

## NUMBER 2, 1982

Since the last newsletter there have been two international conferences: the 2nd European Symposium on Thermal Analysis (ESTA 2) and the 7th International Conference on Thermal Analysis (7th ICTA). The large attendance at both these conferences indicates that thermal analysis is a flourishing science and plans are already in hand for the next meetings. This year also saw the 7th Thermal Analysis School which was a five day residential course arranged by the TMG. Following our intention expressed in the first newsletter, there is a report on the ICTA Nomenclature Committee. It has been prepared by R.C. Mackenzie who chaired this committee from the time of its inception in 1965 through to his resignation this year. This newsletter has comments from the chairman of the TMG and a brief account of the visit to Australia by the immediate past chairman. It is a pleasure to be able to include in this issue notice of awards made to members of the group. Once again we invite contributions to the newsletter in the hope that it will achieve its object of keeping members in touch with the activities and thoughts of the group.

*This newsletter is sent free to members of the TMG. If you would like to be kept informed of forthcoming events but are not a member, join the Group by filling in the application form.*

## CHAIRMAN'S COMMENTS

The relatively small world of thermal analysis has undergone rapid change over the last few years with the introduction of microprocessors and undoubtedly will continue to develop further. In days of rapid advance, opportunities for scientists to meet become particularly important. One of the primary aims of the TMG is to provide a congenial climate for such meetings. I hope we do this reasonably well by offering a varied programme of activities at a number of different venues. Certainly the support given to recent events leads me to believe that we are moderately successful and are maintaining the community spirit which has always been a feature of thermal analysis in this Country. Our recent venture into the International scene has further widened our horizons and led to new friendships. This must be good and if during my chairmanship the TMG becomes even better at serving the scientific needs of its members then I will be very satisfied.

G.M. Clark

## COMMITTEE NEWS

The committee met three times during the year. A major relief was the undoubted success of ESTA 2 held at Aberdeen University. The committee recognised that this was largely due to F.P. Glasser, chairman of the organising committee and D. Dollimore, chairman of the scientific committee who devoted so much time to its planning. The financial position of the TMG is now secure as a result of the high attendance at this meeting. The future of ESTA seems to be assured: a committee was established at ESTA 2 to promote exchange of information between the European thermal analysis groups and to ensure the continuity of the symposia.

Members of the committee concerned with the Thermal Analysis School were G.M. Clark, L.F. Jones, J.N. Leckenby and T.B. Smallwood. The arrangements were finalised with D.V. Nowell of Hatfield Polytechnic early in the year. P.G. Laye attended meetings of the thermal analysis panel of the Institute of Petroleum as a representative of the TMG. There is comment elsewhere in the newsletter about this newly formed panel. It is hoped that there will be fruitful co-operation between the panel and the TMG in areas of common interest. For the future, the committee has been concerned with plans for the meeting at Fulmer Grange on the applications

(continued on page 4)

## PRESENT OFFICERS AND COMMITTEE MEMBERS 1981—82

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Members: Dr. R.R. Baker, British American Tobacco Ltd.

Dr. J.S. Crighton, School of Studies in Textile Technology,  
University of Bradford.

Dr. F.P. Glasser, Department of Chemistry, University of  
Aberdeen.

Dr. L.F. Jones, Johnson Matthey Chemicals Ltd.

Mr. J.N. Leckenby, Du Pont (U.K.) Ltd.

Mr. T.B. Smallwood, Blue Circle Technical Research  
Division.

Immediate Past Chairman: Mr. E.L. Charsley, Stanton Redcroft Ltd.

Co-opted: Dr. A.A. Hodgson, Cape Asbestos Fibres Ltd.

Dr. R.C. Mackenzie, Macaulay Institute of Soil Research.

of computers and microprocessors and a one day meeting in London on the application of thermal analysis to the conversion and use of energy. The latter is a joint venture with the Thermal Analysis Panel of the Petroleum Institute. It is hoped that it may be possible to arrange a joint meeting with a European thermal methods group towards the end of 1983. Finally, the committee announced that the 2nd TMG award had been won by T.J. Taylor.

#### TMG AWARD

The object of the award was announced in the first newsletter. Briefly, it is to encourage a young scientist to participate in a conference with a wide international attendance devoted solely to thermal analysis or containing a section devoted to thermal analysis. The first award was associated with ESTA 2 and was won by E. Patterson of the Macaulay Institute of Soil Research.

The second award has been made to T.J. Taylor for his essay entitled 'Studies on the Degradation of Nickel Nitrate Hexahydrate Using Thermal Methods'. Mr. Taylor graduated from the University of Salford and at present is a research student working for his Ph.D. degree under the supervision of D. Dollimore. The award was made in connection with the 7th ICTA and consisted of £150 and an illuminated certificate. The presentation was made at the opening ceremony of the Conference.

#### NETZSCH GEFTA AWARD

R.C. Mackenzie was the winner of the Gesellschaft fur Thermische Analyse award for 1982. The presentation was made at the opening ceremony of the 7th ICTA and later in the Conference Dr. Mackenzie delivered a lecture entitled "Down-to-Earth Thermal Analysis".

#### NEWS OF MEMBERS

E.L. Charsley, immediate past chairman of the TMG visited Australia in October 1981 where he gave keynote lectures in a number of successful one day meetings held by the Australian Thermal Analysis Society. Mr. Charsley's lectures dealt with industrial applications of thermal analysis, calibration of thermal analysis equipment and studies of inorganic fuel—oxidant systems.

ROYAL SOCIETY OF CHEMISTRY

ANALYTICAL DIVISION



## THERMAL METHODS GROUP AWARD

This, the Second TMG Award, was presented to

MR. THOMAS J. TAYLOR

of the Department of Chemistry and Applied  
Chemistry, University of Salford, for his essay  
entitled "Studies on the Degradation of Nickel  
Nitrate Hexahydrate Using Thermal Methods".

The presentation was made at the Seventh  
ICTA Conference in Kingston, Canada,  
August 1982.

A handwritten signature in cursive script, appearing to read "L. Grayfield".

President, Analytical Division

A handwritten signature in cursive script, appearing to read "GmClade".

Chairman, Thermal Methods Group

## ICTA NOMENCLATURE COMMITTEE

In 1965 the 1st International Conference on Thermal Analysis in Aberdeen decided that a Committee to be chaired by the writer and organised “in conjunction with the Thermal Analysis Group” (the name of the TMG at that time) should consider the whole aspect of thermoanalytical nomenclature. The TAG Committee accepted this remit and constituted the Nomenclature Committee of ICTA as a sub-committee of the Group, thus gaining several administrative advantages that overcame lack of financial support from ICTA. Three year’s hard work, involving many meetings, much argument and correspondence with interested scientists in other, particularly English—speaking, countries, resulted in a report promulgating rules on general terms, names and definitions of techniques. This was adopted by the 2nd Conference at Worcester, Mass., U.S.A., in 1968. Nomenclature of equipment, curves and simultaneous techniques formed the subjects of the Second and Third Reports accepted at Davos, Switzerland, in 1971 and Budapest, Hungary, in 1974, respectively. Subsequently, the Committee re-evaluated all previous work and introduced a revised classification scheme and definition system at the 5th Conference in Kyoto, Japan. Finally, & Fifth Report recommending standard symbols received approval at Bayreuth, Germany, in 1980.

Acceptance of ICTA as an Associated Organisation of the International Union of Pure and Applied Chemistry (IUPAC) led to close contacts between specialist committees of the two bodies and to endorsement by IUPAC of the first three reports of the Nomenclature Committee as definitive for international use. The Fourth Report is currently being considered by IUPAC. Sub-committees in other language-speaking areas have produced nomenclatural schemes based on the ICTA model for most of the world’s major languages.

The Committee itself has grown from 5 in 1965 to 31 today, most of the overseas members being necessarily Corresponding Members. Tribute is due to the TMG for its initiative and for always being in the forefront of nomenclature rationalisation and to C.J. Keattch who has served the Committee as a most efficient and active Secretary.

R.C. Mackenzie

The five reports of the Committee will be found in

*Talanta*, 1969, 16, 1227;

*J. Therm. Analysis*, 1972, 4, 343; and 1975, 8, 197;

*Thermochim. Acta*, 1979, 28, 1; and 1981, 46, 333.

## ESTAC

This is the abbreviation for European Symposium of Thermal Analysis and Calorimetry. It replaces ESTA and marks the wish of the ESTAC Committee to include calorimetry in its next meeting which will be called ESTAC 3. As mentioned earlier in the newsletter the Committee was established at ESTA 2. It has representatives from the European Thermal Analysis groups with E.L.Charsley as the elected chairman. The Committee met at 7th ICTA where it was decided that the 3rd Symposium would be held in Switzerland in 1984. A September date is planned and a circular will be published shortly. ESTAC 3 is being organised by the Swiss Thermal Analysis and Calorimetry Group, Schweizerische Gesellschaft für Thermoanalytik und Kalorimetrie, and further details will be available from Dr. E. Marti, Ciba-Geigy Ltd., K-27. 5.02, P.O. Box, CH-4002, Basel, Switzerland.

## NEWS FROM ICTA

The 7th ICTA attracted over 260 participants from some 27 countries. The Conference was sponsored by the Chemical Institute of Canada and the North American Thermal Analysis Society. It was held on the magnificent campus of Queen's University, Kingston, Ontario. At the opening ceremony awards were presented to P.K. Gallagher, Bell Laboratories, U.S.A. (Du Pont— ICTA Award) and U. Chiu, Du Pont Polymer Division, U.S.A. (Mettler—NATAS Award) in addition to the awards already mentioned to R.C. Mackenzie and T.J. Taylor. The new officers of ICTA are:

President: P.K. Gallagher

Vice-President: H.J. Seifert

Secretary: S. Yariv

Treasurer: J.S. Crighton

J.H. Sharp is the new chairman of the Nomenclature Committee. Dr. Sharp is a member of the TMG and has served on this Committee for a number of years and is an Editor of the Thermal Analysis Abstracts. E.L. Charsley is the new affiliate member for the TMG. The Conference Proceedings will be available soon, published by Academic Press.

#### INSTITUTE OF PETROLEUM

A panel (ST-G-9) has been established under the auspices of the Institute of Petroleum to study the application of thermal methods to the testing of petroleum products.

The aim of the panel is to produce reliable methods which will be acceptable to the oil companies and their customers. Methods currently under discussion are:

- (i) Determination of oxidative stability of lubricating oils by DTA and DSC.
- (ii) Determination of volatility of lubricating oils by TG.
- (iii) Measurement of wax appearance temperature of gas oils by DTA and DSC.

For further information contact Dr. R. J. Howes, BP Research Centre, Chertsey Road, Sunbury on Thames, Middlesex TW16 7LN, Tel . No. 09327-81234, Ext. 8034.

#### RECENT MEETINGS

Fundamentals and Applications of Thermochemical Methods of Analysis, Including Thermodilatometry — 13—14th November 1980 at Fulmer Grange, Stoke Poges, Berks

Although this meeting was held some time ago, readers may be interested to know that the proceedings have been published since the last newsletter. The reference is *Amal. Proc.*, 1981, 412.

ESTA 2 1-4th September 1981 at University of Aberdeen, Aberdeen, Scotland

Nearly 200 participants from 27 countries arrived in Aberdeen where the scene was set for an excellent conference. The plenary lecture was given by H.R. Oswald, University of Zurich, on "Quantitative Thermal Analysis and Reactivity of Solids".

The main body of the programme comprised nearly 150 lectures presented in three concurrent sessions. Whilst on the social side the receptions and excursions provided a perfect balance. The proceedings are published by Heyden and Son Ltd.

ESTA was followed by an International Thermal Analysis Workshop sponsored by the North West Thermal Methods Group and the North American Thermal Analysis Society at the University of Salford, 7-9th September 1981. For the 40 participants who attended this intensive course, the speakers, coming as they did from both Europe and the U.S.A., provided a truly international flavour.

Experimental Techniques in Thermal Analysis — 20th November 1981 at the Scientific Societies Lecture Theatre, Savile Row, London W1

This was a one day meeting covering the whole range of experimental techniques. Also included in the meeting was the retiring chairman E.L. Charsley's address "Thermal Analysis on Pyrotechnic Systems" and the annual general meeting of the TMG. The choice of London as a venue has the advantage of easy accessibility and together with the low cost of the meeting proved to be a recipe for success. The TMG committee intends to repeat the formula in January 1983.

7th Thermal Analysis School - 19—23rd April 1982 at Hatfield Polytechnic, Hatfield, Herts

This is a triennial event with the aim of giving scientists and technicians new to thermal analysis a solid background in the theory and practice of the technique. The course was residential and attracted 20 participants from private industry and government establishments. Following an introductory lecture there were 10 lectures on the theory and practical application of thermal analysis in various fields. Interspersed with the lectures were practical sessions including case studies relevant to the participants' own fields of activity. The course dinner was an Elizabethan banquet in the Old Palace of Hatfield House where yet another award was gained by a member of the TMG. D.V. Nowell, local organiser of the school was 'raised to the peerage' by 'Good Queen Bess'.

#### FUTURE MEETINGS

Applications of Computers and Microprocessors in Thermal Analysis —11-12th November 1982 at Fulmer Grange, Stoke Poges, Berks

The programme for this meeting has been finalised. It includes an invited lecture from D. Betteridge and a visit to Perkin Elmer Ltd as part of their anniversary celebrations of 25 years in this country. The annual general meeting of the TMG will be held on 12th November.

Application of Thermal Analysis to the Conservation and Use of Energy - 6th January 1983 at the Scientific Societies Lecture Theatre, Savile Row, London W1

This meeting is in conjunction with the Thermal Analysis Panel of the Institute of Petroleum. Members of the TMG should have received notice of the meeting. Short contributions are invited on any aspect of the subject. Registration is £20. The meeting will start at 10.30 a.m. and the registration fee will include morning coffee, buffet lunch and afternoon tea. Further details may be obtained from the Hon. Secretary, Dr. C.J. Keatch.

Pyrolysis — 14th September 1983 at the Scientific Societies Lecture Theatre, Savile Row, London W1

This is a joint meeting with the Chromatography and Electrophoresis Group. Details of the programme have not yet been finalised.

Other meetings which may be of interest to members of the Group are as follows:

SAC 83 — 17-23rd July 1983 at the University of Edinburgh, Edinburgh, Scotland

This international conference and exhibition on analytical chemistry is organised by the Analytical Division of the Royal Society of Chemistry, formerly the Society for Analytical Chemistry. The scientific programme includes, plenary lectures, invited lectures and contributed papers.

TMG will present a short (1/2 day) symposium on “General Application of Thermal Methods in Analytical Chemistry” and L.S. Bark and C.J. Keatch have been invited to lecture. Registration forms are available from Miss P.E. Hutchinson, Secretary of the Analytical Division, Royal Society of Chemistry, Burlington House, London W1V 0BN.

Vacuum Microbalance Conference — 31st August - 2nd September 1983 at Plymouth Polytechnic, Plymouth, Devon

Details are available from Dr. S.A.A. Jayaweera, School of Environmental Sciences, Plymouth Polytechnic, Plymouth, Devon PL4 8AA.