Antoni Quetglas, Francesc Ordines, María González and Ignacio Franco, (2009). Life history of the bathyal octopus *Pteroctopus tetracirrhus* (Mollusca, Cephalopoda) in the Mediterranean Sea. Deep Sea Research Part I: Oceanographic Research Papers Volume 56, Issue 8, August 2009, Pages: 1379-1390.

Abstract: The life cycle of the deep-sea octopus *Pteroctopus tetracirrhus* was studied from monthly samples obtained throughout the year in different areas of the western Mediterranean (mainly around the Balearic Islands and along the coast of the Iberian Peninsula). A total of 373 individuals (205 females, 168 males) were analyzed; females ranged from 4.5 to 14.0 cm mantle length (ML) and males from 4.5 to 11.5 cm ML. There were few small-sized octopuses (minor then 7 cm ML) in the samples, which might indicate that these individuals inhabit rocky grounds that are not accessible to trawlers or waters deeper than the maximum depth sampled (800 m). The species occurred more frequently around the Balearic Islands than along the Iberian Peninsula as they appeared in 20% and 7%, respectively, of the hauls in these areas. The octopus inhabits the lower continental shelf and upper slope in both areas, primarily between 200 and 500 m depth. Modal lengths were followed from autumn, when recruits were caught by trawlers, to summer, when reproduction took place. Females grew from 8 to 10 cm ML from winter to spring, but this modal size did not increase further in summer; males grew from 7 to 9 cm ML from winter to spring. The total disappearance of large individuals after summer suggests a life cycle lasting a single year. The evolution of the monthly mean sizes showed that the growth was best described by log-linear functions in both sexes. The length at first maturity was clearly higher in females (12 cm ML) than in males (8 cm ML). A total of 30 different prey items, belonging to four major taxonomic groups (crustaceans, osteichthyes, cephalopods and gastropods), were identified in the stomach contents. The diet of the octopus was based on crustaceans and teleosts, which accounted for 75% and 23% of the prey items, respectively. Cephalopods and gastropods were accessory prey as they only represented 1.6% and 0.7%, respectively, of the total. The octopus showed a marked preference for the benthic fish Symphurus nigrescens and the endobenthic crustacean Alpheus glaber. The bathymetric distribution of P. tetracirrhus coincides with those of these two main prey, which suggests that the distribution of the octopus might be strongly linked to its trophic resources.

Keywords: *Pteroctopus tetracirrhus*; Incirrate octopods; Deep sea; Life history; Western Mediterranean