Editorial

Dr W.M. Stobbs
(1944-1996)

"A 30 cm length of 1965 Workington Acid Bessemer rail was removed from a 10 ft section of track on the West Coast main line at 164 miles 990 yds on the "up fast" at Winsford."

Thus began the experimental paragraph of "A Transmission Electron Microscopy Study of the White-etching Layer on a Rail Head" by S.B. Newcomb and W.M. Stobbs (*Materials Science and Engineering* **66** (1984) 195-204) which in many ways illustrated the Stobbs approach: a touch of irony, difficult electron microscopy on a complex material, a description of a novel way of preparing cross-sectional specimens, and results which still stand today when wear and crack failure of rails are of current concern.

Mike died suddenly from a heart attack in Cambridge on April 26, 1996, at the age of 51. He was a terribly hard working imaginative electron microscopist and materials scientist. He began his career (although it might be said that he never knew the meaning of the word) by studying the deformation behaviour of internally oxidised copper single crystals. This naturally lead him on to use electron microscopy to study dislocations, by the weak-beam technique, as well as precipitates (at the time using Moiré techniques). His enthusiasm knew no bounds and he would attempt experimental feats in pursuing his aims. As a minor example, he had devised, with Ugo Valdré, a variable geometry, rotating slit, objective aperture, which would increase resolution in the perpendicular direction of a dislocation line in weak-beam imaging, enabling the separation of partials to be measured, whilst optimising the signal to noise ratio. The object was difficult to build, difficult to use, Mike demonstrated it to work and moved on. Mike always moved.

I have read in various obituaries that he published over 450 research papers (his number of EMAG contributions was closely noted in order to see whether a new record was established each time). More to the point, he trained around 50 research students and influenced a whole generation of microscopists by his (very) critical non-conformist approach. When the whole field was indulging in high resolution phase contrast electron microscopy he would be pushing dark-field (diffraction contrast) approaches, or the unglamourous Fresnel technique for interface studies.

This latter technique is immensely powerful and I am sure that Mike's leading contribution will be recognised, if anyone takes the time to read the literature anymore. This approach fitted in to a more general scheme of research concerning quantification of electron microscopy in which he was very much involved. Here he recognized, early on, the need for energy filtered images.

Apart from a definite bias for the conventional transmission microscope as opposed to the scanning transmission approach, he was tremendously eclectic and used almost all available techniques on a huge range of problems or materials, ranging from dislocations in copper, short range order in alloys, voids in nanocrystalline thin films (they weren't called nanocrystalline at the time), amorphous materials, martensitic transformations, semiconductors, high Tc superconductors, superalloys, etc. His overiding concern in using electron microscopy was to determine useful information about the material in question.

Mike was driven by the excitement of new problems and astute (if occasionally complicated) solutions. People who have had the pleasure of working with him will remember his very original way of thinking, his total honesty and scientific integrity and his ruthless demand of rigour from his students. He is very much missed, and we would like to extend our deepest regrets to his wife Susan and to his two sons, Piers and Julius.

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