

Editorial

Proceedings of Mullite 2000 Conference

Ninety years ago, Anderson, Wilson and Tait, geologists of the Scottish Branch of His Majesty's Geological Survey were exploring the Hebridean island of Mull, off the west coast of Scotland, with a view to unravelling the unusual geological history of the area. They collected mineral samples from various locations along the perimeter of the ancient lava flows from the volcano Ben More which was active 65 million years ago. Little did they know they had stumbled upon the first natural occurrence of a ceramic material which had been produced artificially by Homo Sapiens in pottery for at least 3 millennia. Neither were they to know that this material would figure prominently in the technology of the millennium to come, for this material, which their colleagues Thomas and Radley initially identified as sillimanite, came to be called mullite, and has acquired a status as one of the pre-eminent ceramics of the new age of technology. This material still continues to be studied vigorously 90 years after its discovery on Mull, as the level of international interest and the standard of the presentations at this Mullite 2000 meeting testify.

The Mullite 2000 meeting was the fourth international gathering of mullite scientists, after successful meetings in Tokyo (Japan), Seattle (USA) and Irsee (Germany). Since most of those working on this material have never had the opportunity to visit the type locality, it was fitting that this Millennium meeting should be held in Oban, within sight of Mull and the sombre shadow of Ben More. The logistics of organising such a meeting in a small Scottish seaside town more used to tourists than scientists were challenging, but with the co-operation of Oban City Council, the Highlands and Islands Tourist Board and the proprietors of the Columba Hotel the meeting was extremely successful, with 32 participants from 10 countries presenting 27 papers on a variety of mullite-related topics.

But for most of the participants, the highlight of the conference was probably the day-long field trip to Mull. There, assisted by the 90-year-old Geological Survey maps and reports, and with the benefit of several participants with geological and mineralogical backgrounds,

the group re-located one of the original mullite outcrops, and with the aid of a crowbar and heavy hammer, managed to prise some fragments from the mullite deposit. These will doubtless become treasured mementoes of a memorable "Pilgrimage to Mull", in the words of the late Robert Sosman, a ceramist from Rutgers University, who made this same nostalgic journey in 1955 and reported it in the *Bulletin of the American Ceramic Society* (35, 1956, 130).

So what is it about this material which continues to generate research effort into the 21st Century? The papers presented at this meeting might suggest a slowing-down of the previous strong fundamental research interest in the preparation and properties of mullite-containing ceramic composites for high-technology engineering applications, but to conclude that these materials are becoming less important would be a mistake. Rather, this may be an indication that the technology of mullite composites is becoming better understood and more mature. Interestingly, most contributions to this meeting were on the synthesis and structural characterisation of mullite and new compounds with the mullite structure. Old conundrums such as the nature of the phase transformations leading to or associated with mullite formation are being revisited using newly developed state-of-the-art techniques. It remains to be seen whether this is the area in which research efforts will be sustained in the future, but for the present there is a strong continuing interest in this material from the ancient island of Mull.

We would like to thank all colleagues who contributed to the success of the meeting. Special thanks are due to Wolfgang Braue, who was busy to solve organisational problems, and together with Achim Kleebe did an excellent job to prepare the excursion to the island of Mull. Last, but not least, we thank the German Aerospace Center for financial support, which helped to realise this conference.

Hartmut Schneider, Kenneth MacKenzie,
Chairmen of Mullite 2000