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GONDWANAN PERSPECTIVES: MESOZOIC AND CENOZOIC MICROPALEONTOLOGY OF SOUTH AMERICA, PROGRESSES AND APPLICATIONS

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CRETACEOUS MICROFOSSILS FROM COLOMBIA

Foraminifera, nannofossils, and ostracods record a gradual shallowing trend in the Umir Formation during the Maastrichtian.

EOCENE CORRELATION ADJACENT TO THE DRAKE PASSAGE

Dinoflagellates allow correlation of Eocene units in the Southwestern Atlantic based on compositional data analysis.

PRODUCTIVITY IN THE PATAGONIAN MARGIN DURING MIS3

Micropaleontological core analyses of the Patagonian slope reveal significant paleoceanographic changes in the Brazil Malvinas Confluence Zone.

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IT HAS BEEN 21 YEARS since the first symposium on Micropaleontology of South America and Antarctica was held in Argentina, a meeting that has continued five times, where new results have been presented, generating fruitful academic exchange between Argentine and foreign micropaleontologists.

The last symposium was held in the framework of the *XII Argentinian Paleontological Association Congress (XII CAPA2021)* during the Pandemic, in November 2021 in the city of Buenos Aires, under virtual modality, favoring the discussion of the new research, and had a large attendance of young Argentinean scientists and foreign colleagues. On that occasion, seven oral contributions and eleven posters were presented, with authors from Argentina, Colombia, Brazil, Ecuador, and Perú and the topics considered included research in systematic paleontology, integrated biostratigraphy, paleoenvironmental, and paleoceanographic analysis using microfossils such as foraminifera, ostracods, calcareous nannofossils, palynomorphs, and diatoms, among others, as proxy data.

The editors are grateful for the invitation and collaboration of Dr. Dario G. Lazo to publish some of the research presented at the *XII CAPA2021*. We also express our gratitude to the national and foreign reviewers, who strongly improved the original manuscripts.

This special issue *Gondwana Perspectives* of Ameghiniana, aims to provide updates on the subject developed by South American micropaleontologists. It consists of seven articles written by an interdisciplinary group of authors who presented their research advances. The index follows a stratigraphic order, and it is summarized below.

The first article written by *Perez Panera, J. P, Calvo Marcilese, L., Boggetti, D., Ottone, E., Cuello, J.*, and *Giampaoli, P. (this issue)* presents the micropaleontology carried out in four sections of the Pucará Group, northwestern Perú, revealing the presence of calcareous nannofossils from the Upper Triassic. These new results represent one of three known records outside the Tethyan Realm and provide independent biostratigraphic constraints for the Pucará Group.

The second article written by *Patarroyo, G., Kochhann, K. G. D, Guerra, R., Alegret, L., Ceolin, D.,* and *Torres, J. M. (this issue)* is based on micropaleontological (nannofossils, foraminifera, and ostracods) and geochemical analyses of a stratigraphic section comprising the Umir Formation and its lower stratigraphic contact with the La Luna Formation, in the middle Magdalena Valley, and their paleoenvironmental implications during the Maastrichtian. This paper represents a valuable interdisciplinary analysis of one stratigraphic section of the Upper Cretaceous of Colombia.

The third article by *Bedoya, E. L., Pérez Panera, J. P., Concheyro, A., Olivero, E., Gutierrez, C., and Torres Carbonell, P. J.* (this issue) analyzes the late Paleocene to middle Eocene calcareous nannofossils from Peninsula Mitre, Tierra del Fuego, Argentina, to allow a better age constraint for the investigated formations, and to correlate them with other surface and subsurface units of the Austral Basin.

The fourth article by *Rodriguez Amenábar, C., Guerstein, R.,*

Alperin, M., Daners, G., Casadío, S., and Rodríguez Raising, M. (this issue) compares different middle to upper Eocene sedimentary units of the Austral Basin and sites adjacent to the Drake Passage, establishing a high correlation between the dinoflagellate cyst assemblages considered to be Bartonian in age in the last proposed stratigraphic scheme.

The fifth article by *Allende Mosquera, A., Cuitiño, J., and Espinosa, M. (this issue)* describes the fossil diatoms and crysophyta stomatocysts assemblages from the shallow marine Gaiman Formation (lower Miocene) and the estuarine Puerto Madryn Formation (upper Miocene) of northeastern Patagonia, providing a source of complementary paleoenvironmental interpretation of those units.

The sixth article written by *Laprida, C., Albarracín, P., Romero, S., Martín, R. S., Isola, J., Kasten, S., and García Chapori, N. (this issue)* presents a micropaleontological analysis from the Patagonian slope that reveal paleoceanographic changes as an increase of the primary productivity in the Brazil Malvinas Confluence Zone during MIS3.

The last article, the seventh, written by *Garcia Chapori, N., Martin, R. S, Groeneveld, J., Albarracín, P., and Laprida, C. (this issue)* presents new Mg/Ca-temperature calibrations for the benthic genera *Uvigerina* and *Cibicidoides* from the Southwestern Atlantic and the Tropical Atlantic, allowing to perform bottom water temperature reconstructions.

This special issue Gondwana Perspectives, entitled **"Mesozoic and Cenozoic Micropaleontology of South America, progresses and applications",** provides an update on several topics of micropaleontology developed by South American researchers.

The issue focuses on classical micropaleontology, accurately defining relative ages and paleoenvironments, and attempts to introduce other valuable applications, such as paleoceanographic proxies.

Finally, we hope that by reading the chapters, our colleagues from abroad, unfamiliar with publications in Spanish, may have access to new relevant information on our South American sedimentary basins and may project future scientific collaborations.

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