1) Lardies MA, Mu oz JL, Paschke K & Bozinovic F (2010) Latitudinal variation in the aerial aquatic ratio of oxygen consumption of a supratidal high rocky-shore crab. *Marine Ecology: an evolutionary perspective*: doi:10.1111/j.1439-0485.2010.00408.x

Abstract. The colonisation of the terrestrial environment by crustaceans is more apparent in tropical latitudes because of the high diversity of semi-terrestrial and terrestrial crabs. However, in temperate regions there are also great numbers of crustaceans that inhabit ecological niches at the water – air interface. Grapsidae crabs (Decapoda) are especially important in studies of water-to-land transition as the family contains species occupying the intertidal and adjacent regions. A way to evaluate the ability of intertidal invertebrates to breathe air is to measure the aerial aquatic oxygen consumption ratio. The objective of this study was to test the effect of thermal variation on the aquatic and aerial metabolism. We selected as study model the decapoda crab *Cyclograpsus cinereus* Dana and utilized five populations of the species spread over 2000 km along the Chilean coast. To determine the compensation capacity in respiration with respect to latitude, we evaluated metabolic rate at the same temperature in a common garden design in the laboratory, to examine the extent to which variation in crab physiology is environmentally determined. Whereas in our study, mb (body mass) varied significantly with latitude, the difference in mass-independent metabolism both in air and water persisted, indicating that observed differences in MR (Metabolic Rate) were not an effect of differences in body size. We demonstrated that *C. cinereus* is able to breath oxygen from air and water as expected for an amphibious crab. Almost all the studied populations of *C. cinereus* show a aerial aquatic metabolism ratio near 1. The pattern found indicates an increase in metabolic rate, both aerial and aquatic, in low latitudes and therefore does not support the latitudinal compensation hypothesis for temperate habitats. Finally, these kinds of studies are required to make the necessary link between ecological physiology and macroecology and to help develop a global understanding of organismal function in marine systems.