

The Week's News for Andy

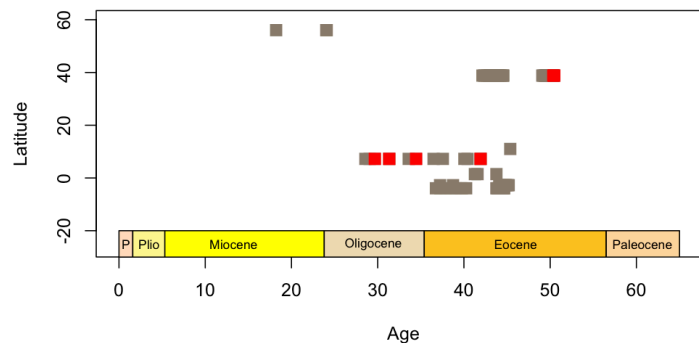
Progress

Ch. 2A—Pre-Cenozoic Radiolaria

No developments.

Ch. 2B—Radiolarian lineages

- Finally managed to make Neptune database download work. Have been interrogating database for occurrences of the six lineages in question. Am finding some confusing things—e.g. *Phormocyrtis striata striata* is supposed to evolve into *P. s. exquisite* after the Early Eocene, yet the occurrences in Neptune stretch from the Late Eocene through the Oligocene. What's more, the last appearance of *P. s. striata* is supposed to define a radiolarian biozone in the Early Eocene...



- Subsequently ran into problem: Neptune database does not contain curatorial information (core #, section, sample depth interval) for the occurrence—this makes it apparently impossible to relate a Neptune entry to a particular slide in the ODP collections or the MRC database.

Ch. 3—Diatom morphospace

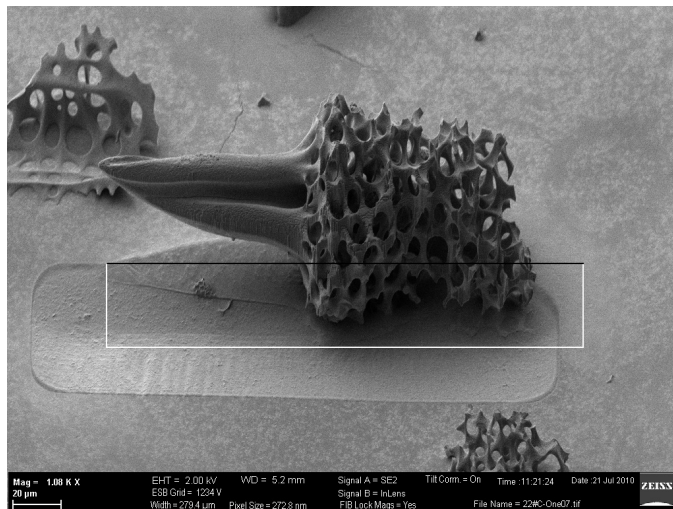
- I have finished going through Round *et al.* to list potential choices for morphospace characters. Unfortunately, I have only covered just over half of the genera in Neptune—the others do not appear in Round *et al.* This seems substantially problematical, since many of the taxonomic descriptions go back to original publications in the period 1890-1920, which will be very time-consuming to locate. Not sure how to proceed from here.

Ch. 4A—Extant diatom FIB

No developments.

Ch. 4B—Fossil diatom FIB

- Have spent three sessions (12 hours) on the FIB; unfortunately, these have been unsuccessful. In each case, I was unable to obtain a clean cross-sectional cut of specimens in the sample. In most cases the beam appears to have been too wide and insufficiently strong to cut through either diatom or carbon tape substrate.
- Talked to the FIB engineer about this and learned that apparently the different ion beam probes—particularly those delivering a higher current—need to be carefully aligned, stigmated, and defocused before a milling operation. (Note that this was not a subject covered or even mentioned in the extensive training I completed last fall). I have scheduled an assisted session to learn how to do this, which will hopefully solve my problem.



Ch. 5—Diatom sonication

No developments.

Ch. 6—Diatom diversity and the E/O drop

- Have been reading Alroy's 'shareholder quorum subsampling' manuscript and have started to make sense of the technique and the underlying idea. Have continued writing a short summary of what's to be done.

Other news

Proofs arrived from *Geomicrobiology Journal* of diatom silicification review article with Zoe. Images look a little sketchy, but otherwise it seems to be in decent shape.

Short-term goals

- Send diversity project summary to Charles, copy to Andy
- Prepare some more fossil diatom samples for FIB
- Meet FIB engineer to set up automated overnight runs (scheduled for 8/9)
- E-mail Dave about sample selection procedure