Field experiments advances for sclerochronology studies in Peruvian mollusks

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The current research, a scleroclimatological approach, is orientated to the shell growth study on three molluscs: *Argopecten purpuratus*, *Concholepas concholepas* and *Trachycardium procerum* at two comparative zones of the Peruvian coast. The research objetive is *"evaluate the temperature variability influence on the mollusk shells microstructural growth patterns"* and the aim of the research is to enhance the understanding of mollusks temperature growth adaptative mechanisms at peruvian coast and their connections with survival and biogeography process.

In the first phase field experiment in *C. Concholepas* at Pta Picata (southern Peru) were conducted in 511 calcein marked organims from july 2005 to may 2006, the recapture was 36 % (184 organisms) with peaks of recapture of 80 organisms in july and october (2005), the number of dead organisms found was 15 (3 %). The shell samples were obtained from 9 (2 %) sacrified organisms and the best growth increment (length) in sacrified samples was 15 mm. (may 27 to july 07, 2005), the longest time of growth was 6 months and the calcein marks were between 1 or 2 times. The maximum and minimum temperatures peaks at 13.5m depth were 12.81 °C and 20.29 °C (range of 7.48 °C) but up to 3.68 °C degrees of differences (in December 12, 2005) was observed between 13.5m and 17.5m depth.

In *T. Procerum* the field experiment were conducted at Lagunillas (central Peru) in 129 calcein marked organism from may 2005 to june 2006 and the best shell growth rate (length) was 0.0275 mm/day (increment of 2.47 mm from june 08 to november 15, 2005) but the rate decrease up to 0.0061 mm/day between march 26 to june 13. A range of 7.95 °C temperature variability (max.: 22.47 °C in december 27, min.: 14.52 °C in september 19) was observed at Lagunillas. The shell samples were obtained from 10 sacrified organisms.

In Parachique (northern Peru) 93 *T. procerum* and 296 *A. purpuratus* calcein marked organisms were used in field experiments from october (*T. Procerum*) and november (*A. purpuratus*) to march; the best growth increment in *T. procerum* was 4mm (october 13 to november 23, 2005) and in *A. purpuratus* 24 mm (november 24 to march 9, 2005). The maximum and minimum temperatures peaks in Parachique were 26.72 (february 16, 2006) and 15.76°C (december 12, 2006) respectively with a temperature variability range of 10.96 °C.

High mortality in *T. procerum* (42 – 94 % at Lagunillas and 55-79 % at Parachique) would be associated also to predation and local conditions of shallow bays as a billow and current effects.

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