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 is intended to facilitate underwater/topside field identification from visual characters. Organisms were identified from photographs with no specimen collection and there can be some uncertainty in identifications solely from photographs.

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May 2019: Taxonomic names checked in Zoological Record and World Register of Marine Species

Feb. 2015: IDs reviewed by Ron Larson.
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 *Urticinopsis 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].

scyphomedusa *Desmonema gaudichaudi*

*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].
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].

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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 (except in the Arctic) in depths from about 200 to 1000 meters but it can be at the surface in high latitudes especially at night [1]. 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 and it can be up to 35 centimeters in diameter [1]. *P. periphylla* has a large dark red or dark brown stomach, occupying the upper portion of the dome [1,5].

*Periphylla periphylla* has twelve tentacles and captures small zooplankton with its rigid upward-pointing tentacles; its tentacles are then bent down and inward in order to bring prey to its mouth [1,2]. 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].

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

*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 helicina* [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 [2]. The hyperiid amphipods do not appear to feed on the medusa and probably use it as a safe harbor between feeding forays [2].

*Diplulmaris antarctica* has also been reported in association with the hyperiid amphipod *Hyperia macrocephala* [1].
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].
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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].