale* is pink-violet in color and its bell-like umbrella can be over one meter in diameter [1].
Desmonema glaciale is distinctive for its thick, flattened, cord-like tentacles that are few in number (less than ten), and may be over five meters long [1].
Desmonema glaciale has broad curtain-like pleated oral arms [1].

Desmonema glaciale feeds on diverse pelagic and benthic prey including euphausids and fish; it has been observed engulfing benthic animals like Parborlasia corrugatus nemertean worms and Odontaster validus seastars [2].

The hyperiid amphipod Hyperia macrocephala can be found riding along on jellyfish, living as a juvenile in the medusa's gastrovascular system (where they avoid becoming a food item for the medusa) and becoming a parasite feeding on the epidermis when adult [2,3].
This *Desmonema glaciale* jellyfish got close to the bottom in shallow water and was captured by tentacles of two *Urtcinopsis antarctica* anemones [6]. The struggle can continue for quite awhile. The medusa pulses its bell as it tries to swim away, while the anemones slowly pull the medusa into their mouths.
This *Desmonema glaciale* jellyfish is being consumed by nemertean worms *Parborlasia corrugatus*.

Gelatinous carnivores are a predominant and sometimes the main component of the macroplankton and nekton community in the Southern Ocean [4]. Gelatinous carnivores are important components of the food web because they are a control mechanism for its structure [5].

Desmonema gaudichaudi is found in Antarctic and subantarctic waters, Tierra del Fuego, Falkland Islands, Argentina, Kerguelen Island, Heard Island, southern Australia, and New Zealand [1,4,5,6,7].
The umbrella of *Desmonema gaudichaudi* is up to 100 centimeters in diameter, and it has 10 to 60 thickened tentacles in specimens over 25 centimeters in bell diameter [1,5]. *Desmonema gaudichaudi* may have symbiotic fish living among its tentacles [6].

The hyperiid amphipod *Hyperia macrocephala* can be found riding along on jellyfish, living as a juvenile in the medusa's gastrovascular system (where they avoid becoming a food item for the medusa) and becoming a parasite feeding on the epidermis when adult [2,3]. Gelatinous carnivores are a predominant and sometimes the main component of the macroplankton and nekton.
community in the Southern Ocean [4]. Gelatinous carnivores are important components of the food web because they are a control mechanism for its structure [4].

Duncecap or helmet jelly *Periphylla periphylla*

*Periphylla periphylla* is found in Antarctica and the Antarctic Peninsula, South Shetland Islands, South Sandwich Islands, South Georgia Island, Argentina, the Southern Ocean, and worldwide in depths from about 200 to 1000 meters, but it can be at the surface in high latitudes especially at night \[1,7\]. Diving under the ice in Antarctica is equivalent to this latter condition.

*Periphylla periphylla* is the most widely distributed and abundant scyphomedusa in deep water \[1\].
Periphylla periphylla has a thickened and conical or hemispherical central dome, which is higher than it is wider, and it can be up to 35 centimeters in diameter [1,7]. Periphylla periphylla has a large purple, violet, dark red, or dark brown stomach, occupying the upper portion of the dome [1,5,7].
Periphylla periphylla has twelve tentacles in groups of three, with sense organs in between; it captures small zooplankton with its rigid upward-pointing tentacles, which are then bent down and inward to bring prey to its mouth \[1,2,7\]. The coronal groove around the lower portion of its bell or umbrella acts as a hinge to provide flexibility for swimming and to contain prey during feeding \[2\].
Periphylla periphylla jellyfish which get close to the bottom in shallow water are prey to be captured by tentacles of an anemone (Isotealia antarctica anemone shown here with a P. periphylla jellyfish with the tentacles of some other jellyfish on top of its umbrella) [3]. The struggle can continue for quite awhile. The medusa pulses its bell as it tries to swim away while the anemone slowly pulls it into its mouth.
Anemone-captured *Periphylla periphylla* can be nibbled by sea spiders passing by the anemone [4].

scyphomedusa *Diplulmaris antarctica*

*Diplulmaris antarctica* is found in Antarctica and the Antarctic Peninsula near the surface in continental shelf waters [1,8].

*Diplulmaris antarctica* has 16 - 48 whitish laterally compressed tentacles [1]. *Diplulmaris antarctica* has frilled curtain-like reddish-orange oral arms and its stomach gastrodermis is also reddish-orange [1].

The colorless bell-like umbrella of *Diplulmaris antarctica* can be up to eighteen centimeters in diameter [1,2].

*Diplulmaris antarctica* feeds on copepods, euphausiid larvae, medusae, ctenophores, fish larvae, and the molluscan pteropods *Clione antarctica* and *Limacina rangii* [1,2].
*Diplulmaris antarctica* is usually infested with a hyperiid amphipod *Hyperiella dilatata* which sits with its dorsal (top) surface against the outside top of the medusa's bell, the exumbrellar surface \[^{[2]}\]. The hyperiid amphipods are those white dots on the surface of the clear bell in the picture at left. Collectors have found up to 54 of these hyperiid amphipods riding along, clinging tightly to the medusa.
These riding amphipods are predominantly juveniles and females; this suggests that the medusa is both an amphipod mating platform (where females await more mobile males) and a predation refuge for juveniles and females. The hyperiid amphipods do not appear to feed on the medusa and probably use it as a safe harbor between feeding forays.

*Diplulmaris antarctica* has also been reported in association with the hyperiid amphipod *Hyperia macrocephala*. 
Jellyfish which get close to the bottom in shallow water are prey to be captured by tentacles of an anemone (*Diplulmaris antarctica* jellyfish and *Urticinopsis antarctica* anemone shown here) [3]. The struggle can continue for quite awhile. The medusa pulses its bell as it tries to swim away while the anemone slowly pulls the medusa into its mouth.
Here’s a *Diplulmaris antarctica* jellyfish with some hitchhiking amphipods, that is nearly swallowed by an *Urticinopsis antarctica* anemone.

Another predator of *Diplulmaris antarctica* is the Adelie penguin [6,7].
Gelatinous carnivores are a predominant and sometimes the main component of the macroplankton and nekton community in the Southern Ocean [4]. Gelatinous carnivores are important components of the food web because they are a control mechanism for its structure [5].

coronate scyphomedusa, possibly *Atolla gigantea*

Seen at the ice edge of McMurdo Sound, this coronate scyphomedusa could be *Atolla gigantea*; it has long tentacles like *Desmonema* but has a short black manubrium like *Atolla* [1].

*Atolla gigantea* has a large umbrella up to fifteen centimeters in diameter, with a broad flattened central disc, and usually 28 tentacles, but also 24, 26, or 27 [2].