



A palaeoclimate investigation of the lacustrine sediments from Chew Bahir in Ethiopia spanning multiple glacial-interglacial cycles

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There are few long, continuous, terrestrial Pleistocene records from eastern Africa, therefore it has been difficult to establish the relative influences of different climate forcings on the region's hydroclimate and to understand the climatic conditions at the time of anatomically modern human origin and dispersal out of Africa. To address these gaps in our knowledge, we have cored lake sediments from Chew Bahir in southern Ethiopia, close to the site of the oldest-known anatomically modern human fossils at Omo-Kibish. Several dating techniques are being employed and preliminary results suggest that the record covers the past ~500-550ka. Several proxy records are being produced; here we use the oxygen and carbon isotope composition of endogenic calcite to reconstruct changes in hydroclimate. The data suggest significant fluctuations in water balance, with seemingly more evaporative conditions during glacial periods and less evaporative conditions during interglacials. The sawtooth structure of the isotope data through glacial-interglacial cycles suggests a strong linkage between high latitude forcing and Ethiopian hydroclimate fluctuations. We make inferences about the possible correlation between climate and the dispersal of anatomically modern humans out of Africa.