Morphologic changes of Paleozoic and Mesozoic insect faunas from Argentina and Brazil: paleoecologic aspects

L. VAZ TASSI[1], R. G. MARTINS-NETO[2] and M. B. LARA[1]

During the Permian-Triassic transition, the insect faunas from all over the world suffered changes related to their diversity and abundance, as well as to their morphometric patterns. The data were obtained from the original descriptions of each species. The total size of wing was considered, whereas the small fragments without estimative total size were not taken into account. The morphometric analysis of the recorded species of the Carboniferous- Permian-Triassic entomofauna from Argentina and Brazil shows a morphologic change that reflects a general trend of body size reduction. The groups that showed an inverse trend were Mecopteroidea and Coleoptera. The statistical analysis demonstrated a decreasing trend of the wing size of Paleoptera, Orthopteroidea, Blattopteromorpha and Hemipteroidea from Paleozoic to Mesozoic. Decreasing or increasing trends could be directly related with climate changes occurred during Permian-Triassic times. These changes could have caused ecologic nanism or gigantism, connected to food availability or other synergetic factors. A high gradient of temperature provides ideal conditions to a big rate of insect proliferation, supporting its diversity, while the extinctions are associated to environmental catastrophic events. At first sight, it could be interpreted that the trend of decreasing insect dimensions reflects the high levels of environmental stress already documented in the literature. However, alochronic speciation, as a result of ecologic nanism or gigantism, should also be considered when the real diversity of Permian-Triassic boundary insects is analysed.

Contribución a los proyectos PI-SECyT-UNNE 75/07 y PICTO-UNNE 226.

1 Área Paleontología, Centro de Ecología Aplicada del Litoral (CECOAL), Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), CC. 128, (3400) Corrientes, Argentina. larinhatassi@hotmail.com
2 Universidade Federal do Ceará, UFC, Campus Cariri, Sociedade Brasileira de Paleoartropodologia, SBPr, Brazil. martinsneto@terra.com.br