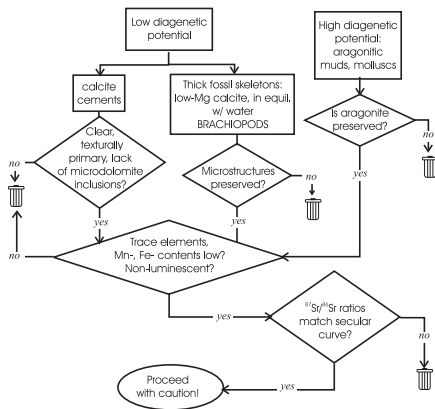


FIGURE 6.9: North American brachiopods (filled region) and coexisting cements (circles) from Carboniferous sediments. The $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ values of cements are lower than those for coexisting brachiopods, indicating diagenesis with meteoric water. Thick non-luminescent samples tend to be the least affected by diagenesis. (Modified from Mii et al., 1999.)



Is assumption 2) valid, that $\delta^{18}\text{O}_{\text{ocean}}$ remained constant?

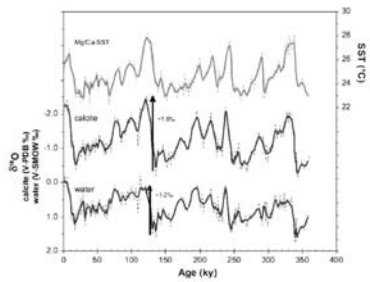


Fig. 7. Variation of the $\delta^{18}\text{O}$ value of ocean water (bottom plot) from the tropical Pacific shows orbital-scale changes of up to 1.2‰ between glacial and interglacial periods. The variations are forced by changes in continental ice volume, which results in ^{18}O enrichment in ocean water during maximum ice volume. From Lea et al. (2002). Note that the temporal variation in $\delta^{18}\text{O}$ of the ocean is small compared to the spatial variation of $\delta^{18}\text{O}$ in precipitation (see Fig. 5).

