



Use of water isotopes tracers in high latitude hydrology and paleohydrology

THOMAS W.D. EDWARDS, BRENT B. WOLFE, JOHN J.
GIBSON, DAN HAMMARLUND

by Liubov Soldatova at CORELIS



- Lake sediments contain information about isotopic water content
- Isotopic fractionation of water in the hydrological cycle arises because of differences in the behavior of water molecules containing various combinations of the naturally occurring stable isotopes of hydrogen (^1H , ^2H) and oxygen (^{16}O , ^{17}O , ^{18}O).



- Lake sediments can be used to reconstruct past hydrology and hydroclimatology at high latitudes.
- Provides information about runoff generation processes and surface water balance



- **Sedimentary calcite
(Chara algae calcite)**

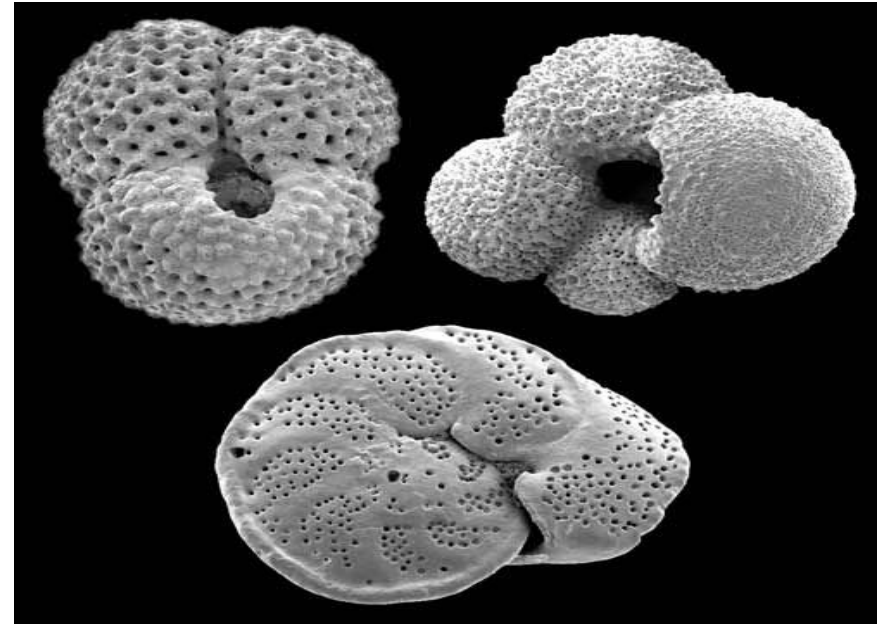


- **Pisidium sp. Mollusks
aragonite**



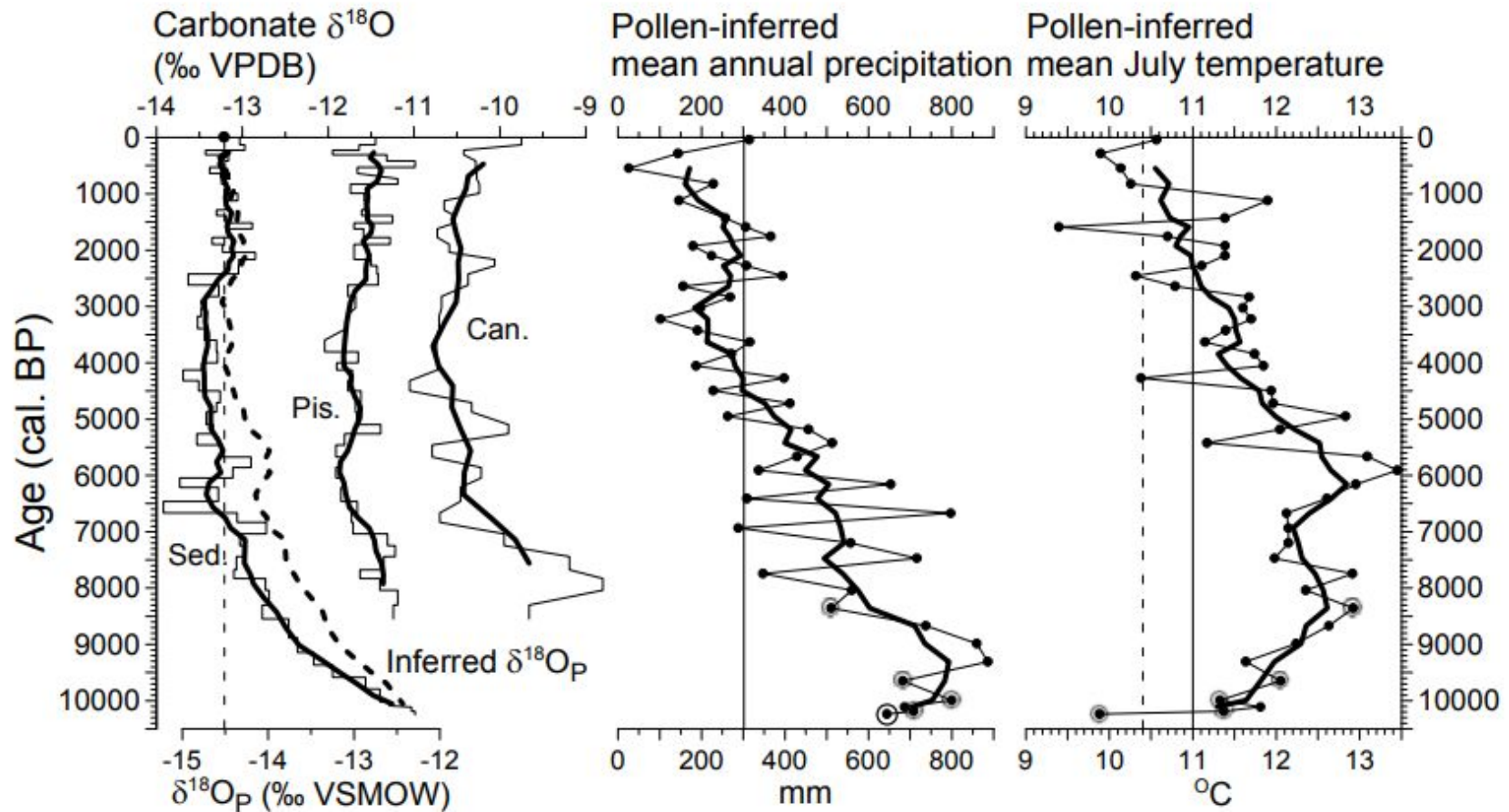
- **Candona candida**
ostracode calcite

- **Foraminifera**





RECONSTRUCTION BASED ON SEDIMENTS FROM LAKE TIBETANUS, SWEDEN





Thank you for your
attention!