

## POSTER PRESENTATION

### NEAR-SHORE *THALASSIOSIRA* SPECIES FROM THE PLIOCENE SECTION OF THE ANDRILL AND-1B DRILLCORE, MCMURDO SOUND, ANTARCTICA

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Modern *Thalassiosira* species in the Southern Ocean are a diverse and varied group characterized by species usually associated with the open water primary productivity occurring at the sea ice edge. One species though, *T. antarctica*, occurs in coastal waters with great sea ice influence.

Assemblages in the newly recovered ANDRILL AND-1B drillcore contain several extinct species of this genus; *T. fasciculata*, *T. kolbei*, *T. striata*, *T. torokina* and the new species *T. teres*. This new species is associated with different interpreted environmental conditions in chronostratigraphically separate intervals of the core. In the older early to mid-Pliocene interval this species occurs in higher numbers in association with species indicative of cool water with limited sea-ice influence. Whereas in the late Pliocene this species co-occurs with *Shionodiscus tetraoestrupii*; the modern descendant of which, *S. oestrupii*, occurs today only in waters north of the Polar Frontal Zone.

The overall morphology of this new species shares some features in common with the modern *T. antarctica*, such as the general areolation pattern on the valve face and the presence of external extensions of the marginal strutted processes but is lacking the central group of strutted processes present in this species today. Of the two forms commonly observed in Antarctic waters today *T. teres* is most similar to the *T. antarctica* T1 form which is interpreted to be strongly associated with the presence of sea ice. This smaller form is lacking external extensions of the marginal strutted processes which are present in *T. teres*, yet shares the finer areolation observed in the T1 form.

The early forms of *T. teres* would seem to indicate an ecological preference for environments similar to that occupied by *T. antarctica* T1 today, yet the late Pliocene examples indicate a preference for marine conditions similar to those existing today near the modern Polar Front. Further SEM study is needed to determine whether this species is representing several similar forms with differing habitat preferences. The lack of *T. antarctica* in the AND-1B record would indicate it evolved subsequent to *T. teres*, perhaps suggesting the latter species could be an evolutionary predecessor to the first. Environmental conditions present during deposition of diatomite and diatom-rich sediment in the AND-1B core appear to have been entirely different than those observed today in any coastal region of Antarctica, which would play a role in determining the evolutionary trends of species within this genus.