environmental assessment studies, mollusk samples from a tropical estuary (Pina Bay, Pernambuco, Brazil) were analyzed. The results show that some species concentrate some element relative to others, probably as a consequence of each species feeding habit. Even though there is no specific legislation regarding metal concentration in seafood in Brazil, the results show that metal concentrations do not exceed international limits, except for V, which exceeded the EPA risk level. Pina Bay is highly impacted by sewage discharges but the metal concentration in the mollusk populations do not seems to cause a threat to human consumption. The results also suggest that the semi-quantitative method could be used as a screening method in environmental impact assessment studies. — ( *May 24, 2002* ) .

**TECTONIC EVOLUTION OF THE ASUNCIÓN RIFT, EASTERN PARAGUAY**

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The Asunción Rift is an important tectonic feature of Mesozoic-Cenozoic age in eastern Paraguay. With a width between 25 and 40 km, this structure consists of three segments: the well-defined western segment with a NW-SE strike and extending over 90 km between Benjamin Aceval and Paraguarí; the central E-W segment of about 70 km in extent linking the cities of Paraguarí and Villarrica; and the less-defined eastern segment, 40 km-long, with a NW-SE strike, between Villarrica and the Cordillera del Ybytyruzú.

Tectonic studies in the region revealed a first phase of faulting during the Early Cretaceous associated with tholeiitic magmatism in the eastern segment of the rift and followed by expressive alkaline (potassic) magmatism mainly in the central segment of the rift. Structural analysis of diabase and alkaline dyke swarms indicated the action of a paleostress field with $\sigma 1$, NW-SE oriented /horizontal, $\sigma 2$ vertical, and $\sigma 3$ NE-SW/horizontal, related with an E-W oriented, right-lateral strike-slip binary.

During the Paleocene, the western segment of the rift was filled by fanglomeratic, aeolian and volcaniclastic deposits of the Patiño Fm. Deep NW-trending lithospheric faults served as conduits for ultra-alkaline rocks, of nephelinitic composition, bearing spinel lherzolite mantle xenoliths. These rocks intruded the still unlithified sediments of the Patiño Fm. causing synsedimentary hydrothermal silicification. This fact and the presence of volcanic fragments (bombs and lapilli) indicates that the Patiño Fm. represents the sedimentary record associated with tectonic and magmatic episodes that occurred in the Asunción Rift during the Paleogene. Structural analysis of nephelinitic plugs, necks and dikes indicated a paleostress field with $\sigma 1$, NW-SE/horizontal, $\sigma 2$ vertical, and $\sigma 3$ NE-SW/horizontal, also related with an E-W oriented right-lateral strike-slip binary.

Quaternary faulting, recorded in the western segment of the rift, shows a stress field with $\sigma 3$ horizontal along the E-W direction, probably responsible for the installation of the Ypacaraí Graben and the morphological compartmentalization of the region. — ( *May 24, 2002* ) .

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**AN INTEGRATED IDTIMS, EVTIMS AND SHRIMP ZIRCON DATING STUDY**

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Presented by Valderez P. Ferreira

An integrated IDTIMS (isotope dilution thermal ionization mass spectrometry), EVTIMS (evaporation thermal ionization mass spectrometry) and SHRIMP (Sensitive High Mass Resolution Ion Microprobe) study of Archean orthogneiss reworked in the Brasiliano orogeny is discussed here. The sample comes from the Atuba Complex, near Curitiba, Paraná State.

Zircon age determination by three methods are $3055 \pm 90$ (IDTIMS upper concordia intercept), $3000 \pm 40$ Ma (EVTIMS $^{207}Pb/^{206}Pb$ plateau) and $3079 \pm 23$ Ma (SHRIMP). These results are in good agreement.

The SHRIMP analysis guided by cathodoluminescence (CL) also recognized younger age (e.g. ca. 2920 Ma, 2200 Ma and 800 Ma) events in the growth/evolution of the zircons. The petrography of the zircons revealed by the CL images also clearly demonstrated that 3000-3100 Ma zircon population is igneous oscillatory-zoned zircon, and is not an inherited component in a younger rock. Thus it is clear that MJ316 is a Mesoarchean rock.

The EVTIMS, "step heating", of one of the studied zircons showed that $^{207}Pb/^{206}Pb$ date rises from ca.