



Preface

Southern hemisphere tropical climate over the past 145ka: Results of the Lake Malawi Scientific Drilling Project, East Africa

1. Background to scientific drilling on Lake Malawi

The suggestion for this special thematic issue of *Palaeogeography, Palaeoclimatology, Palaeoecology* arose during discussions at the 2007 ILLC Limnogeology Congress held in Barcelona, Spain, and as a consequence of extensive analyses of the Malawi Drilling project cores, which were recovered in 2005. That drilling effort was not the first international collaborative lake drilling program, but was the most ambitious program to date by the limnogeology community. Lake drilling has now matured into an important means of recovering paleoclimate time series from the continents, with numerous international collaborative projects completed throughout the world. The Lake Malawi Scientific Drilling Project was one of the first proposed, and emerged from a series of workshops focused on lake drilling in the 1990s, and which also led to a community-focused program and equipment pool for forthcoming projects.

The detailed scientific objectives of the Malawi Drilling Project are outlined in this Special Issue's Overview paper, authored by Scholz, Cohen, Johnson, King, Talbot and Brown, and broadly relate to the history of changing climatic conditions in the southern hemisphere African tropics in the Pleistocene and Holocene. Clearly the results emerging in the papers in this volume and in other publications affiliated with the Malawi Drilling Project demonstrate the unique behavior of regional climate in SE Africa, and pose many intriguing questions. Future research will undoubtedly consider the longer term paleolimnologic history preserved in the Lake Malawi cores (extending to about 600 kYr) and will include further studies of hydrologic, temperature, water column, vegetation and dust flux variations in this region.

The project was made possible through the consistent support of the US National Science Foundation and the International Continental Scientific Drilling Program, and because of the extensive efforts of project partners on several continents. The logistical and operational complexity of the project, which involved drilling in very deep water in a remote site in central Africa, required an unusual level of cooperation and communication between various service providers and contractors. The University of Rhode Island provided oversight as the project general contractor; Seacore Ltd. (now Fugro-Seacore) offered an outstanding team of drillers for the program; ADPS Ltd. provided a superb marine crew qualified to operate a dynamically-positioned drilling vessel; DOSECC Inc. procured the portable dynamic positioning system and provided the drilling tools and outstanding support personnel; Malawi Lake Services provided the drilling vessel and shipyard support; and Lengeek Vessel Engineering redesigned and, through a lengthy and difficult procedure, remodeled the Viphya barge

into a self-contained, dynamically-positioned drilling platform. Throughout the program the Malawi Geological Survey provided logistical and planning assistance. Following the drilling field program LacCore, the primary US core repository for lake sediment cores, provided extensive assistance with core processing and archiving.

The international investigator team planned the program for several years in advance of drilling, including conducting numerous workshops and planning meetings in the USA, Europe, and Africa. Our friend and colleague Michael Richard Ronald Talbot (1943–2009) was central to this planning effort, to project execution, and to many of the analyses and scientific ideas presented in this special issue.

2. A brief tribute to Michael Richard Ronald Talbot

Mike Talbot contributed extensively to and markedly influenced our scientific experiences on the African continent. These ranged in scope and scale from microscopic examinations of Lake Bosumtwi sediments to geophysical surveys of Lake Victoria. Throughout his career Mike exhibited a most remarkable investigative dexterity. Whereas his expertise on the fate and character of organic matter in lake systems is broadly recognized, his skill sets influenced generations of geoscientists in fields as broad as carbonate petrology and seismic sequence analysis. Mike displayed an encyclopedic knowledge of African natural history and conveyed that wisdom to generations of students and colleagues with a calm, sustained demeanor. Above all Mike maintained a professional and positive perspective throughout the good and bad times of African field work.

Mike was extraordinarily generous towards his colleagues and friends. He gave of his time unselfishly whenever we engaged him, even when it was something extremely trivial. In the 25+ years of our scientific interactions and through probably a dozen different collaborative projects, he was consistently a source of intellectual inspiration and scientific vision. He made his ideas clear and his voice heard without being pushy, and was always a positive force in any project where we worked together. He maintained a wonderful smile during the most difficult moments on Lake Malawi.

Intellectually, Mike was a true leader in limnogeology and paleolimnology, especially through the field's period of rapid growth in the 1980s and 1990s. Mike also generously contributed countless hours as a member of the Editorial Board of *Palaeogeography, Palaeoclimatology, Palaeoecology*. He pioneered several of the most commonly used approaches in the field today, notably the analysis of covariance in carbon and oxygen stable isotopes in lacustrine carbonates to understand paleohydrology and the application of

nitrogen isotopes of sediment organic matter to a variety of problems in lake history reconstruction.

Mike was a great companion in the field. As mentioned above for Lake Malawi, he also maintained a smile, or at least sustained patience and calm, during difficult moments on Lake Victoria and Lake Edward. His description of one stormy night on Lake Victoria captures his wonderful ability to cope with humor (the Brit's stiff upper lip?) during times of duress:

"At around midnight ran into a massive thunderstorm with accompanying squally wind. Soon whipped up 2+ meter waves and much spray. Tom decided to take cover behind Bugaia Island and anchor for night. After successfully negotiating a hazardous trip to toilet – which was occupied by one of crew – took spectacular tumble on galley floor, which was covered by a layer of cooking oil and the rest of the evening's fish and chips! Fortunately no damage, but clothes soaked in oil and liberally covered in bits of fish! Retired to bunk at 01:40. Retched a couple of times when reaching down for sleeping bag but otherwise no serious sea-sickness."

Mike's penmanship was the most beautiful calligraphy we have encountered. He related that as a teenager, his handwriting was quite atrocious, and this was pointed out to him most clearly by one of his teachers. He decided to do something about it, and enrolled in a handwriting class, where he not only evolved into a legible writer, but one with true artistic flair. In the days before e-mail, we always looked forward to his letters, first for intellectual content, second for humor, and third for aesthetic accomplishment.

We will always miss Mike's companionship and contributions, and endeavor to sustain his values in our future research.

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