Abstract
We measured the vertical and seasonal distribution of picoplankton (0.22 µm) and nanoplankton (220 µm) in the photic layer of Cuban southern oceanic and coastal waters. The concentration of the different fractions was estimated by epifluorescence microscopy. Heterotrophic components from the different fractions showed higher vertical stratification in the oceanic station in comparison to the coastal one. The autotrophic components showed an irregular vertical distribution pattern, both in coastal and oceanic stations. In all the analyzed stations, the heterotrophic bacteria showed an inverse correlation with the autotrophic (r= -0.98), and the heterotrophic nanoplankton (r= -0.96). Auto and heterotrophic nanoplankton probably regulate bacteria abundance by predation, although autotrophic nanoplankton may represent a source of organic matter for microorganisms. Rev. Biol. Trop. 55 (2): 449-457. Epub 2007 June, 29.

Keywords
Bacterioplankton, picoplankton, nanoplankton, vertical-seasonal distribution, oceanic waters, Cuba.