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EDITOR'S NOTE

This Society for Phytolith Research Bulletin volume 2, issue 1, is the penultimate one before a complete editorial, graphic and support change. Its life would have been short!! The SPR editorial board and the the SPR board of directors are discussing changes for the future. A proposal will be presented to the General Assembly in 2011 in Denver.

This issue gathers the summaries of the papers presented at the joint 7th IMPR – 4th SMPR event organized by in Mar del Plata, Argentina, December 9-12 2008 By Margarita L. Osterrieth, Mariana Fernández Honaine, Natalia Borrelli, Maria Fernanda Alvarez, Verónica Bernava Laborde, Virginia Bernasconi, Adriana Lopez De Armentia Georgina Erra, Marco Madella and Débora Zurro.

ARTICLES

Phytolith analysis in limited paleoenvironmental contexts: aaa (arctic, alpine, or aquatic)

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Much of phytolith research of terrestrial paleoenvironments has focused on tropical or subtropical regions, in which C4 grasses and a few tropical families predominate producing diverse phytolith morphotypes. Ratios of C3/C4 morphotypes have been used to document regional or subcontinental trends in vegetation in mid-latitudes, e.g., in China or Great Plains of North America. However, in the high-latitude and high-altitude contexts the main phytolith producers are C3 grasses (primarily Festucoids) and sedges with limited diversity of morphotypes. Likewise, many lacustrine or riparian vegetation types worldwide are dominated by C3 grasses or sedges from a few subfamilies. Limited availability of modern analog collections from Arctic, alpine, or aquatic sites hamper paleoenvironmental reconstructions of the more extreme cooler environments, precisely those that we expect to have been more widespread during the late Pleistocene. I discuss potential for improved reconstructions of the Quaternary paleoenvironments with phytolith morphotypes from sites in Alaska (Arctic), Minnesota (aquatic), and the Caucasus (alpine) based on many years of research. Each of the study regions presents challenges and opportunities for further phytolith studies. Samples from central Alaska, for example, tend to be dominated by representatives of only a few genera of C3 grasses. Samples from aquatic vegetation in Minnesota have about a dozen common genera. The Caucasus alpine sites likewise have only a handful of genera of grasses. Because there are strong correlations between phytolith morphology at the genus level in Festucoid grasses, broad reconstructions of paleovegetation may be accomplished with limited modern collections, at least to the level of genus (botanical match). However, modern analogs from soils should not be regarded as genus-level specific, even if we may associate certain typical morphotypes as regionally diagnostic, because of sufficiently high redundancy. A more fruitful approach may be reconstructions based on sediment assemblages as a whole (modern analog match). In this case, however, we will not be able to get adequate matches for true non-analog communities that were common during the late Pleistocene, so a combination botanical-modern analog matching method may be advised.

Calcium oxalate crystals in *Geohintonia mexicana* (Cactaceae: Cactoideae)

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The Cactaceae family is native to the American continent, and the greatest diversity of species is distributed in arid and semiarid regions. The

of C_3 plants and perhaps C_4 plants ($\partial^{13}C$ of ~-23‰) around the wetland from ~28,000 to ~19,000 yr B.P. The significant increase in the sedimentation rate and algal spores from ~19,450 yr B.P. to ~ 19,000 yr B.P. indicates increasing humidity and probably the presence of a small lake in the study site. The lack of peat sedimentation during the Last Glacial Maximum, between the ages of 19,000 yr B.P. and 13,750 yr B.P. suggest an erosive process caused by high precipitation. The maintenance of tropical forest/savanna mosaic at Curucutu is explained by the overall sufficient moisture in coastal southern and southeastern Brazil. From ca. 10000 yr B.P. to ~1000 yr B.P. a higher frequency of arboreal elements and pteridophytes and lower contribution of terrestrial herbs and algae and the absence of aquatic plants suggest warmer climatic conditions than the previous climatic period. From ~19,000 to ~1000 yr B.P. more depleted $\partial^{13}C$ values (up to -27‰) indicated the predominance of C_3 plants. From ~1000 yr B.P. until the present the anthropogenic effect on arboreal vegetation cannot be discarded. These results are in strong agreement with recent developments in oxygen isotopic studies in speleothems of caves of southern and southeastern Brazil, which suggest humid conditions during the Last Glacial Maximum.

Interpreting content, context and manufacture from use-residues in ceramic vessels from Southern Argentinean puna

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Use-residue analysis from archaeological ceramic vessels is frequently directed to identify contents and to discuss functionality. Recently, Zucol, Brea and Mazzanti (2005) paid attention to different contamination sources for "use-residues", including ceramic and sedimentary matrix, and they proposed control sampling procedures. We agree with them and also, propose that residue analysis allows us to obtain specific information related to use, manufacture and context for archaeological artefacts. From an ample taphonomic point of view, this information can be understood not only in "contamination" terms, but also as genuine data regarding natural and cultural processes of formation and transformation of archaeological record. In this paper, we analyze use-residues from six containers recovered as complete or *in situ* broken vessels, in four partially contemporary archaeological contexts within Punta de la Peña 9 site, at Antofagasta de la Sierra, Catamarca (Southern Argentinean Puna). The vessels belong to the second part of the first millennium AD and comes from two burials -Structure 2, PP9.II (López Campeny 2001) and Structure 1, PP9.I (González Baroni *et al.* 2007)-, a multiple activity place -Structure 3, PP9.I (Babot *et al.* 2006)- and a ritual deposit -PP9.I (Babot *et al.* 2007). Our research design starts with a review of archaeological assemblages that are spatially related to vessels (plant macro-remains, hearts, etc.) and of integrity and dynamic of their contexts of provenience. On this base, we propose hypothesis about the presence of microfossils in use-residue samples, belonging to ceramic and sedimentary matrix as well as cultural and natural processes, both contemporaneous and postdepositational to the discard of vessels. Moreover, we follow Babot (2003, 2007) to establish cultural practices of plant processing -as an additional taphonomic factor- by analyzing starch grain damage and the whole microfossil assemblage. Finally, we carry out a dry and stratified sampling procedure for vessels (Babot 2004) to preserve provenance data for residues (base, body, neck, fresh fracture, macroscopic use residues, stains of probable postepositational origin, etc.). Results obtained allow us to identify aspects of use, manufacture and context for ceramic vessels from use-residue samples, on depending on their integrity and postdepositational history. Additionally, indicators of several cultural practices are recovered, that are directly or indirectly related to the use of vessels, such as processing procedures, burning of roofs and ritual disturb of deposits. As a corollary, we estate that it is possible to consider macrofossils labelled as "contamination", in a positive way, as information that goes far from the use of artefacts, to allow us to understand and cross-check cultural and natural processes of formation and transformation of archaeological record.

Phytolith assemblages and opal concentrations from modern soils differentiate temperate grassland vegetation of different types in an experimental study at Cedar Creek, Minnesota

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Many phytolith researchers assume that the phytoliths in modern soils reflect vegetation at the surface. We test this assumption and determine whether ecotonal boundaries in temperate grasslands can be delineated based on the silica record in the soil. We assess difference in phytolith concentration (percentage of dry soil weight) and diversity of morphotypes under controlled conditions of the Biodiversity II experiment (E120) at Cedar Creek Historical Natural Area, where