



The role of tetrapod trace fossils in continental ichnofacies models

V. KRAPOVICKAS¹, M. G. MÁNGANO² and C.A. MARSICANO¹

The ichnofacies model provides the main framework to understand the paleoenvironmental significance of trace fossils. Traditionally focused on invertebrate trace fossil, the ichnofacies model has only recently expanded to include tetrapod footprints. The purpose of this work is to discuss the role of tetrapod footprints in the development of continental ichnofacies models, as well as in the reconstruction of sedimentary paleoenvironments. An integrative perspective was employed to tackle this problem, taking into account depositional environments, as well as tetrapod and invertebrate trace-fossil data. The case studies that constitute the empiric base of this research project are based on trace-fossil associations studied in different lithostratigraphic units of Argentina, complemented with other ichnologic associations reported elsewhere. Proposed models on tetrapod ichnofacies have established a relationship between fossil footprint associations and sedimentary paleoenvironments, but no insight on the controlling environmental parameters has been provided. However, available data suggest that the distribution of tetrapod footprints and invertebrate trace fossils are not controlled by the same paleoenvironmental factors. Contrary to local environmental parameters involved in the distribution of invertebrate trace fossils, the distribution of tetrapod trace fossils in terrestrial environments seems to be more related to key environmental regional-scale parameters, such as climate and resource availability.

1 CONICET. Departamento de Ciencias Geológicas, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires (UBA), Ciudad Universitaria, Pabellón 2, (C1428EHA) Buenos Aires, Argentina. vkrapovickas@gl.fcen.uba.ar, claumar@gl.fcen.uba.ar

2 Department of Geological Sciences, University of Saskatchewan, Saskatoon, SKS7N 5E2, Canada. gabriela.mangano@usask.ca