



FORAMS 2006

**Paralic Environments Past and Present – Their Characterization
With Benthic Foraminifera and Economic Importance**

Chaired by David B. Scott

This session addresses some of the aspects of paralic (i.e. marsh-estuarine deposits) that characterize both modern and ancient shorelines, especially Mesozoic shorelines on the Atlantic margin in Europe, North America and South America. The benthic foraminiferal faunas that characterize these environments remain unchanged since the Mesozoic so the assemblages give true “modern analogues” for Mesozoic and even older rocks. Many of these marginal marine deposits turn out to be major source rocks for petroleum hence it is important to be able to characterize them accurately. Using close relatives of foraminifera, the thecamoebians, it is also possible to trace marine to freshwater transitions quite accurately and thecamoebians also do not change much since the Mesozoic. In addition to petroleum aspects these deposits provide the most accurate sea-level indicators in the fossil record and can calibrate sea-level records from Mesozoic to Recent. In modern settings paralic forams can be used for hurricane records, earthquake records and of course Holocene sea-level records.



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Emendation of the genus *Trochammina* Parker and Jones for improvement of work in the paralic environments

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Taxonomists and stratigraphers have observed the family Trochamminidae Schwager as one of the most complex among agglutinated foraminifera, as the genus *Trochammina*, and some others under the family, present high similarity. Genera such as *Trochammina* Parker and Jones, 1859, *Siphotrochammina* Saunders 1957, and *Paratrochammina* Brönnimann 1979, are a good case in point. The objective is to do an emendation of the genus *Trochammina* and discuss the implications of its emendation. This is possible because the type species of *Trochammina*, *T. inflata*, has been observed to have changes in the aperture not reported in the original type description by Brady. This allows for more flexibility in what will fit into *Trochammina*. The result will be increased usability and decreased taxonomic chaos, caused by the current over splitting.

A series of specimens of *Trochammina inflata* present different development sequences of the aperture (from siphons well developed to specimens with no siphon), which seem to correspond to phenotypic adaptation of some individuals. Based on this, an emendation on the description of the aperture in *Trochammina* is proposed to read: “...apertures interiomarginal, umbilical-extraumbilical arch that could present a siphon-like lobe with narrow bordering lip, those of earlier chambers completely covered by latter chambers or other apertural deviations”. The species *Siphotrochammina lobata* Saunders can be considered a junior synonym of *Trochammina inflata*, once we show different stages of development of a siphon like aperture.

The genus *Paratrochammina* Brönnimann, 1979, was emerged as a new genus being differentiated from *Trochammina* in having an umbilical-extraumbilical aperture, rather than a basal aperture midway between the umbilicus and the periphery. The umbilical-extraumbilical aperture is present on the description of the genus *Trochammina* and this taxonomic criterion does

not justify this new genus. The type species *Paratrochammina madeirae* Brönnimann was described from continental shelf facies, and once this is not a taxonomic criterion, we propose to accommodate this occurrence on Brazilian shelf to the new species *Trochammina madeirae* (Brönnimann). So, we also suggest that *Paratrochammina* Brönnimann, 1979 be considered a junior synonym of *Trochammina madeirae* (Brönnimann) n.sp. Several other genera that were first described as *Trochammina* species also fit into this category such as *Tiphotrocha* and *Arenoparella*. We suggest other kind of approaches such as genetic analysis on these different species to see if they really correspond to different genera.