

ALLOPOSIDAE

Diagnostic characters: Gelatinous pelagic octopods, which grow to large size. Body short, broad. Head wide; the eyes are large and the short arms are connected by a deep web. **The funnel is embedded in head tissue.** Males are much smaller than females but are relatively large (ca. 30 cm total length) compared with some other families of pelagic octopods. Females of *Haliphron atlanticus* (= *Alloposus mollis*) are very large, reaching 40 cm mantle length or a total length up to 2 m. Funnel locking apparatus with lateral folds on the funnel and corresponding grooves on the mantle. **Arm suckers mostly in 2 series but grade to single series near mouth.** Hectocotylus with papillate lateral fringes from base to spermatophore reservoir; open spermatophore groove. Water pores absent. **Colour:** not distinctive.

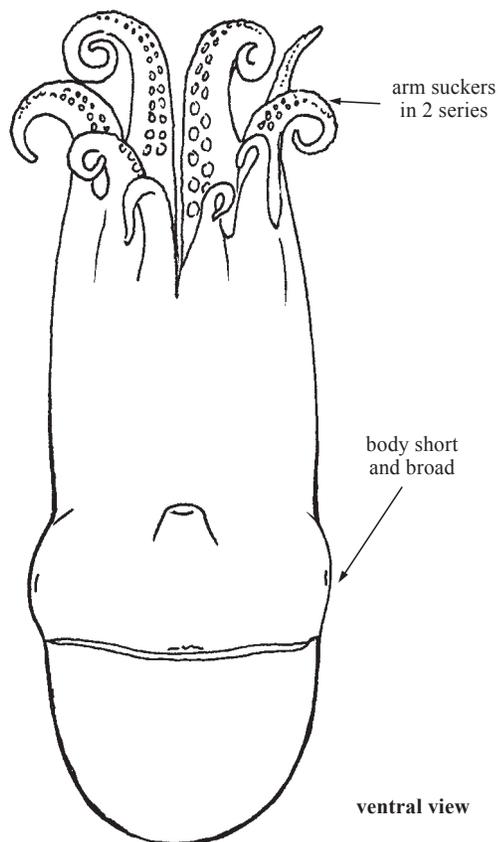
Habitat, biology, and fisheries: The hectocotylus develops in an inconspicuous sac in front of the right eye which gives the male the appearance of having only 7 arms. The hectocotylus detaches at mating. Females brood their eggs, which are attached to the oral side of the arm bases near the mouth.

Similar families occurring in the area

Other families of gelatinous, pelagic, incirrate octopods (Amphitretidae, Bolitaenidae, and Vitreledonellidae) have arm suckers in a single series. Cirrate octopods (Cirroteuthidae, Opisthoteuthidae, Stauroteuthidae) also have gelatinous muscle consistency, but possess fins as well as uniserial suckers which alternate with pairs of cirri.

List of species occurring in the area

Haliphron atlanticus Steenstrup, 1861.



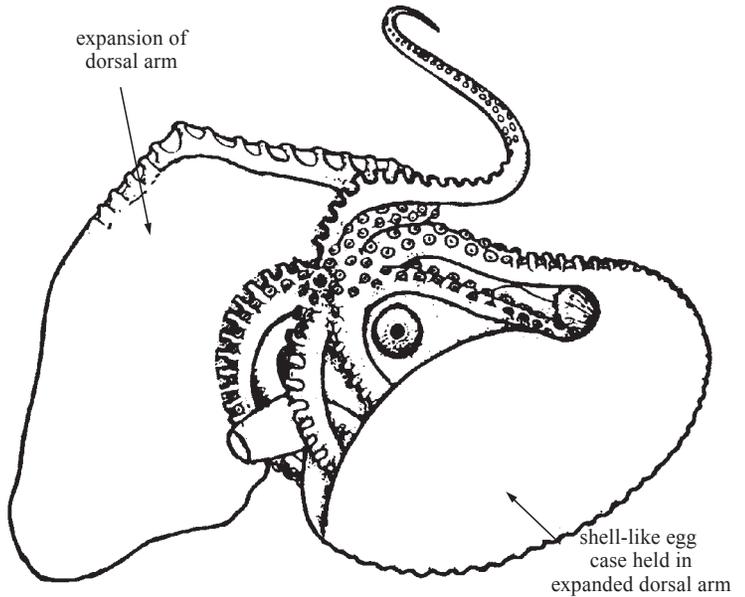
ARGONAUTIDAE

Paper nautilus

Diagnostic characters: Muscular, pelagic octopods, rather than true nautilus. Funnel-mantle locking apparatus consists of a knob and pit. Water pores absent. Mature females produce an external shell-like egg case. Females with flag-like expansion of the web of the dorsal arms that contain "shell"-secreting glands. Hectocotylus develops in a sac beneath the eye; lacks a lateral papillate fringe. **Colour:** not distinctive.

Habitat, biology, and fisheries: The dorsal arms of females are modified with large, flag-like membranes that expand over the thin calcareous "shell" that functions as a brood chamber and in which they reside; the membranes are responsible for its secretion. The "shell" is not homologous with the true molluscan shell as it is formed by the dorsal arms of the female rather than the

internal shell sac as in other coleoid cephalopods. These brood chambers may reach 30 cm diameter. Eyes are very large and intrabrachial webs very small. Males are dwarfs. The hectocotylus can detach after its release from the subocular pouch in which it forms; it is sometimes found within the mantle cavity of the female, where it appears similar to a parasitic worm. Argonauts live in tropical and subtropical surface waters of all oceans and seas. Sometimes they are found in large swarms, but only rarely are they encountered nearshore. In the open ocean argonauts are commonly found attached to jellyfish which they seem to use as a source of food and protection (Heeger, et al., 1992). Males have been reported living within salps (Banas et al., 1982).



Similar families occurring in the area

No other cephalopods produce a shell-like egg case.

Octopodidae: lack a funnel locking apparatus and males are not dwarves, nor do their hectocotyls develop in a sac.

Ocythoidae and **Tremoctopodidae:** have water pores on their heads; whereas male argonautids are usually hectocotylized on the left side, males of the latter 2 families are usually hetocotylized on the right; the hectocotylus pouch in ocythoids is stalked, and female tremoctopodids have an extensive web connecting the dorsal and dorsolateral arms.

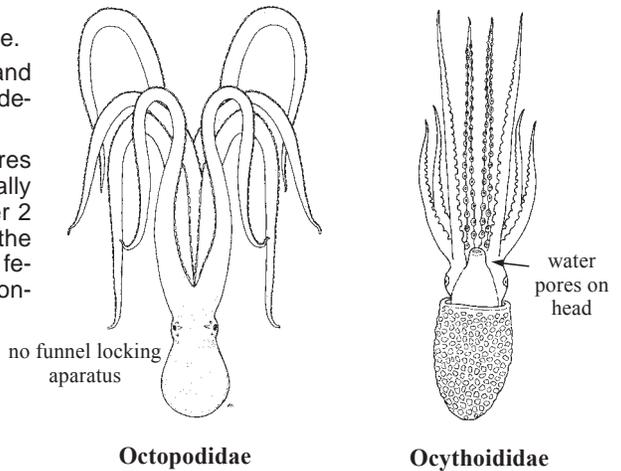
List of species occurring in the area

- Argonauta argo* Linnaeus, 1758.
- Argonauta hians* Lightfoot, 1786.

References

Banas, P.T., D.E. Smith, and D. C. Biggs. 1982. An association between a pelagic octopod, *Argonauta* sp. Linnaeus 1758, and aggregate salps. *Fish. Bull. U.S.*, 80:648-650.

Heeger, T., U. Piatkowski, and H. Möller. 1992. Predation on jellyfish by the cephalopod *Argonauta argo*. *Mar. Ecol. Prog. Ser.*, 88:293-296.



BOLITAENIDAE

Bolitaenids

Diagnostic characters: Gelatinous bodies of rather small size (about 85 mm mantle length in the largest species) and numerous chromatophores. The mantle aperture is wide. **Arms short; length less than mantle length.** Suckers in a single series. **Eyes laterally compressed.** Long axis of digestive gland parallels body axis. Stomach posterior to digestive gland. Lateral teeth of radula multicuspid (=ctenoglossan). Third right arm in *Bolitaena* hectocotylized (*Japetella* apparently lacks hectocotylization although some sexual dimorphism of arms occurs). **Mature females with a circular light organ surrounding the mouth.** **Colour:** not distinctive.

Habitat, biology, and fisheries: The large light organ that develops around the mouth in females at maturity presumably functions in attracting a male in the dark waters at depths of 1 000 m or more. This is the only luminescent organ known in incirrate octopods. Bolitaenids brood their embryos until hatching. During brooding, the eggs are held by suckers near the mouth where they are well covered by the arms and web. Common meso- to bathypelagic octopods that are broadly distributed, mostly in tropical to temperate latitudes of all oceans.

Remarks: Two, probably monotypic, genera are present in this family. The genus *Bolitaena* was described nearly 30 years before a species name, *Bolitaena microcotyla*, was appended in 1886, in a brief description. *Eledonella pygmaea*, which appears to be synonymous with *B. microcotyla*, was described by Verrill in 1884. The proper name, therefore, is *Bolitaena pygmaea*.

Similar families occurring in the area

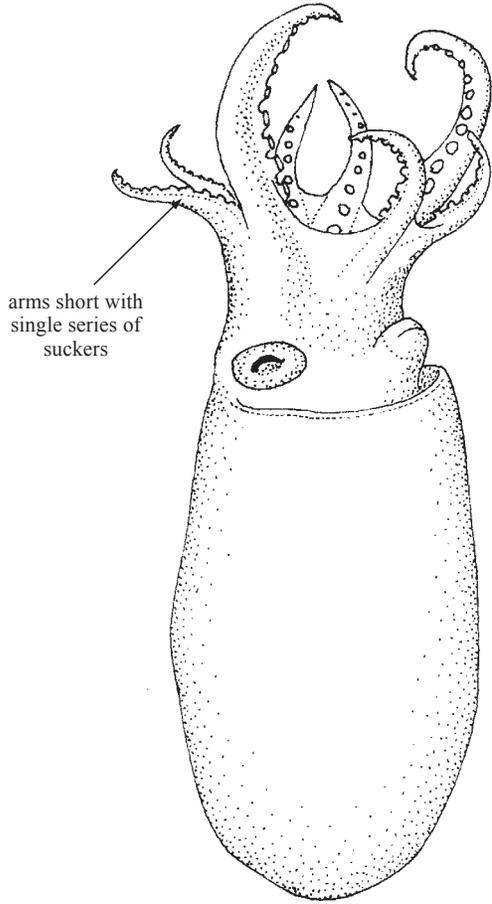
In the other gelatinous pelagic octopod families (Vitreledonellidae, Amphitretidae, and Alloposidae) the arms are longer than the mantle length. Additionally, amphitretids have tubular eyes and vitreledonellids have a greatly elongate, spindle-shaped digestive gland. The distal-most suckers on the arms of alloposids are in 2 series.

Key to the genera of Bolitaenidae occurring in the area

- 1a. Eyes well removed from brain on long optic stalks; left ventrolateral arm hectocotylized in males, with an elongate ligula *Bolitaena*
- 1b. Eyes adjacent to brain in young animals but slightly removed in older animals (optic stalks short); hectocotylus unknown *Japetella*

List of species occurring in the area

- Bolitaena pygmaea* (Verrill, 1884).
- Japetella diaphana* Hoyle, 1885.



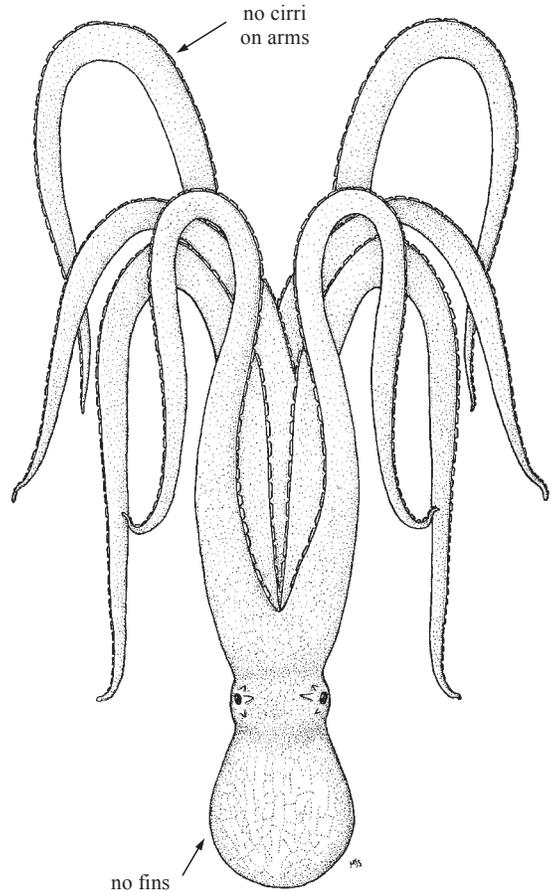
OCTOPODIDAE

Benthic octopods

Diagnostic characters: No fins; no cirri on arms. Muscle tissue of mantle and arms firm (not gelatinous, but may be covered by gelatinous subdermal layer). **Funnel locking apparatus absent.** Water pores on head absent. Stomach and caecum posterior to digestive gland. Lateral radula teeth (if present) simple, with single cusp. Mature males not very much smaller than females; with **left or right ventrolateral arm hectocotylized (not detachable; never in pocket), formed by an open sperm groove (running along ventral side of the arm) and spoon-shaped, non-filamentous tip.** Females without dorsal arm flaps or permanent reticulate sculpturing of ventral mantle. **Colour:** not distinctive.

Habitat, biology, and fisheries: The family Octopodidae is extremely rich in species. These octopods occur in all oceans and nearly all benthic marine habitats. Most lay eggs in large numbers strung together in strands and attached to a hard substrate, hidden from view of potential predators. Hatchlings either settle immediately to the bottom to take up the habitat of the adult (species with large eggs relative to adult size), or as paralarvae are planktonic for a period, during which time they drift about with the currents before settling out into the adult habitat (small-egg species). The inshore species that support current fisheries or show a potential for fisheries occur from ca. 1 to 50 m depth on sand, mud, grass flat, coral reef or reef-rubble habitats, depending on the species. Fishing activity ranges from the subsistence level using hooked poles or spears to the commercial level using trawl nets, multiple baited lines, or clay pots.

Remarks: The taxonomy of this family is the most problematic of all cephalopods. Although there is no doubt that it is a very speciose group, many species are poorly characterized. Some species currently recognized probably are synonymous with older descriptions whereas undescribed species undoubtedly exist. The genera are not well defined and subfamilies, based largely on shared-loss character states which are easily convergent, are controversial. The morphological plasticity of skin structures, colour patterns, relative arm lengths, etc. make of these characters, which are valuable when observing live animals, very difficult to use for identification of preserved octopods, which may have been fixed in various states of relaxation. Furthermore, confident identification of octopodid species often requires examination of both mature males, for hectocotylus morphology, and mature females, for egg size. For a more complete review of the species of Atlantic Octopodinae (shallow-water octopods with biserial suckers and an ink sac), see Mangold (1998) and Voss and Toll (1998).



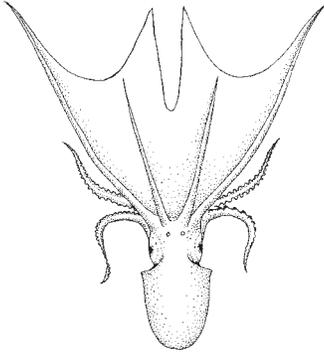
Similar families occurring in the area

Families of muscular pelagic octopods (Ocythoidae, Tremoctopodidae, Argonautidae): have a funnel locking apparatus and males are dwarves whose hectocotyli develop in sacs.

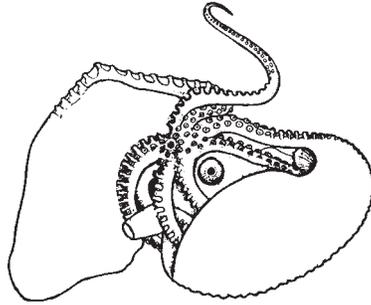
Tremoctopodidae: have water pores on both dorsal and ventral sides their heads; females have an extensive web connecting the dorsal and dorsolateral arms.

Argonautidae: females have flaps on the dorsal arms which secrete and hold a shell-like egg case.

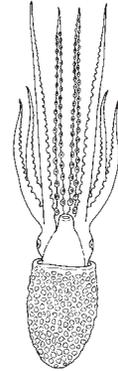
Ocythoidae: have water pores on ventral head; females have permanent reticulate sculpturing on the ventral mantle.



Tremoctopodidae



Argonautidae



Ocythoidae

Provisional key to genera and species groups occurring in the area

- 1a. Suckers in 1 series (may form zig-zag pattern when arms are contracted); star-shaped cartilaginous tubercles permanently visible on dorsal surfaces of mantle, head, arms, and 2 pairs of large supraocular cirri; funnel organ with 4 separate parts (III-shaped) *Tetracheledone*
- 1b. Suckers in 2 series; structures on dorsal surfaces of mantle, head, arms (when present) not star-shaped cartilaginous tubercles; funnel organ either V- or W-shaped → 2

- 2a. Ink sac absent → 3
- 2b. Ink sac present → 4

- 3a. Ligula of hectocotylus long (13 to 40% hectocotylized arm length), broad; arms short (1.5 to 3 times mantle length); erectile supraocular cirri present (may be difficult to see when not erect); erectile skin papillae present over dorsal surfaces of mantle, head and arms (may be difficult to see when not erect) *Bathypolypus*
- 3b. Ligula of hectocotylus short (4 to 15% hectocotylized arm length), narrow; arms long (2.5 to 6 times mantle length); erectile supraocular cirri absent; skin smooth *Benthooctopus*

- 4a. Ocellus (eye spot) present bilaterally between eye and bases of lateral arms *ocellate Octopus group*
- 4b. No ocelli between eye and bases of lateral arms (an eye spot may be present on mantle) → 5

- 5a. Gill lamellae 12 to 14 per outer demibranch *Scaergus*
- 5b. Gill lamellae 4 to 11 per outer demibranch → 6

- 6a. Funnel organ V shaped; mantle opening narrow, tightly surrounding funnel *Pterooctopus*
- 6b. Funnel organ W shaped; mantle opening wide → 7

- 7a. Dorsal arms clearly longer than lateral or ventral arms → 8
- 7b. Dorsal arms shortest or subequal with other arms → 9

- 8a. Pair of dark ocelli present on dorsal mantle; arms extremely long, easily autotomized; ventral arms longer than lateral; dorsal arms not particularly stouter than other arms; 7 gill lamellae per outer demibranch *Euaxoctopus*
- 8b. Colour pattern typically with many white spots but no ocelli on mantle; arms not easily autotomized; lateral arms longer than ventral; dorsal arms stouter than other arms; 10 or 11 gill lamellae per outer demibranch *Octopus (Callistoctopus?) macropus* group

- 9a. Ventral arms longer than lateral arms; dark stripe along dorsal side of each arm *Octopus burryi*
- 9b. Lateral arms longer than ventral arms; no dark stripe along dorsal surface of each arm → 10

- 10a. Gill lamellae 4 to 8 per outer demibranch → 11
- 10b. Gill lamellae 9 to 11 per outer demibranch → 13

- 11a. Both dorsolateral and ventrolateral arms much longer and stouter than ventral or dorsal arms; medium-sized adults (10 to 12 cm mantle length) *Octopus briareus*
- 11b. Dorsolateral arms not longer or only slightly longer and stouter than ventral arms; small adults (3 to 5 cm mantle length) → 12

- 12a. Wide dark transverse bands on light background over head, mantle, and arms (difficult to see in some states of preservation) *Octopus zonatus*
- 12b. Colour variable but lacking dramatic banding pattern *Octopus joubini* group

- 13a. Non-hectocotylied ventrolateral arms distinctly longer than dorsolateral arms; 11 gill lamellae per outer demibranch *Octopus (Macrotritopus?) defilippi* group
- 13b. Ventrolateral arms only slightly longer than dorsolateral arms; 9 to 11 gill lamellae per outer demibranch *Octopus cf. vulgaris* group

Key to the species of ocellate *Octopus* in the area

- 1a. Gill lamellae 5 to 9 per outer demibranch; ligula length 3 to 5% of hectocotylied arm length; egg length 1.6 to 1.8 mm; small animals (mantle length to 7 cm) *Octopus filiosus*
- 1b. Gill lamellae 9 to 11 per outer demibranch; ligula length 1.4 to 1.9% of hectocotylied arm length; egg length ca. 17 mm; large animals (mantle length to 20 cm) *Octopus maya*

Key to the species of *Pteroctopus* in the area

- 1a. Right ventrolateral arm of males hectocotylied; ventral arms shorter than other arms, which are subequal in length; 9 gill lamellae per outer demibranch *Pteroctopus schmidti*
- 1b. Left ventrolateral arm of males hectocotylied; all arms subequal in length; 9 or 10 gill lamellae per outer demibranch *Pteroctopus tetracirrhus*

List of species occurring in the area

Note: The species groups may contain 1 or more species in the area, the correct name[s] of which have not yet been resolved.

The symbol ♀ is given when species accounts are included.

Subfamily Bathypolypodinae

♀ *Bathypolypus arcticus* (Prosch, 1847).

♀ *Benthoctopus januarii* (Hoyle, 1885).

Subfamily Eledoninae

♀ *Tetracheledone spinicirrus* Voss, 1955.

Subfamily Octopodinae

♀ *Euaxoctopus pillsburyae* Voss, 1975.

♀ *Octopus briareus* Robson, 1929.

♀ *Octopus burryi* Voss, 1950.

♀ *Octopus (Macrotritopus?) defilippi* group.

♀ *Octopus (Macrotritopus?) defilippi* Verany, 1851.

♀ *Macrotritopus* spp.

♀ *Octopus joubini* group.

♀ *Octopus joubini* Robson, 1929.

♀ ? *Octopus mercatoris* Adam, 1937 (?="large-egg *Octopus joubini* form").

♀ *Octopus (Callistoctopus?) macropus* group.

♀ *Octopus (Callistoctopus?) bermudensis* (Hoyle, 1885).

♀ *Octopus (Callistoctopus?) macropus* Risso, 1826.

♀ *Octopus cf vulgaris* group.

♀ *Octopus americanus* Orbigny, 1842 in de la Sagra, 1838-1857:Atlas [1842].

♀ *Octopus carolinensis* Verrill, 1884.

♀ *Octopus occidentalis* Steenstrup in Hoyle, 1886.

♀ *Octopus zonatus* Voss, 1968.

♀ Ocellate *Octopus* group.

♀ *Octopus filiosus* Howell, 1868.

♀ *Octopus maya* Voss and Solis Ramirez, 1966.

♀ *Pteroctopus schmidti* (Joubin, 1933).

♀ *Pteroctopus tetracirrus* (Chiaie, 1830).

♀ *Scaeurgus unicirrus* (Chiaie, 1839-1841).

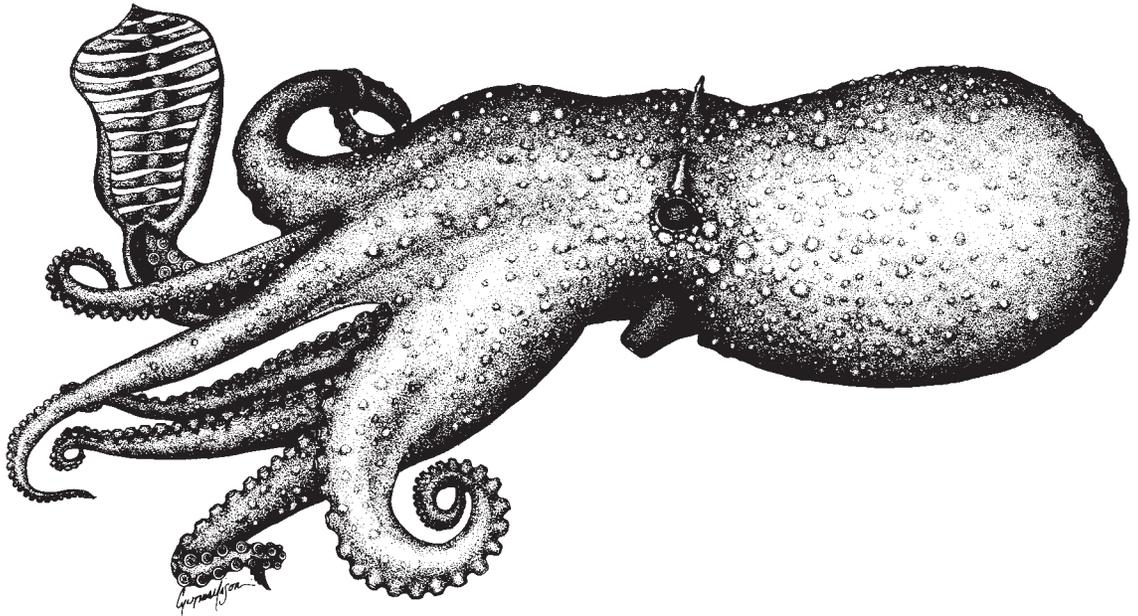
References

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Bathypolypus arcticus (Prosch, 1847)

Frequent synonyms / misidentifications: *Octopus bairdii* Verrill, 1881, *Bathypolypus lentus* (Verrill, 1880) / *Octopus* sp.

FAO names: **En** - Spoonarm octopod; **Fr** - Poulpe boreal; **Sp** - Pulpito violáceo.



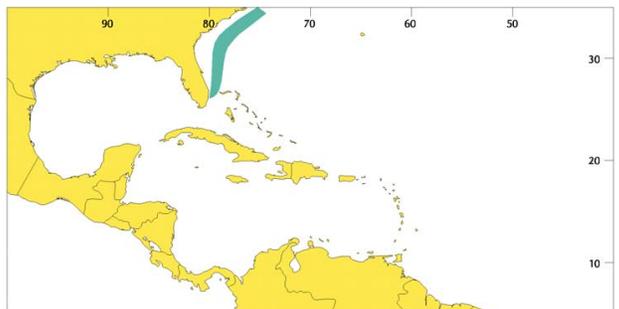
Diagnostic characters: Suckers in 2 series. Funnel organ W-shaped. Ink sac absent. **Ligula of hectocotylus long (13 to 40% hectocotylized arm length), broad; arms short (1.5 to 3 times mantle length); erectile supraocular cirri present** (may be difficult to see when not erect); **erectile skin papillae present over dorsal surfaces of mantle, head and arms** (not star-shaped cartilaginous tubercles; may be difficult to see when not erect). Gill filaments 7 or 8 per outer demibranch. **Colour:** not distinctive.

Size: To 10 cm mantle length.

Habitat, biology, and fisheries: Although found in shallow Arctic and boreal waters, in the Western Central Atlantic, this is a continental-slope species. Lives on muddy bottoms in cold water. Slow-moving and slow-growing, potentially living for several years. Females lay 10 to 110 large eggs which hatch as benthic young.

Distribution: Greenland and Spitsbergen to Florida Straits and British Isles.

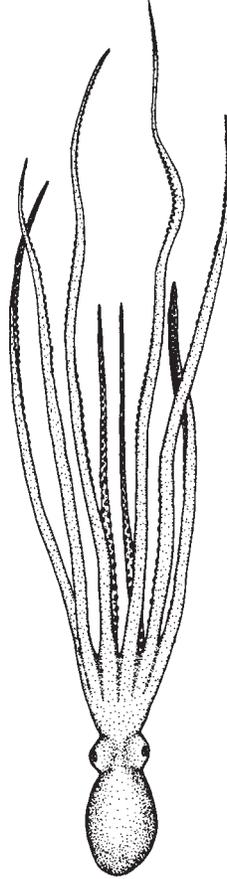
Remarks: Controversy exists over whether *B. arcticus* is a distinct species from *Bathypolypus bairdii* (Verrill). If the species are separate, then the latter name is correct for the species in the current area.



Benthoctopus januarii (Hoyle, 1885)

Frequent synonyms / misidentifications: None / *Octopus* sp.

FAO names: **En** - January octopod; **Fr** - Poulpe filamenteux; **Sp** - Pulpo filamentoso.



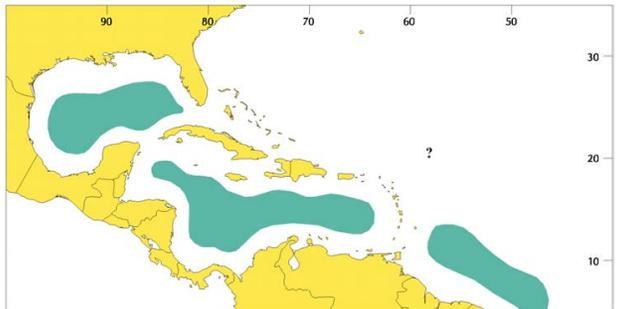
Diagnostic characters: Suckers in 2 series. Ink sac absent. **Ligula of hectocotylus short (4 to 15% hectocotylied arm length), narrow; arms long (2.5 to 6 times mantle length). Erectile supraocular cirri absent; skin smooth.** Gill filaments 7 or 8 per outer demibranch. **Colour:** not distinctive.

Size: To 7 cm mantle length.

Habitat, biology, and fisheries: A deep-living species occurring between 400 and 750 m depth, perhaps deeper, on mud bottoms.

Distribution: Gulf of Mexico, Caribbean Sea, tropical Atlantic Ocean south to 10°S.

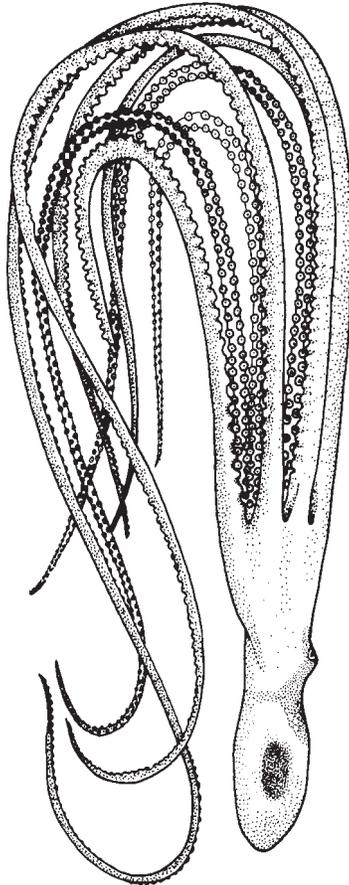
Remarks: Taxonomy of the genus *Benthoctopus* is particularly confused. Many species have been described, including almost all bathyal and abyssal octopods with biserial suckers. Because of the likelihood of convergent evolutionary loss of character states in the deep-sea benthos, relationships among these forms lumped together as *Benthoctopus* are uncertain. Furthermore, many of the species are poorly characterized and their type specimens are either in poor condition or missing.



***Euaxoctopus pillsburyae* Voss, 1975**

Frequent synonyms / misidentifications: None / *Macrotritopus defilippi* Verany, 1851.

FAO names: En - Map octopod; Fr - Poulpe lierre; Sp - Pulpo lampazo.

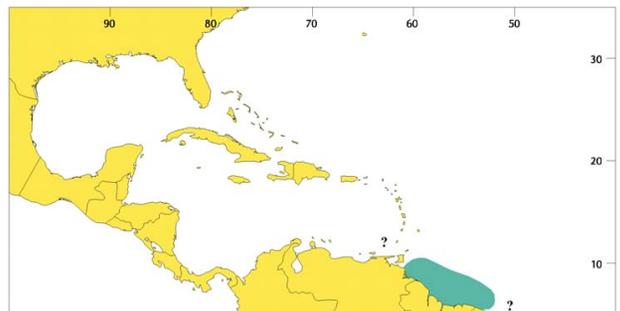


Diagnostic characters: Suckers in 2 series. Funnel organ W-shaped. Ink sac present. **Pair of dark 'eye spots' present on dorsolateral mantle**; no ocelli between eye and bases of lateral arms. **Arms extremely long** (about 90% of total length), easily autotomized; **ventral arms longer than lateral**; dorsal arms usually longest but not particularly stouter than other arms. Seven gill lamellae per outer demibranch. **Colour:** not distinctive.

Size: About 3 cm mantle length, total length to 20 cm.

Habitat, biology, and fisheries: Found at depths of 20 to 60 m on continental shelf.

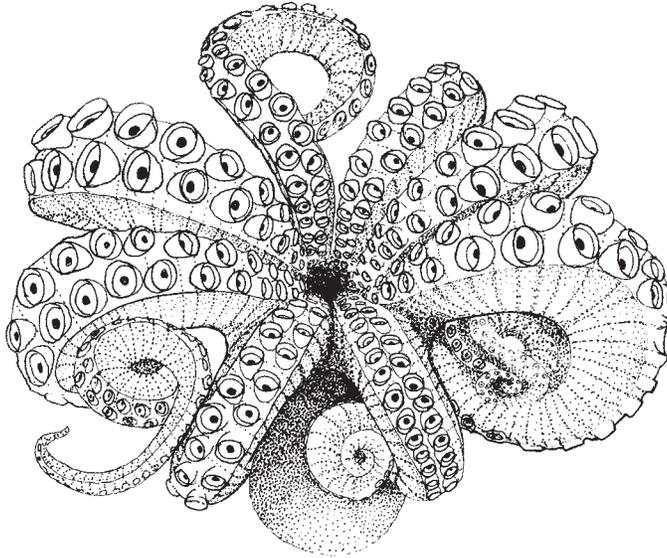
Distribution: Southern Caribbean Sea and coast of Guyanas.



Octopus briareus Robson, 1929

Frequent synonyms / misidentifications: None / *Octopus vulgaris* (Cuvier, 1797), *Octopus burryi* Voss, 1850.

FAO names: **En** - Caribbean reef octopus; **Fr** - Poulpe ris; **Sp** - Pulpo de arricife.



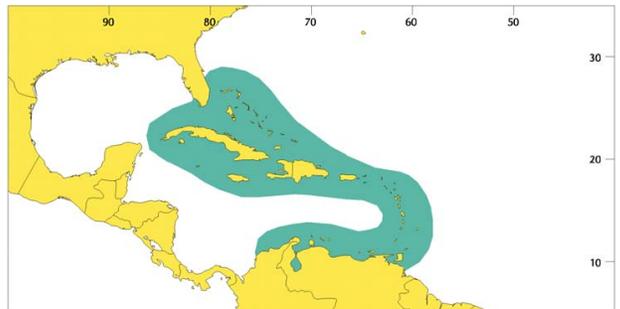
Diagnostic characters: Suckers in 2 series. Structures on dorsal surfaces of mantle, head, arms not star-shaped cartilaginous tubercles. Funnel organ W-shaped. Ink sac present. No ocelli between eye and bases of lateral arms. Gill lamellae 6 to 8 per outer demibranch. Mantle opening wide. **Dorsal arms shortest; both dorsolateral and ventrolateral arms much longer and stouter than ventral or dorsal arms.** Medium-sized adults (10 to 12 cm mantle length). **Colour:** not distinctive.

Size: To 12 cm mantle length. Total length to 100 cm.

Habitat, biology, and fisheries: Occurs in very shallow, warm waters of coral reefs, rocky and sandy bottom and grass flats. Life span about 1 year; spawning season December to March; males die after mating, females die after brooding eggs (about 500 in small clusters). Hatchlings are large, benthic. Adults feed on crabs, shrimps, and molluscs. No large-scale commercial fisheries, but extensive local and subsistence fisheries throughout its range. Caught from holes by hooks on poles; speared over open bottom; trapped in clay pots. Used fresh for food and for bait.

Distribution: Warm waters of the western North Atlantic; southeastern USA, southern Gulf of Mexico, the Bahamas, Caribbean Islands and northern South America to Guyanas.

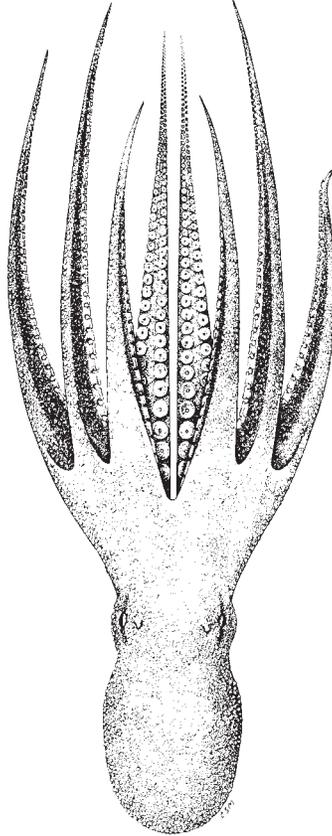
Remarks: This large-eyed, shallow-water octopus emerges at night to feed using its long arms and deep webs to enclose coral heads and areas of rubble. During the day this species hides in holes in corals, rocks, or sponges.



Octopus burryi Voss, 1950

Frequent synonyms / misidentifications: *Octopus vincenti* Pickford, 1955 / *Octopus vulgaris* Cuvier, 1797, *Octopus briareus* Robson, 1929.

FAO names: **En** - Caribbean armstripe octopod; **Fr** - Poulpe à rayures bleues; **Sp** - Pulpo granuloso.



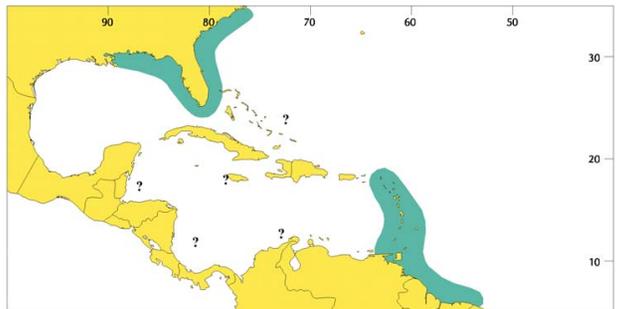
Diagnostic characters: Suckers in 2 series. Structures on dorsal surfaces of mantle, head, arms not star-shaped cartilaginous tubercles. Ink sac present. No ocelli between eye and bases of lateral arms. **Gill lamellae 8 to 11 per outer demibranch.** Funnel organ W-shaped. Mantle opening wide. **Dorsal arms shortest; ventral arms longer than lateral arms.** Dark stripe present along entire length of dorsal side of each arm. **Colour:** not distinctive.

Size: To 8 cm mantle length. Total length to 23 cm.

Habitat, biology, and fisheries: A continental-shelf species, associated with bottoms of sand, seagrass, seaweed, broken coral, and shells at depths of 10 to 200 m. It emerges mainly at dusk and dawn to feed.

Distribution: Cape Hatteras to northern Brazil. A similar, possibly identical species is found in tropical waters off west Africa.

Remarks: Live and well-fixed animals are most easily recognized by the stripe of dark brown or purple along the dorsal side of the arms at the bases of the suckers.

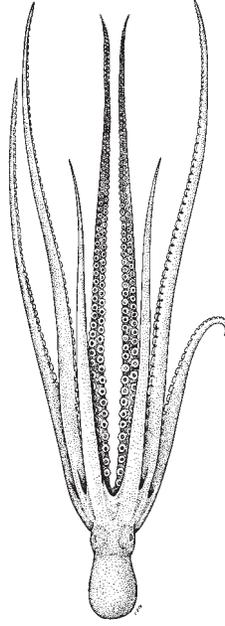


Octopus (Macrotritopus?) defilippi group

Nominal species included locally: *Octopus (Macrotritopus?) defilippi* Verany, 1851, *Macrotritopus* spp.

Frequent synonyms/misidentifications: See remarks below / *Euaxocephalus pillsburyae* Voss, 1975.

FAO names: **En** - Atlantic longarm octopod; **Fr** - Poulpe à longs bras; **Sp** - Pulpito patilargo.



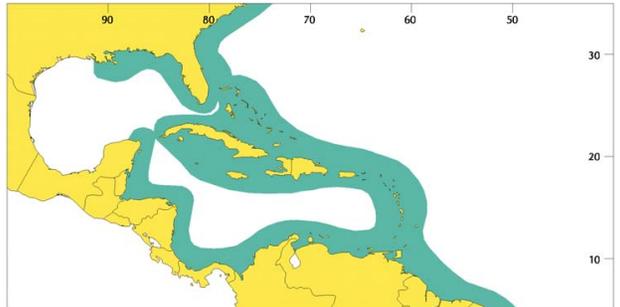
Diagnostic characters: Suckers in 2 series. Structures on dorsal surfaces of mantle, head, arms not star-shaped cartilaginous tubercles. Ink sac present. No ocelli between eye and bases of lateral arms. **Eleven gill lamellae per outer demibranch.** Funnel organ W-shaped. Mantle opening wide. **Dorsal arms shortest; lateral arms longer than ventral arms; non-hectocotylied ventrolateral arms distinctly longer than dorsolateral arms.** **Colour:** not distinctive.

Size: To 9 cm mantle length. Total length to about 40 cm.

Habitat, biology, and fisheries: Found on sandy to muddy bottoms, usually from 6 to 60 m depth but occasionally reported to 200 m. The very long arms can be autotomized. Females lay over 10 000 small eggs which hatch into planktonic paralarvae with distinctive elongate ventrolateral arms.

Distribution: In Western Central Atlantic Ocean, from Florida to Brazil, including Gulf of Mexico, Caribbean Sea, and Bahama Islands.

Remarks: *Octopus defilippi* Verany, 1851 was originally described from the Mediterranean Sea. Hanlon et al. (1980) showed that the unusual paralarvae, originally described as the genus *Macrotritopus* Grimpe, developed in the Caribbean into the species referred to *Octopus defilippi*. Voss and Toll (1998) and Voight (1998) refer to this species and its synonyms as *Macrotritopus defilippi*, with the annotation that Toll (MS) will place *O. defilippi* into the synonymy of *Macrotritopus*. This nomenclatural action has not yet been published. They further noted that the synonymy of the Caribbean species with the original Mediterranean species is not established. In the same publication as Voss and Toll (1998), Mangold (1998) and Sweeney and Roper (1998) list the species as *Octopus defilippi*. Other authors (e.g., Norman, 2000) refer to the Caribbean species as *Octopus 'defilippi'*.

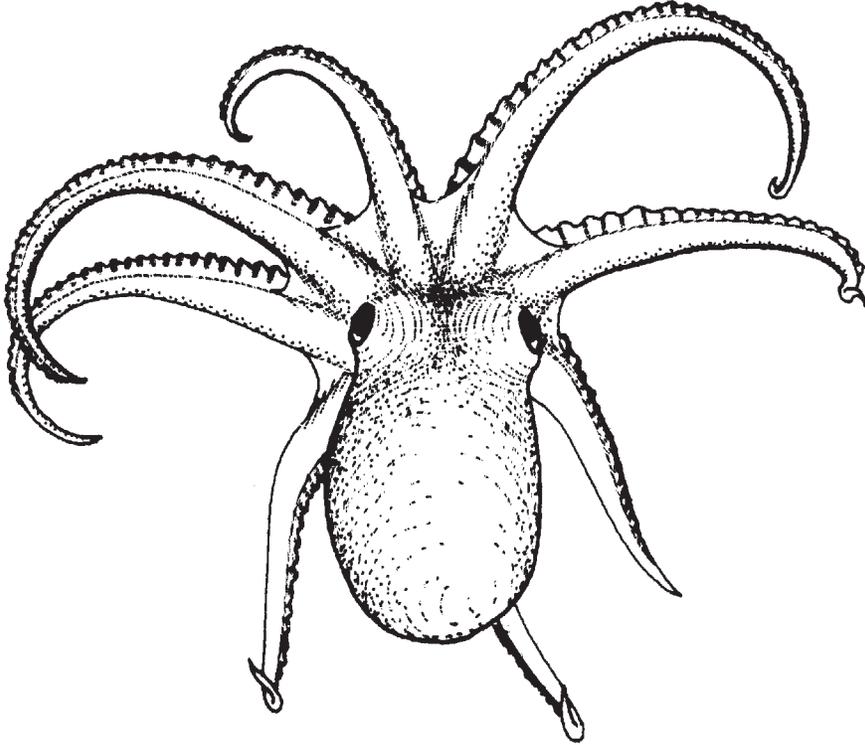


Octopus joubini group

Nominal species included locally: *Octopus joubini* Robson, 1929, *Octopus mercatoris* Adam, 1937 (? = "large-egg *Octopus joubini* form")

Frequent synonyms / misidentifications: See remarks below / *Octopus vulgaris* group.

FAO names: En - Atlantic pygmy octopod; Fr - Poulpe pigmé; Sp - Pulpo pigmeo.



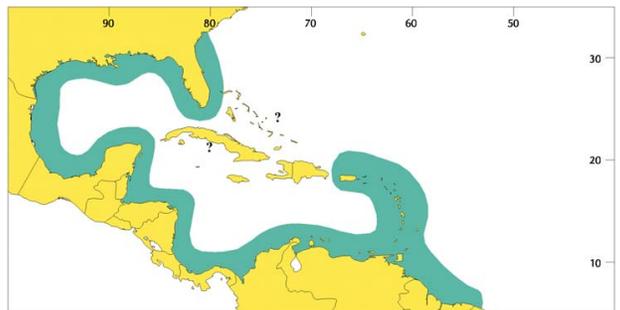
Diagnostic characters: Suckers in 2 series; structures on dorsal surfaces of mantle, head, arms (when present) not star-shaped cartilaginous tubercles. Ink sac present. No ocelli between eye and bases of lateral arms. **Gill lamellae 4 to 7 per outer demibranch.** Funnel organ W-shaped. **Arms subequal in length.** **Colour:** variable but lacking dramatic banding pattern.

Size: To 6 cm mantle length. Total length to 15 cm.

Habitat, biology, and fisheries: The 'large-egg' form (see remarks below) occurs in shallow water on sandy, coral and rubble bottoms to depths of about 80 m. Frequently hides in empty bivalve shells.

Distribution: Tropical western Atlantic and adjacent waters from Florida to the Guyanas.

Remarks: Two pygmy species with very similar adult morphology are present sympatrically in the area. The primary difference between the species is relative egg size, and therefore paralarval ecology. Although the name *Octopus joubini* has been widely used for the large-egg form, Forsythe and Toll (1992) argued that the name properly belongs to the small-egg form. According to Voss and Toll (1998), the large-egg form, for which the biology is much better known, may be attributable to *Octopus mercatoris*, but this has not yet been firmly established.

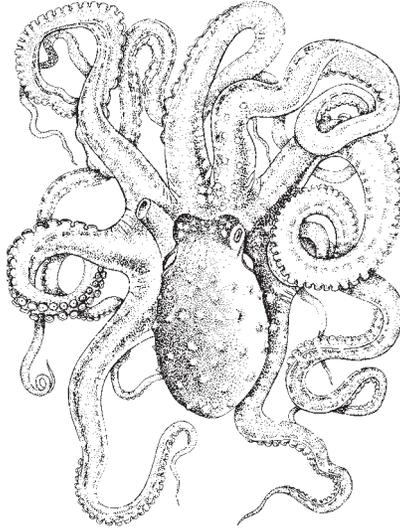


***Octopus (Callistoctopus?) macropus* group**

Nominal species included locally: *Octopus (Callistoctopus?) bermudensis* (Hoyle, 1885), *Octopus (Callistoctopus?) macropus* Risso, 1826.

Frequent synonyms / misidentifications: See remarks below / *Octopus vulgaris* Cuvier, 1797.

FAO names: **En** - Atlantic white-spotted octopod; **Fr** - Poulpe tacheté; **Sp** - Pulpo manchado.



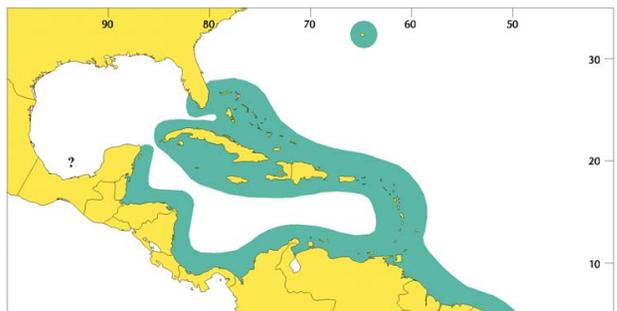
Diagnostic characters: Suckers in 2 series; structures on dorsal surfaces of mantle, head, arms not star-shaped cartilaginous tubercles. Funnel organ W-shaped. Ink sac present. **Dorsal arms clearly longer and stouter than lateral or ventral arms; lateral arms longer than ventral;** arms not easily autotomized. No ocelli between eye and bases of lateral arms. Gill lamellae 10 or 11 per outer demibranch. Mantle opening wide. **Colour:** typically with many white spots but no 'eye spots' on mantle.

Size: To 13 cm mantle length. Total length to 93 cm. Weight to 2 kg.

Habitat, biology, and fisheries: Found on sand and rubble bottoms; capable of burying in sand. Active at night. Feeds on crustaceans, molluscs, and occasionally fishes. Spawning season in western Atlantic from winter to early spring; hatchlings planktonic.

Distribution: In tropical western Atlantic region, throughout the Caribbean and northern coasts of South America; Bermuda. See remarks below.

Remarks: Whereas *Octopus macropus* was once reported to be distributed widely around the world (e.g., Roper et al., 1983), such widespread reports are now considered to represent a species complex. As with several other *Octopus* species groups in the Western Central Atlantic, *O. macropus* was originally described from the Mediterranean Sea; whether the western Atlantic form is conspecific has not yet been firmly established. A very similar species, *Octopus bermudensis*, was described from Bermuda but, as noted by Voss and Toll (1998), the status of this species in the the synonymy of *O. macropus* is not certain. Voss and Toll (1998) and Voight (1998) listed *O. macropus* and its presumed synonyms as belonging to the genus *Callistoctopus*, but in the same publication Mangold (1998) and Sweeney and Roper (1998) retained these white-spotted octopods within the genus *Octopus*. Voss and Toll (1998:461) stated that "Toll (MS) will place *O. macropus* and *O. bermudensis* into *Callistoctopus*." That nomenclatural action has not yet been published.

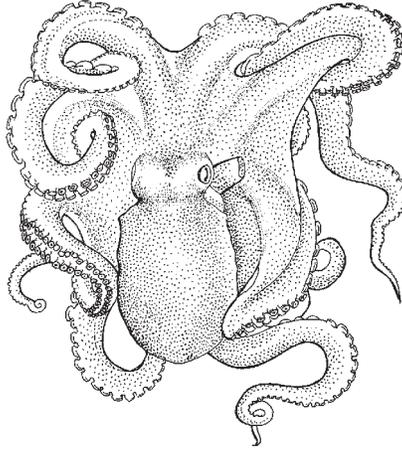


***Octopus cf. vulgaris* group**

Nominal species included locally: *Octopus americanus* Orbigny, 1842 in de la Sagra, 1838-1857:Atlas [1842], *Octopus carolinensis* Verrill, 1884, *Octopus occidentalis* Steenstrup in Hoyle, 1886.

Frequent synonyms / misidentifications: See remarks below / *Octopus briareus* Robson, 1929; *Octopus burryi* Voss, 1950.

FAO names: **En** - Common octopus; **Fr** - Pieuvre; **Sp** - Pulpo común.



Diagnostic characters: Suckers in 2 series. Structures on dorsal surfaces of mantle, head, arms (when present) not star-shaped cartilaginous tubercles. Funnel organ W-shaped. Ink sac present. No ocelli between eye and bases of lateral arms. **Gill lamellae 9 to 11 per outer demibranch.** Mantle opening wide. **Dorsal arms shortest; lateral arms longer than ventral arms; ventrolateral arms only slightly longer than dorsolateral arms.** Character states to distinguish among western Atlantic species in this group await publication of redescrptions (see remarks below). **Colour:** not distinctive.

Size: To 20 cm mantle length. Total length to 1 m. Weight to 10 kg.

Habitat, biology, and fisheries: Continental shelf species found in a variety of habitats, including reefs, rocks and grass beds to depths of 200 m. Although the biology of Mediterranean *Octopus vulgaris* is quite well known, details of the biology of the western Atlantic species await resolution of the species status of the various nominal groups.

Distribution: In western Atlantic Ocean from Connecticut to southern Brazil (very rare north of Cape Hatteras), including Caribbean Sea and Gulf of Mexico.

Remarks: Although *Octopus vulgaris* has been reported to be widely distributed around the world (e.g., Roper et al., 1983), cephalopod systematists have long known that these reports represent a species complex. Unfortunately, the relationships among the various populations within this complex have not yet been resolved. Norman (2000) stated that the common octopus in the western Atlantic Ocean is the most likely of the many populations worldwide to be closest to the true Mediterranean *O. vulgaris*. Voss and Toll (1998) considered *O. carolinensis* to be distinct from *O. vulgaris*, and *O. occidentalis* tentatively to be distinct. They stated that R. Toll is redescrbing *O. carolinensis*, but the redescription has not yet been published. Although Voss and Toll (1998) considered *O. americanus* Baker in Denys de Montfort (but not *O. vulgaris americanus* Orbigny) to be *nomen dubium*, they stated that (p. 460) "If the western Atlantic Ocean 'form' of *O. vulgaris* is later shown to be a distinct species...the name *O. americanus* is available pursuant to selection of a neotype..." However, the name *americanus* Baker in Denys de Montfort is not a Linnaean binomial (M.J. Sweeney, personal communication). Therefore, if the western Atlantic *O. 'vulgaris'* is indeed distinct at the species level from Mediterranean *O. vulgaris*, then *O. americanus* Orbigny is an available name for the western Atlantic species.

