GROWTH CHECKS ON THE SCALE OF *LABEO DUSSUMIERI* (VAL) (PISCES: CYPRINIDAE)

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The common labeo, *Labeo dussumieri* (Val), an indigenous carp found in the lowland tanks and rivers in Sri Lanka, like many other flood plain fish (Lowe — McConnell, 1975) undergo a 'Spawning migration' into the villus at the onset of flooding of the Mahaweli Ganga.

Scales collected from labeo caught within the Mahaweli river systems exhibited growth check patterns. Seasonal changes in the overall growth of fish are therefore reflected by changes in the rate of scale growth producing the growth checks on the scale surface.

The relationship between radius of a ring and its position within a scale was observed to be somewhat uniform. This suggested that the rings had been formed at regular intervals in time and could possibly be annuli, formed as a consequence of the seasonal fluctuations in the water levels of the Mahaweli.

On assumption that the growth checks were annuli, various relationships were investigated to ascertain whether the data conformed to previous studies on temperate species.

The growth rates at various stages of the fish's life was estimated by correlating the radii of of the rings with the fork-length by the method of 'back-calculation' (Tesch, 1971).

The Bertalanffy parameters (L_∞, K. t_o), L_∞ — the maximum size towards which the length of the fish is tending, K — a measure of the rate at which length of the fish is tending, K — a measure of the rate at which length approaches L_∞, to — a parameter indicating the (hypothetical) time at which the fish would have been zero size if it had always grown according to the von Bertalanffy growth equation, were estimated. The first two parameters were estimated by a Ford - Walford plot of $l_{(t+1)}$ vs. l_t . The parameter t_o was estimated by a $\log_e (L_\infty - l_t)$ on t plot.

The von Bertalanffy's growth equation was found to adequately describe the growth data obtained from scale studies.

References:

1. LOWE-McCONNEL, R. H. (1975). 'Fish communities in tropical freshwaters'. London and New York: Longman. 337 pp.
2. TESCH, F. W. (1971). Age and growth. IN: 'Methods of assessment of fish productions in freshwaters' (W. E. Ricker ed.), IBP Handbook No. 3. London: Blackwell. pp 98 - 130.