

Number 7, 1988

**10th ICTA
comes to
Hatfield Polytechnic
in
August, 1992**

details
inside

EDITOR' S NOTE

The more assiduous of our readers will already have observed from our title block head that TMG News has a new editor. We record our deepest thanks to Peter Laye who initiated TMG News in 1981 and was its editor until this issue. The new editor does not promise to last so long.

Editorial policy is unchanged. We aim to tell you all about the people and events of the TMG - well, nearly all! The price is unchanged too.

Graham Clark

CHAIRMAN' S CORNER

It is a pleasure to look back at another year of progress in which the TMG has held successful meetings, and on the hard work done by all members of the committee and Analytical Division.

Despite an accident which kept our Hon. Sec. Cyril Keatch less mobile than usual, he has kept us all busy. In these days of cordless telephones, nowhere is safe from reminders of letters which must be written and deadlines to be met.

Dick Still with his Hon. Treasurur's hat on has been 'Oliver Twisting' our arms for more profitable meetings so that the Group may keep up its services to members. Besides this he is organising the meeting on Polymers to be held at Manchester in January, 1989.

Our Lady Vice-Chairman, Jenny Hider, has nobly managed to cope both with her young family and with the organising of this November's Food Meeting, and still stay cheerful. We now have two ladies on the Committee (for the first time, I believe) now that Joyce Griffiths has brought her expert knowledge of publishing and conferences to our aid.

Derek Nowell led the TMG through its 21st Anniversary and has contributed to many of the meetings. His energetic presentation was much admired in Jerusalem, and won the 10th ICTA for Hatfield in 1992. Congratulations!

Another Past Chairman, Ted Charsley has acted as our Affiliate Councillor at ICTA for several years and has brought us news of their deliberations. He has now been appointed to another post within ICTA, and we thank Ted for his work at ICTA, and welcome Dr Fred Wilburn as our new Councillor.

Robert Mackenzie has done so much for thermal analysis that it needs pages to give sufficient thanks. We always value his expertise and knowledge.

All the members have worked enormously hard to organise the various meetings throughout the year. Carl Jones did a great job with the Instrument Manufacturers and Practical Sessions at the School. Terry Pearson and Alan Smith have worked wonders for the Food Meeting. Frank Sale, almost single-handed brought together the Solid State Meeting, despite problems, and Bob Whitehouse has helped with the successful Polymer meetings. To all of these, and to Graham Clark as TMG News Editor, I would like to say a great 'thank you' from the Chair.

The Chairman's Corner sounds rather as though it is a sharp edge, digging in, or a punishment, but like the 'King of Baratavia' in 'Gondoliers' 'The duties are delightful and the privileges great,... as I run on errands for the Ministers of State'.

Lastly, Dr Edith Turi in closing 9th ICTA entitled her talk "The Future of Thermal Analysis" and stressed the need to co-ordinate our efforts to train thermal analysts and keep well informed and well recognised. That is what the TMG will try to do.

Peter Haines

DATES FOR YOUR DIARY

Applications of Thermal Methods in Polymer Science and Technology

Wednesday to Friday, 4—6 January 1989
at Ashbourne Hall, University of Manchester.

This is a joint meeting with the NW Region Analytical Division, the Macromolecular Group, and the Society of Chemical Industry.

Invited Plenary Lecturers:

Professor G Camino (Torino, Italy)— Application of thermal methods to the study of fire-retardant and intumescent systems.

Dr M Richardson (National Physical Laboratory, UK) — Applications of DSC (and other Thermal Methods) to the curing behaviour of thermosets.

Professor J C Seferis (University of Washington, USA)
— Applications of DMA in long term durability investigations of polymer composites.

For further details contact:

Dr R Whitehouse
Fine Chemicals Research Centre
ICI plc, P O Box 42
Hexagon House, Blackley
Manchester M6 3DA

ESTAC 5 The fifth European Symposium on Thermal Analysis and Calorimetry is to be held in Nice, France on 26—30 August, 1991. There have been suggestions that the TMG might organise a travel package, e.g chartering a coach. Suggestions to the Hon. Secretary or the Editor please.

10th ICTA Following a successful presentation by past-Chairman Professor Derek Nowell in Jerusalem, ICTA Council has awarded the 10th International Congress on Thermal Analysis to the 'DC and Hatfield Polytechnic. The Congress will be held on 24—28 August, 1992. 400—500 delegates are expected.

Watch this space for further details.

The cartoon shown below was published in NATAS Notes Vol. 20, No. 1 (Spring 1988). Can you identify the three acolytes? To avoid libel proceedings the Editor will not publish names! However, answers in plain brown envelopes will be gratefully received.



THERMAL ACOLYTES IN TRAINING
TO BECOME THERMAL METHODISTS!

HON. SECRETARY'S REPORT 1988

For the information of readers who have not received the Group's ACM papers we reproduce below the Hon. Secretary's Report for 1988.

"As mentioned in the Annual Report for 1987, Dr E Gimzewski duly presented his TMG Award - winning paper at the Group's meeting held on 6-7 January 1988, entitled "Thermal Methods in the Study of the Solid State". The attendance of about 50 was disappointing, but the papers presented were, generally, of a high standard.

On 29 March, a one-day joint meeting with the East Anglia Region was held at Hatfield Polytechnic. It was entitled "Analysis of Building Materials" and due to its specialised nature, attracted only a small audience. Nevertheless, all papers were of a high standard and were followed by a lively discussion period.

From 5-9 April 1988, the 9th Thermal Analysis School was held at Kingston Polytechnic. The number of delegates was at its maximum and participants clearly benefited, both from the lectures and the practical sessions.

The Group continues to support the International Confederation for Thermal Analysis (ICTA). Indeed, Dr M Reading (ICI Paints Division) delivered the 5th TMG Award Lecture at the 8th ICTA Congress, held on 21-26 August 1988 in Jerusalem. The number of delegates from the UK was very favourable, considering the situation in Israel.

No apologies are made for concluding this Report by, again, thanking the Secretariat at Burlington House for providing excellent secretarial assistance and facilities.

Cyril Keatch

NEW THERMAL ANALYSIS CONSULTANCY SERVICE

A Thermal Analysis Consultancy Service has been established within Leeds Polytechnic to provide a commercial contract research and test service using thermal analysis and allied techniques.

The senior staff of the Service are Edward Charsley (Head of *the* Service), Stephen Warrington (Deputy Head) and Arthur Brammer (Senior Experimental Officer). They have a combined experience of over 40 years in the field of commercial contract research using thermoanalytical techniques.

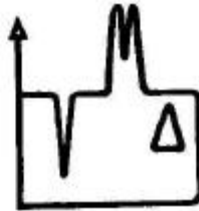
A full range of thermal analysis techniques are available which in addition to DSC and TG include simultaneous thermal analysis—mass spectrometry and thermomicroscopy. These can be supplemented by ancillary methods such as X—ray diffraction, GC—MS and other spectroscopic techniques.

The type of work undertaken can range from a single run to a full research programme lasting several years. The Service will be offering individually tailored training courses in addition to a range of short courses on selected topics in thermal analysis.

For further information please contact Ted Charsley or Steve Warrington, Thermal Analysis Consultancy Service, Leeds Polytechnic, Calverley Street, Leeds LS1 3HE. Telephone 0532 448234 or 0532 448236.

THE LOGO

Ten entries were received from members for the Logo Competition announced in TMG News No. 6. Chairman Peter Haines has been nominated as Returning Officer for an election amongst his Conwnittee to select the winning entry. The result will be announced at the AGM to be held on 10 November 1988. The editor's mole informs him that number 3 is the frontrunner.



9th THERMAL ANALYSIS SCHOIX.
Kingston Polytechnic
5 — 8 April 1988

The latest Thermal Analysis School organised by the TMG followed the successful pattern of previous teaching Schools. Eight lectures were given by experts in the techniques and applications of thermal analysis and practical sessions organised with the invaluable and willing help of the major instrument manufacturers. The course attracted a 'full house' of 25 participants from all around Britain and one from the Netherlands (see photo overleaf).

Dr Peter Laye (University of Leeds) gave the initial lecture with an excellent review of the definitions and background to thermal methods and he discussed the instruments, theory and applications of DTA and DSC. Professor Derek Nowell (Hatfield Polytechnic) continued the good work into TG and DTG with several case studies showing the value of complementary techniques to get the most information. Dr John Barton RAE, Farnborough) took a comprehensive look at Thermomechanical Methods, particularly applied to polymeric materials and including TMA, DMTA and rheometry. At the end of a very busy first day the participants sank gratefully into the bar for a social chat!

Ted Charsley (Charsley Associates) started the second day with a talk on Complementary Methods, showing how modern TA instruments are linked with microscopes, spectrometers and specific analysers. Dr Robert Mackenzie (University of Aberdeen), without whom no meeting would seem complete, showed the relevance of all these techniques to Inorganic Materials and Minerals.

The practical sessions occupied that afternoon and the whole of the next day, and the TMG is most grateful to all the manufacturers for bringing their latest equipment, and their expert demonstrators to help the participants try a

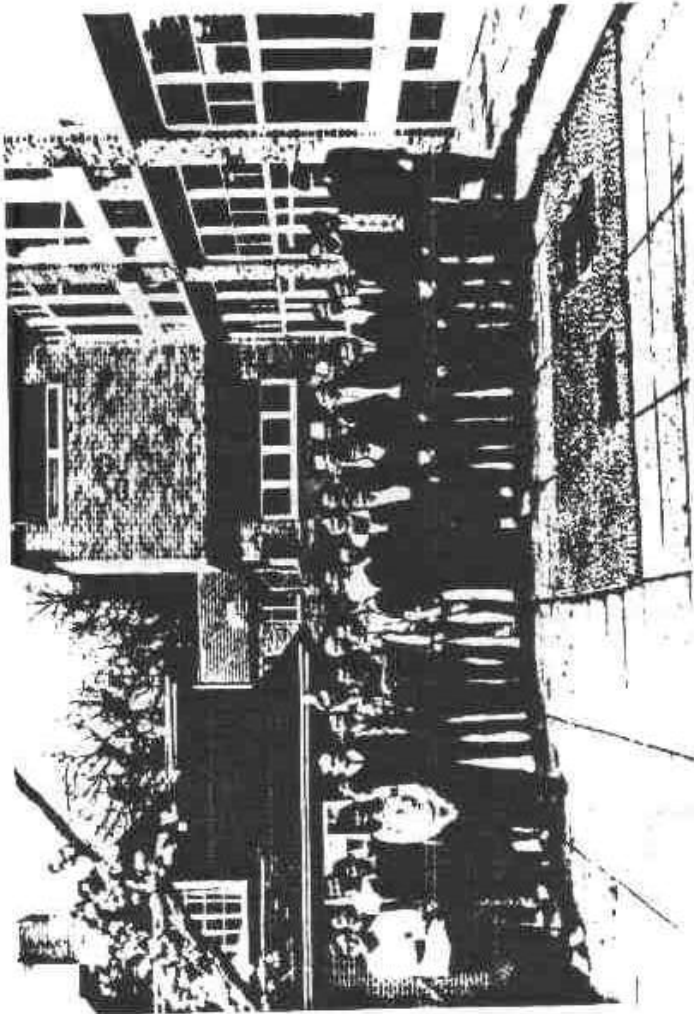
selection of hands—on experiments in DTA, DSC, IC, TMA and DMTA. Dupont, Mettler, Netzsch, Perkin—Elmer, Polymer Laboratories and Stanton—Redcroft all provided most elaborate arrays of equipment and the computer facilities as well. Ted Charsley led a discussion session after the practicals.

Despite having such an energetic day, the participants, lecturers and organisers relaxed in the evening with a tour of the British Heritage Motor Museum at Syon House, followed by an excellent Conference Dinner. There was some discussion amongst the older members of the party as to how much petrol cost in their younger days, and which car they preferred to drive!

The last day of the School was devoted to applications of thermal methods. Dr Trevor Lever (Perkin—Elmer) reviewed the applications to Polymers, Dr Alan Smith (Boots Ltd) to Pharmaceuticals and Dr Roger Heal (University of Salford) to Kinetics with the use of computers. Mrs Vivian Smith (Polymer Laboratories) brought the school to a close with a talk on the application of DMTA and DETA.

The TMG is most grateful to the Conference Secretaries at Kingston, Mrs Paula Thorne—Jones and Mrs Shirley Picken for their organisation, here, and for the excellent meals provided. Our thanks to the lecturers for their efforts and for the time spent with the participants discussing their work.

Peter Haines



Participants at the 9th TA School were coerced into taking a break from their intensive course. David Bailey couldn't make it, so Chrisraan Peter Haines' Brownie camera was re-commissioned for the occasion.

9th INTERNATIONAL COYCRESS ON THERMAL ANALYSIS
Jerusalem, Israel
21—25 August 1988

The eagerly awaited visit to Jerusalem was everything we had hoped for. As the Secretary to ICTA, Shmuel Yariv said in his Preface to the Congress Proceedings:

“An ICTA Congress is always a momentous event in the world of natural sciences. The holding of this Congress in Jerusalem symbolises for me the contribution of our scientific family to world peace and friendship”.

Thankfully, the political climate in Israel did allow the Congress to take place in a peaceful atmosphere, in the palatial Hyatt Regency Hotel which kept us cool when outside temperatures soared towards 40⁰C. The lecture programs and equipment exhibition together with the Social Program and all aspects of organisation were excellent and Dr Menachem Steinberg and his Organising Committee were much thanked for this.

This 9th ICTA, like many previously, contained a valuable contribution from members of the TMG. Firstly, Derek Nowell made an excellent presentation to the ICTA Committee, inviting them to hold the 10th ICTA at Hatfield Polytechnic in August 1992. I am pleased to tell you that against stiff competition from Washington DC, China and India, we won the privilege of hosting the next ICTA: Book now!

Secondly, after the Opening Ceremony and greetings from the Academic and Governmental representatives, Dr Robert Mackenzie was presented with the Honorary Membership of ICTA in recognition of all his services to thermal analysis over many years. He then delivered an excellent lecture on ‘Early Thermometry and Differential Thermometry’, explaining the development of thermoscopes and thermometers from the 17th century onwards. Not surprisingly, the Scottish connection to this work was not neglected! and his slides showed the skills of early glass blowers. This lecture was sponsored by Lumitron Ltd.

The ICTA—Dupont Award Lecture was also delivered by a previous chairman of the TMG, Dr David Dollimore, (now at Toledo, Ohio) on “The Effects of temperature dependent factors upon Mechanical and Surface Properties of Solids”. Introducing him, Dr Pat Gallagher recalled all David’s many published contributions to thermal analysis and his lively participation at many meetings. The lecture discussed the theoretical and practical measurements and the numerous applications in industry where major tools used are those of thermal analysis.

The Poster Sessions were extremely lively and obviously very well produced by the contributors. Very often they started early and continued until other lectures forced a halt.

The Plenary lectures covered all aspects of thermal analysis, from polymers to superconductors, from earth sciences (by Dr David Morgan) through calorimetry, ceramics, computing and kinetics. Several lively workshops on superconductors, kinetics, organic compounds and calorimetry were held and Dr Edith Turi conducted a most vigorous discussion on the need for Education in thermal analysis, and pursued her theme through to her closing lecture.

To attempt to single out any lecture, or even to sample the nearly 200 contributions would be impossible. With five parallel sessions each morning and afternoon an enormous field was covered.

It was an honour for the TMG to present its own award to Dr Michael Reading of ICI Paints, for his essay entitled “The Kinetics of heterogeneous solid state Decomposition Reactions: A New Way Forward?” This lecture was extremely well presented to a large and enthusiastic audience who filled one of the lecture rooms.

Congratulations Mike!

Besides the scientific aspects of the meeting, the social side did not go missing. The chance to sample Israeli wines and food, to enjoy an Israeli Folklore Dance exhibition (and join in!) was a welcome bonus. The highlights were the reception and visit to the Israeli Museum and the Shrine of the Book, and most especially the Tour of the Old City, despite many of us being 'marooned' for an extra hour outside the Dung gate, watched by armed members of the security forces.

The Congress Banquet typified this Congress. The tables had a happy mixture of friends from all over the world, who extended their knowledge of each others' work and homelands throughout the excellent, multi— national meal. Nor was our education and science neglected since our after—Banquet lecturer was Dr Hans—Ceorg Wiedemann on 'Ancient Oriental Artefacts'. This colourful and entertaining lecture rounded off a delightful evening.

It was a most successful Congress on every level, and my only hope is to visit Israel again and see more of the country, the sites which were toured by those accompanying persons, like the Mount of Olives and a Kibbutz, also to renew the friendships of the thermal analysts in Israel.

Shalom.

Peter Haines

ROBERT CAMERON MACKENZIE - HONORARY MEMBER OF ICTA

The following citation was read by Professor S St J Warne, Acting President, at 9th International Congress on Thermal Analysis, Jerusalem, 22 August 1988 on the occasion of the conferment of the first honorary membership of ICTA.

“Robert Mackenzie, outstanding scientist, humanist, mentor and friend to so many, was born on the farm of Wester Seafield, Tarbat, some 30 miles northeast of Inverness, Northern Scotland, on 7 May 1920. He was educated at Tarbat Old Public School and then at the Tain Royal Academy. From there he proceeded to the University of Edinburgh where he graduated with a First Class Honours Degree in Chemistry in 1942. Robert was awarded a PhD at the same university in 1944 for studies in gas—phase reaction kinetics, and then began his long and productive association with the Macaulay Institute for Soil Research in Aberdeen.

His early work at the Macaulay Institute was concerned with laboratory studies of clays, especially their pre—treatment for identification by X—ray diffraction. In 1948 he set up a separate section to deal specifically with physico—chemical investigations of soils and, when several laboratory sections were amalgamated in 1959 to form a Department of Pedology, he was appointed Head — a position he retained until his retirement from the Macaulay in 1983. In recognition of his original contributions to clay mineralogy he was awarded a DSc degree from the University of Edinburgh in 1957.

Robert Mackenzie has been associated with many developments in the methodology of laboratory investigations, not least in thermal analysis. When, at an early stage in his career at the Macaulay Institute, the opportunity arose to assess the research potential of differential thermal analysis he took up the challenge with enthusiasm. Much of his early work formed the background to the monograph “The Differential Thermal Investigation of Clays’ published

by the UK Mineralogical Society in 1957, of which he was the editor. Although he was later to edit an extended work on DTA for Academic Press (volumes I and 2 published in 1970 and 1972), the monograph long remained one of the main reference books on thermal analysis. His methodical filing and assessment of DTA results at the Macaulay Institute also formed the basis of the SCIFAX punched—card data index published by Cleaver—Hume Press in 1965. In addition to these major contributions to the science of thermal analysis, his publication list contains over 100 scientific papers and review articles on clays and thermal analysis, the two main themes of Robert's outstanding career.

His achievements in these fields have led to widespread national and international recognition. Robert is a Fellow both of the Royal Institute of Chemistry and The Royal Society of Edinburgh. He received the first Mettler Award in 1968, the Netzsch—GEFFA Award in 1982 and the ICTA—DuPont Award in 1985. A tribute of particular personal satisfaction was the receipt of the 15th Society for Analytical Chemistry Gold Medal in 1980. Other distinctions include the *a-tard* of Archiginnasio of the City of Bologna during the International Clay Conference there in 1981, the Emanuel Boricky Medal from the Faculty of Science, Charles University, Prague, during a European Clay Groups meeting in 1983 (to add to the Sixth Centenary Medal presented to him in 1961), and appointment as the first Distinguished Member of the UK Clay Minerals Group, also in 1983.

Robert's scientific reputation coupled with that of the Macaulay Institute itself, led to a large number of visits from scientists overseas, both of a passing nature and for longer periods of attachment and for collaborative research. He has also responded to many requests for lecture tours and advisory visits and has held Visiting Professorships at the Universities of Cairo, Riyadh and Jordan. Robert has speaking and reading knowledge of French, German, Spanish, Italian and Russian. This flair for languages, based on a traditional grounding in Latin, has been invaluable not only for enlarging and consolidating his international contacts but also for furthering his scientific interests. Robert's knowledge of Latin has also been useful in another of his major interests, the history of thermal analysis and clay mineralogy, where he has made many contributions over the years.

It is wholly appropriate that Robert Mackenzie should be the first Honorary Member of the International Confederation for Thermal Analysis. He has been associated with ICTA since its inception in 1965 at the first International Conference on Thermal Analysis at Aberdeen (of which he was a joint organiser)

and its subsequent formal establishment in 1968. He was Treasurer 1965—80, Chairman of the Nomenclature Committee 1965—82, and Secretary of the Standardisation Committee 1966—72. He has also actively participated in the work of the Publications Committee. From 1984 to 1986 he was Editor—in—Chief of ‘Thermal Analysis Abstracts’ (and is at present Assistant Editor) and from 1986 has been Editor—in—Chief of ICTA News.

What is quite remarkable is that this long and valued service to ICTA has been carried out in parallel with equally devoted work for other bodies associated with thermal analysis and clays, lie was the first Chairman of the Nomenclature Committee of the Association Internationale pour Etude des Argiles (AIPEA) from 1958 to 1966 and was its President from 1978 to 1981. He has also served as Secretary (1949—1956) and Chairman (1972—1975) of the Clay Minerals Group, and as Editor of the Group’s journal ‘Clay Minerals Bulletin’ from 1959—1964 (and he is still a member of the Editorial Board of its successor, ‘Clay Minerals’). He has been involved in the organisation of many international conferences — often as convenor of the scientific programme — where his efficient and diplomatic approach has been a notable asset.

Despite this multiplicity of tangible contributions, it is perhaps his humble and caring contributions on a personal level which have had an even greater impact. Innumerable thermal analysts have felt the warmth of his encouragement, support, enthusiasm, advice and friendship, which has so willingly been extended to so many for so long. As one of these who owe much to Robert Mackenzie, it is a pleasure to call on him to come forward to receive the first Award of Honorary Membership of the International Confederation of Thermal Analysts.”

ICTA STANDARDISATION COMMITTEE

Edward Charsley, a past chairman of the TMG, is the newly elected chairman of the ICTA Standardisation Committee. He would like to establish contact with individuals or organisations that are working on new standard materials or methods in any area of thermal analysis.

He can be contacted at the Thermal Analysis Consultancy Service, Leeds Polytechnic, Calverley Street, Leeds LS1 31W. Telephone 0532 448234 or 0532 448236.

ANALYTICON '88

The TMG organised a session at Analyticon '88 at the Olympia Conference Centre, London as part of British Laboratory Week. The session, held on 13 October 1988, dealt with 'Thermal Methods for Polymers and Electronics'.

Lectures were given by Dr W W Wright (Royal Aerospace Establishment) on 'The Role of thermal analysis in polymer degradation studies'; Miss L M Moore (Dow Chemicals, Germany) on 'Thermal Analysis of polyethylene pipe'; Mr R I Appleton (British Telecom) on 'Thermal Analysis of Electronic Materials'; and Dr J Irvine (University of Aberdeen) on 'Thermal Analysis of the high temperature Superconductor $\text{YBa}_2\text{Cu}_3\text{O}_x$ '



“Taking charge of his flock”

TMG Chairman Peter haines at Ben Gurion Airport rounds up Steve Warrington (whose new job is described on page 7)

THERMAL ANALYSIS ABSTRACTS

The Editor of TAA is always on the lookout for new abstractors to join the international team who currently scan the major journals worldwide for papers of thermoanalytical content and interest. Abstractors are paid 3.00 Swiss francs per published abstract. Regular contributors will know that TAA has recently started to publish occasional reviews on topics of thermoanalytical interest. A fee is paid for commissioned articles. Anyone wishing to contribute a review article should contact the Editor suggesting a possible title. Titles which have already appeared are:

“Application of Thermal Analysis to Inorganic Materials of Interest to the Electronics and Communications Industries” P K Gallagher (USA), Volume 14, No 3 (1985).

“Applications of Thermal Analysis in The Study of Catalysts.” G C Bond and M R Gelsthorpe (UK), Volume 14, No 5 (1985).

“Pharmaceutical Applications of Thermal Analysis”. J E Fairbrother (UK), Volume 15, No 3 (1986).

“Thermal Analysis in Evaluating Latent Heat Storage Materials.” J G Dunn and R S L Willix (Aust), Volume 16, No 1 (1987).

“The Application of DTA/DSC to Problems associated with Materials of Historical or Archaeological Significance “
H I Pope (UK), Volume 16, No. 4 (1987).

“Applications of Thermogravimetry in Mineralogy, Metallurgy and Geology.”
S StJ Warne, H J Hurst, and W I Stuart (Aust), Volume 17, No 1 (1988).

“Applications of Thermal Analysis to Asbestos and its Alternatives.” A A Hodgson (UK), Volume 17, No 4 (1988).

All responses please to the address below:—

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