D-55 Age determination and growth of eel *Anguilla bicolor bicolor* McClelland in the Bolgoda lagoon

H Rupasinghe, M V E Attygalle
(*Dept. of Zoology, Univ. of Sri Jayewardenepura, Nugegoda*)

Age determination in population biology is a basic requirement within samples of the species being studied. This study was focused on whether periodic changes occur in growth of eel *Anguilla bicolor bicolor* McClelland in the Bolgoda lagoon, based on otolith annual ring formation in each size group.

Eels at all stages were collected from 4 stations of the Boigoda lagoon. Length (mm) and weight (g) of each were measured. Dissecting out the skull, sacculus otoliths were isolated in 95% ethanol, stored dry for 24 h and weighed (0.1mg). Otoliths were ground to reduce the thickness, so that they became more transparent. Then they were mounted on a glass slide in glycerin and burnt on a flame. Prepared otoliths were observed with a binocular microscope (x 40

magnification) and the lengths, widths, and ring widths were measured. Stained sacculus otoliths show a regular pattern of hyaline and opaque zones. Migration of glass - eels from the sea to the Bolgoda lagoon takes place around October - January. They were 65 - 129 mm and had 340 - 460 ìm otolith radius. Those present were the smallest group considered to be one year old, that seem to have completed the first hyaline zone, but not the second opaque zone.

Migration of Silver eels occurs during the period May-July. Their mean total length was 730 mm, mean otolith radius was 2625 ìm, and estimated age was 6-7 years. Otolith outer rings are close together while that of the inner zones are broad indicating higher growth frequency of juveniles (less than 3 years old) compared to adults.

During the period November - February, eels stop growing or grow very little, March - October is the growing season.

Financial assistance by the University of Sri Jayewardenepura is acknowledged.