

Supplementary Information: color analysis

Results of color analysis on microscope images and high-resolution (6400 dpi) color scans of the polished outer shell surfaces of *T. sanchezi*. With A) showing brightness (L^*) data extracted from microscope images of the part of the shell showing well-expressed seasonal light and dark cycles (**Figure 1D**). Statistically significant ($p < 0.05$) tidal cyclicity with a period of 0.6 mm (**B**) and annual cyclicity with a period of 15 mm (**C**) is observed in brightness records plotted in **A**. Plot **D** shows brightness (L^*), redness (a^*) and blueness (b^*) data extracted from high-resolution color scans of the entire shell surface. These records all contain statistically significant ($p < 0.05$) periodicity in the period of seasonality (13-15 mm; see **F**). **E** shows a color scan of the shell surface (see also **Figure 1**) indicating the areas where color records were measured. All color records were obtained from scans and microscope images using the open source image processing software package ImageJ and processed using R (R core team, 2008).

