Benthic foraminifera fauna at an abyssal site in the equatorial Pacific.

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Deep-sea foraminifera are well known from geological studies that have documented the distribution and diversity of species living on the ocean floor (Murray, 1991, 2006). Most of our knowledge of these faunas concerns the hard-shelled, predominantly calcareous species which are well represented in the deep-sea fossil record. However, deep-sea sediments abound in a variety of other foraminifera and foraminifera-like protists with agglutinated or soft-shelled organisms which are much more delicate and have little fossilization potential. Many of these belong to poorly-known, single-chambered (monothalamous) taxa.

A recent study based on very fine sediment residues (32 maicrom) revealed very diverse assemblages of these monothalamous 'soft-shelled foraminifera' in the Pacific (Todo et al,. 2005, Gooday et al,.2004 and Nozawa et al., 2006).

We are currently analysing similar foraminiferal assemblages at the Kaplan Central area(˜130W, ˜14N; ˜5000m water depth). Replicate sediment samples were obtained from 2 closely spaced stations in the Kaplan Central area, just below the carbonate compensation depth. At each site, 2 (Stn 866, or 1 (Stn 867) complete cores (diameter=95mm) were subsampled using 3 cut-off syringes of 6.6cm3 cross-sectional area.

The 0-1cm sediment layers (32 microm fraction) of these 8 subsamples together yielded 4717 individuals, rose-Bengal stained benthic foraminifera most of them morphologically simple monothalamous types. Most (90%) of these complete tests were soft-shelled foraminifera. Complete individuals that could be assigned to undescribed species accounted for 174 species (95% of total species abundance).These samples had an extremely patchy small-scale distribution on a scale of centimetres.