

**Cephalopod species captured by deepwater exploratory fishing off New England.**

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**ABSTRACT.**—Difficult economic conditions for New England's commercial fishing fleet have lead to a search for new resources. Federal resources have been used to subsidize exploratory trawling beyond the edge of the continental shelf by refitted New England fishing vessels. Potential targets include deepwater species of fishes, decapod crustaceans, and cephalopods. The first eight cruises of the F/V CONTENDER captured 19 species of cephalopods in 13 families, including 4 octopods, 12 oegopsid squids, 1 myopsid squid, and 2 sepiolids. One additional species of oegopsid squid was collected by jigging from F/V PERSERVERENCE.

**Keywords:** cephalopod, squid, octopod, exploratory trawling, deep-water fishing, continental slope.

**Introduction**

To determine the feasibility of commercial fishing in deep water off New England (northeast USA), a series of trawling cruises by F/V CONTENDER was supported with funds from the Saltonstall/Kennedy (S-K) grant program. Cephalopods were among the potential resources of interest. The S-K program also supported experimental jigging for squid by F/V PERSERVERENCE. We report here on the cephalopod species captured during this work.

**Materials and Methods**

Representative cephalopod specimens were retained from the trawl samples collected during the eight CONTENDER cruises. Additional specimens resulted from use of squid-jigging machines on two PERSERVERENCE cruises. The specimens were frozen aboard ship and then transported to the Northeast Fisheries Science Center. There, they were thawed, fixed in formalin, and then sent to the National Museum of Natural History for identification.

**Results**

The following species were identified from specimens collected during the trawling:

**Octopoda Incirrata**

**Octopodidae**

*Bathypolypus arcticus*

*Graneledone verrucosa*

**Alloposidae**

*Alloposus mollis* (=Haliphron atlanticus)

Octopoda Cirrata

Stauroteuthidae

*Stauroteuthis syrtensis*

Decapoda Oegopsida

Enoploteuthidae

*Abralia veranyi*

Gonatidae

*Gonatus fabricii*

Histioteuthidae

*Histioteuthis bonellii*

*Histioteuthis (eltaninae?)*

*Histioteuthis reversa*

*Histioteuthis* sp.

Ommastrephidae

*Illex illecebrosus*

*Ornithoteuthis antillarum*

Mastigoteuthidae

*Mastigoteuthis magna*

Octopoteuthidae

*Octopoteuthis megaptera*

Pholidoteuthidae

*Pholidoteuthis adami*

Cranchiidae

*Teuthowenia megalops*

Decapoda Myopsida

Loliginidae

*Loligo pealeii*

Decapoda Sepioidea

Sepiolidae

*Rossia megaptera*

*Stoloteuthis leucoptera*

An additional species of ommastrephid squid, *Ommastrephes bartramii*, was caught by jigging.

Discussion

*Ommastrephes bartramii* is the only species with real potential for future expanded exploitation. It is commercially fished in the North Pacific, and the specimens caught by jigging were large and suitable for market. Of the species collected by trawling, those with the greatest commercial potential (*I. illecebrosus* and *L. pealeii*) already are exploited. *Gonatus fabricii* is an Arctic/Boreal species which could have commercial potential if sufficient concentrations could be located. *Histioteuthis bonellii* is a large squid that was encountered fairly commonly, but its tissues are ammoniacal and thus not suitable for human consumption. Another large squid, *P. adami*, is uncommon and its flesh lacks firmness. Other squid species are very small (e.g., *A. veranyi* and the sepiolids), or ammoniacal. The octopod *G. verrucosa* is large and muscular and has been reported in Canadian fish markets. It is the only octopod collected that has some commercial potential.