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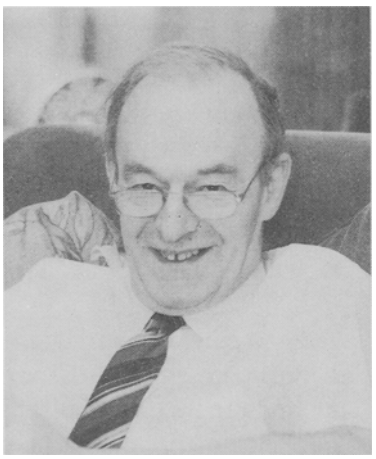
ANDREW KNOX GALWEY ON THE OCCASION OF HIS SIXTIETH BIRTHDAY



Andrew Galwey was born in Dublin, Eire, on 13th March 1933 and lived there until his parents moved to England in 1942. He attended The Grammar School, Midhurst, Sussex and obtained an Oxford School Certificate in 1949.

Study, on a part-time basis, at The West Ham College of Technology, an Internal College of the University of London, led to the award of the degree of Bachelor of Science (Special Chemistry) of the University of London with First Class Honours in 1955. While studying, Andrew was employed first by British Railways, but found it difficult to benefit from evening classes after an early start at work, so he obtained employment in the analytical laboratories of the Manufacturing Chemists, F. W. Berk & Co. Ltd., London, until he was awarded a grant to study full-time at the same College during the 1954–5 session.

Andrew continued his studies for a research degree under the supervision of Dr. P. W. M. Jacobs at Imperial College (London University) between 1955 and 1957. He was awarded the Degree of Doctor of Philosophy (University of London) in 1958.

Dr. Galwey was appointed to an Assistant Lectureship in Physical Chemistry in the Queen's University of Belfast, Northern Ireland, in October 1957. Subsequent promotions were to a Lectureship (1960), Senior Lectureship (1970) and to Reader (1974). He was Vice-Chairman, of the School of Chemistry (1986–1989) and Head of Teaching (1990–1992).

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During periods of study leave while on the staff of Queen's University, he was Visiting Lecturer in Physical Chemistry in the University of Leeds (1969) where he worked in collaboration with Professor Peter Gray, and in 1977 he worked with Professor G. G. T. Guarini in the Institute of Physical Chemistry of the University of Florence, Italy.

Research activities

The greater part of Dr. Galwey's research activity has been concerned with kinetic and mechanistic investigations of reactions involving solids, as is evident from the list of his publications which follows. These studies can be grouped under the sub-headings: (i) decompositions of solids, (ii) heterogeneous catalytic reactions, and (iii) geochemistry.

Decompositions of Solids

Dr. Galwey's studies have been concerned with kinetic measurements of the reactions occurring on heating metal salts of carboxylic acids (oxalates, formates, mellitates, malonates and others). The objective was to identify and to characterize the factors controlling salt breakdown in this group of substances, each one of which exhibits individual behaviour. Some patterns of reactivity were identified. More recently, the application of advanced microscopic techniques has provided evidence that such reactions may sometimes involve the intervention of a liquid phase. Studies in this field are continuing. Recent publications in journals of the Royal Society (London) contain some magnificent electron micrographs. One of Dr. Galwey's micrographs appeared on the cover of Nature (London) and another won a prize for its artistic merit.

Interests in this area have expanded to include comparisons with other related decomposition reactions, notably of alums and chromates. A book giving a comprehensive, critical and extensive review of the field appeared in 1980. A more recent critical reappraisal of the theory of this field was presented in the form of an invited Plenary Lecture at the 7th International Conference on Thermal Analysis (Kingston, Ontario, 1982).

Heterogeneous Catalytic Reactions

Dr. Galwey was introduced to this field during a collaboration with Professor C. Kemball, at the Queen's University of Belfast. These studies were concerned with the identification of the nature of species adsorbed on nickel metal surfaces. Subsequent work, initiated by Dr. Galwey, investigated aspects of the chemistry of iron and nickel carbides, and the reactions of these substances with oxygen. Another project in the field of heterogeneous catalysis, developed

later, concerned the reactivity of organic species chemisorbed on oxides or clays. Application of a new technique permitted a kinetic investigation of the probable participation of intermediates adsorbed on mineral surfaces in petroleum genesis. Dr. Galwey has also provided a comprehensive review of compensation behaviour in heterogeneous reactions.

Geochemistry

The generation and growth of minerals during metamorphic reactions in rocks may be expected to proceed under the control of factors similar to those applicable to the laboratory reactions of solids. A number of papers, published in collaboration with Dr. K. A. Jones of the Geology Department, Queen's University of Belfast, report applications of these ideas to naturally occurring metamorphic rocks. The petroleum genesis investigations, mentioned above, could also be included here. A paper has also discussed the reasons for the blue colouration of natural fluorite (Derbyshire Blue John).

General scientific activities

Dr. Galwey is the author of 'Chemistry of Solids', an undergraduate textbook, published by Chapman and Hall, London, in 1967, which has also appeared in a Japanese translation.

In 1972, Dr. Galwey was awarded the degree of Doctor of Science by the University of London for a thesis 'Some Reactions Involving Solids'.

Dr. Galwey has actively participated in the affairs of the professional body of chemists, both locally and nationally. He was Assistant Secretary (1963–6) and later Secretary (1966–9) of the Royal Institute of Chemistry (RIC) (Belfast and District Section), and Secretary/Treasurer of the Ireland Region (1975–81); joint Chemical Society (CS)/RIC Northern Ireland Section Committee Member 1977–81; and RIC Council: Ireland Region Member, 1979–81.

After unification of the CS and RIC to form the Royal Society of Chemistry (RSC), he was Ireland District Member of the Council of the RSC, 1980–2 and served on the Council of the Faraday Division of the RSC from 1982–85.

Dr. Galwey has been active in organizing in-training courses for school teachers and courses for school pupils to undertake project work in the University. He regularly lectured in local schools on 'Petroleum' and on 'Soils', which were optional topics of the A-level GCE syllabus.

He has acted as external examiner for many PhD and MSc theses submitted to Universities in Britain and abroad (New Zealand, South Africa and India), and regularly acts as referee for articles submitted to learned journals.

Dr. Galwey has served on many specialist committees including the International Committee on the Reactivity of Solids (which oversees the 'Reactivity of

Solids' Conference held every four years); the Editorial Board of the journal 'Reactivity of Solids', published by Elsevier, Amsterdam; and the Nomenclature Committee of the International Confederation for Thermal Analysis (ICTA).

Dr. Galwey has presented Plenary or Invited Lectures at: the 25th International Meeting of the Société de Chimie Physique, Dijon, France, 1974; the 7th International Conference on Thermal Analysis, Kingston, Ontario, Canada, 1982; the 10th International Symposium on Reactivity of Solids, Dijon, France, 1984; the 20th Meeting of the Royal Spanish Society of Physics, Sitges, Spain, 1985; the International Summer School organized by the Italian Association of Calorimetry and Thermal Analysis, in Belgirate, Italy, 1984; the Hungarian Academy of Sciences, Budapest, 1979; the Conference on Contemporary Problems on the Reactivity of Solids, Novosibirsk, Russia, 1988; the European Symposium on Thermal Analysis and Calorimetry, Nice, France 1991; British Association for the Advancement of Science Meeting, Belfast, 1987; and was also organizer of, and participant in, the Faraday Division Conference on Solid State Reactions which formed part of the Annual Congress of the Royal Society of Chemistry, Belfast, 1990.

A personal view

The preceding pages give only a glimpse of Andrew Galwey the person. As guest editor of this Special Issue, I was overwhelmed by the response to my letters inviting papers. Not only were many people very enthusiastic about contributing, but also the replies contained so many comments showing the respect and affection felt by Andrew's colleagues. Those who could not contribute were genuinely disappointed and added their good wishes to those of the contributors.

Twenty-three years ago, I received my first letter from Andrew in reply to an enquiry about the possibility of spending my first period of study leave in his laboratory. Unlike many such plans, arrangements went smoothly and my family and I set out rather apprehensively, leaving the familiar 'problems' of our own country for the much publicized 'problems' of Northern Ireland.

I can never forget the magic that awaited us. We travelled for hours and hours, with delay after delay, and arrived in the dark and cold of winter. Andrew and Kathleen had been at the airport for hours trying to trace our progress. We were whisked to warm rooms where we collapsed and slept deeply. When we woke, the whole world had changed. Through the windows we saw the rows of red and grey houses, bare trees and fallen leaves in puddles of water. Soon Andrew reappeared, to check on us and to show us something of this fascinating new world. Memories are trapped in the slides that we brought back with us. Christmas in the weather only seen in imported Christmas cards; traditional tea

in the warmth of Andrew and Kathleen's home; Christmas programmes on TV, which, itself, was a novelty to all of us.

Andrew and Kathleen did so much to make the magic last throughout the year, taking us to see many of the sights of Northern Ireland, such as the magnificent Ulster Folk Museum and the unforgettable Giant's Causeway. Gently and calmly they taught us how to get the best out of Northern Ireland in spite of the 'troubles'. Soon we found a small car and set out on more and more adventurous trips and eventually visited across the border, driving through what now seems like an endless green panorama of round towers, churches, castles, misty lakes, cliff-bound coastlines and little grey villages.

Being part of the Chemistry Department of the Queen's University of Belfast was magic of a different kind. Names from books and papers became real people. Pictures of instruments in brochures also became real and there were friendly people happy to show you how to use them, or to run your samples for you. Many hours were spent in the Electron Microscopy Unit learning some of the techniques used so successfully by Andrew and his students. Above all, there was the privilege of having someone like Andrew to discuss things with mainly chemistry of solids, but sometimes diluted with politics, last nights' TV programmes, travel, Irish history, books etc. etc.

I have been back to Belfast several times since 1971 and, each time, the magic returns as the plane parts the clouds, the green fields and picture houses appear, and the familiar face and warm greeting are there to meet me.

Between visits, the post has carried envelopes of all sizes in both directions -- sometimes overlapping in ideas as we have both set off on the same track -- sometimes the wrong track -- but no post is more eagerly awaited than those with the Ulster stamps and familiar handwriting.

In dedicating this special issue of the Journal of Thermal Analysis to Andrew Galwey on the happy occasion of his 60th birthday, I express the deep appreciation, respect and affection of his friends all over the world. We join in wishing him well for the future and thanking him for what he has meant to each one of us in the past.

Michael E. Brown
Guest Editor of this Special Issue

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