

**SIZE AND AGE AT SEXUAL MATURITY AND ANNUAL GAMETOGENIC CYCLE IN OCEAN QUAHOG, *ARCTICA ISLANDICA* (LINNAEUS, 1767), OFF NORTH-WEST ICELAND**

Thorarinsdottir, Gudrun G.

*Marine Research Institute, PO.Box 1390, Skulagata 4,  
121 Reykjavik, Iceland*

Ocean quahogs, *Arctica islandica*, were collected from near shore populations off north-west Iceland for study of their sexual maturation and gametogenic cycle. In February 1994, two hundred and six quahogs 24-119 mm in length were sampled for determination of developmental stages relative to size, age and sex. Sexual differentiation was evident in 200 individuals, 17 were in the intermediate stage and 183 fully mature. On the basis of annual internal growth banding in the shells of the specimens the age ranged between 7-32 years in the intermediate stage and the individuals were from 24-68 mm in shell length. The smallest and youngest individuals that could be sexed were males. The smallest fully mature male was 36 mm in length but the youngest aged individual was 10 years old (49 mm length). The youngest fully mature female was 44 mm and 13 years old. Age and size at maturity showed a wide range and may be dependent on growth rate and environmental conditions. Sex ratio between males and females were examined relative to size in 200 quahogs. The male to female (M:F) ratio varied between size classes, with males dominating in the smallest size classes, which may be related to their earlier development of germinal cells. At a length of 40 mm or more the females dominated in all size classes except 65-69 mm (1.4:1) and 70-74 mm (1:1). A total of 350 adult quahogs were sampled at regular intervals over a year (1998) to determine the gametogenic cycle. Morphologically ripe specimens, as inferred from histological examination, were present all the year around but predominated from April to July. A prolonged spawning period is indicated, spawning being most intense from June through August. Partially spawned individuals were found all the year around but most of the population was in this condition from August through January when the abundance of early active and late active specimens rose sharply.