

Thermal acclimation, maximum metabolic rate, and nonshivering thermogenesis of *Phyllotis xanthopygus* (Rodentia) in the Andes mountains

Nespolo, Roberto F.

Opazo, Juan C.

Rosenmann, Mario

Bozinovic, Francisco

We determined non-shivering thermogenesis (NST) and maximum metabolic rate (MMR) as functions of thermal acclimation in a small mammal species in a seasonal environment. We studied the rodent *Phyllotis xanthopygus* (Muridae) living in the cool to cold climate of the high Andean Plateau of northern Chile. As expected, NST and MMR were constantly higher in cool-acclimated individuals. Nevertheless, the observed differences in shivering thermogenesis (ST) as a result of temperature acclimation (>200%) exceeded our expectations. The large contributions of ST was due to a 94% increase in MMR while a 49% of increased in NST. Thus, changes in ST in *P. xanthopygus* account for most of the metabolic plasticity and thermogenic capability that enables this species to cope with thermal variations in the Andean environment.