The Leslie Fox Prize Meeting

THE first Leslie Fox Prize Meeting was held on August 30th, 1985 at Imperial College, London. As regular readers of the *Bulletin* will know this competition was open to young numerical analysts who were invited to submit a research paper suitable for a 45 minute presentation. The main business of this meeting was the presentation by their authors of the five papers which had reached the final round of the competition.

The meeting was opened by Professor M. J. D. Powell, the chairman of the adjudicating committee, who congratulated all the entrants, both finalists and non-finalists on the standard of the entries. The chair for the morning session was then taken by David Jacobs who introduced the first three speakers. Peter Sweby of the University of Reading opened the proceedings with a paper entitled "High resolution schemes using flux limiters for hyperbolic conservation laws." We then moved from nonlinear hyperbolic systems to linear ones with a paper from Nick Trefethen of MIT on "Instability of difference models for hyperbolic initial boundary value problems." This was followed by a complete change of subject with a paper from Ya-Xiang Yuan of the University of Cambridge on "Conditions for convergence of trust region algorithms for non-smooth optimisation."

Nancy Nichols took the chair for the afternoon session and introduced Nick Higham of the University of Manchester who spoke on "Computing real square roots of a real matrix." The final paper was given by Paul Matthews of the University of Dundee who spoke on "Stable modification of explicit LU factors for simplex updates."

The content of each of the papers has appeared, or will soon appear, in the standard literature and so I shall not comment on that here. However, I am sure that when the committee selected these five papers on the basis of their content they could not have anticipated how well they would be presented. The attentive audience, who were mostly ineligible for the prize due to their advanced years, were very impressed by the standard of the presentations given by these relative youngsters.

After a tea-break the committee went away to deliberate while the rest of us enjoyed the final talk given by the man whose career inspired the setting up of this competition—Professor Leslie Fox. It was most appropriate that he should describe some of the work that he had done in his late twenties (the age of the entrants in the competition). This included a live demonstration of relaxation methods which showed that a combination of observation, recognition and speedy mental arithmetic could probably compete very favourably against a modern computer. He then described a problem involving singularities at unknown points which again needed observation and recognition—this time in the behaviour of differences—to solve. His last point should give us all something to think about. In many modern applications in artificial intelligence the computer effectively recognises situations that it has met before. Could this idea not be used to great advantage in many numerical applications?

The final item of the afternoon's business was the announcement of the winner(s). Mike Powell said that it had been the committee's intention to award one first and, at most, two second prizes. However, after hearing the presentations they had decided that the first prize should go to Nick Trefethen and that each of the other four finalists should receive a second prize. The committee urged those entrants who had been unsuccessful in this year's competition to enter a subsequent one.

The first Leslie Fox Prize meeting had been a great success and we all hope that there will be many more in the future.

This report was originally written for the IMANA Newsletter.

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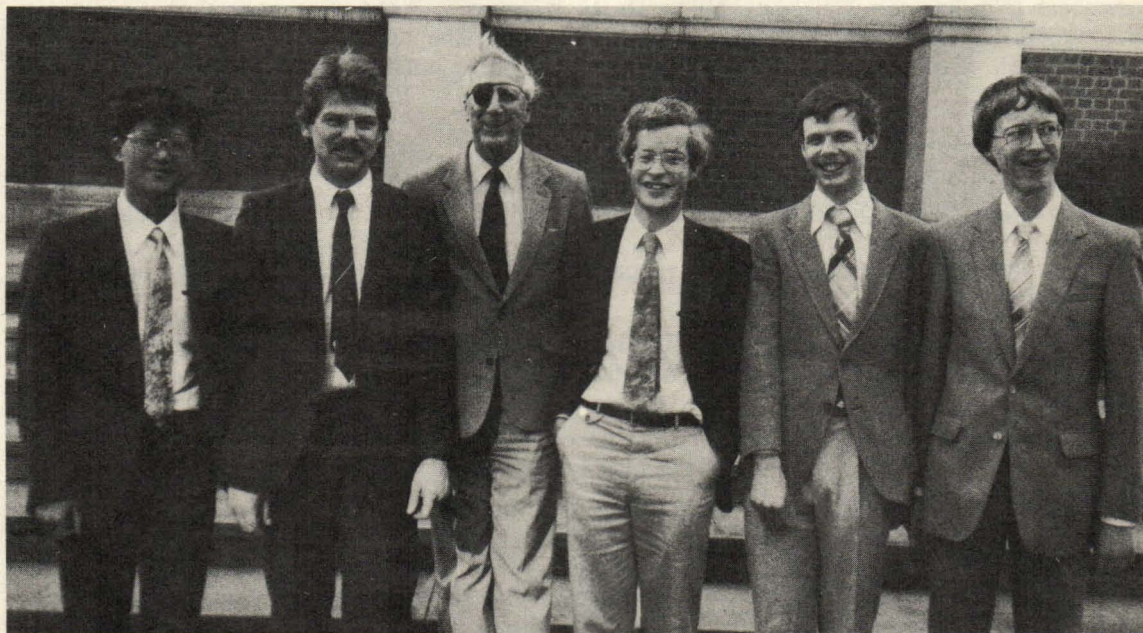
The finalists with Professor Fox (*l. to r.*) Y. Yuan, S. P. J. Matthews, L. Fox, L. N. Trefethen, P. K. Sweby and N. J. Higham