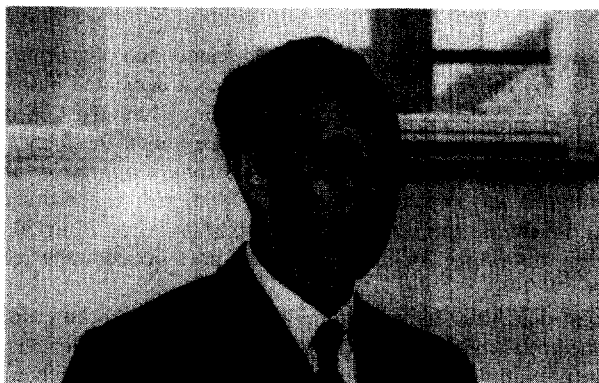


E. C. BATE-SMITH

1900–1989



Dr E. C. Bate-Smith, CBE, a founder member of the Editorial Board of *Phytochemistry* and first Chairman of the Phytochemical Society of Europe, died peacefully in his sleep on 8 May 1989. It is with deep sadness that we record the passing of one of the great pioneers of comparative plant biochemistry, who contributed so much to development of phytochemistry and food science both in the United Kingdom and internationally since the Second World War.

Bate-Smith was born in Kettering, Northamptonshire on 24 August 1900, being christened Edgar Charles. Since he could not abide either of these names he was always known to his many friends as E.C. After attending Wellingborough School, he was trained as a muscle physiologist at Manchester University. He then moved to Cambridge to Caius College where he obtained his Sc.D. and joined the Low Temperature Research Station. In 1933, he married the Director's daughter, Margaret Elizabeth Bate Hardy. He continued his work on meat, publishing a number of prestigious papers on muscle physiology until he was appointed Director in 1947. Realising that the administrative load would interfere with his physiological investigations, he switched his research field to phytochemistry. This was an opportune time to do so, since paper chromatography had just been invented and a method of rapidly surveying plants for their chemical constituents was now at hand for the first time. Being Director limited his opportunities to run chromatograms during the week days but he solved this problem by setting up chromatographic apparatus in his bathroom at home, so that no time was wasted.

Impressed by the demonstration by one of his LTRS staff, Miles Partridge, that sugars could be separated by chromatography, E. C. decided to see if the method would separate the anthocyanin pigments of the various *Dahlias* which he had been breeding in his garden over a number of years. He found to his delight that it worked and he published the results in a classic note to "Nature" 1948, Vol. 161, p. 835. A succession of elegantly simple papers followed which pointed out many of the facts we now take for granted: for example the relationships between structures and R_f values and the importance of identification and distribution of proanthocyanidins, flavonols and hydroxycinnamic acids in the extracts of hydrolysed leaf tissues. These investigations culminated in E.C. demonstrating for the first time how common these constituents were in the land plants. He showed that their distribution could be used both for taxonomic purposes and to indicate evolutionary advancement. His survey of over 1500 species of angiosperms from nearly one-half of the known plant families for the 10 common phenolic constituents was published in the "Journal of the Linnean Society (Botany)" in 1962 and 1968. His method of phenolic survey, affectionately designated as Bate-Smithery, has been the basis of all later studies of the natural distribution of phenolic compounds, especially flavonoids, right up to the present day. His approach helped to establish phenolic constituents as 'privileged molecules' in chemotaxonomic endeavours ever since.

His office as Director of the Low Temperature Research Station from 1947 to 1965 led to his taking a leading role in the development of food science as a University discipline in this country. His membership of the Council of the International Institute of Food Science and Technology meant that his influence was also felt overseas especially in Europe and in the States. His important contributions to food science were recognised in 1963 by the award of the CBE. Before his retirement from the LTRS in 1965 he was actively involved in the reorganisation of his research station as two new food research institutes, one at Norwich and the other in Somerset.

For most people who had led such a busy and active life as E.C., retirement at 65 would normally have been the occasion for relaxation and the enjoyment of hobbies. However, E.C. simply moved into a laboratory at the

Animal Physiology Institute at Babraham and continued to carry out active research, notably on the identification and quantitative estimation of plant tannins, right up to his 80th year. His concept of relative astringency of these phenolic polymers and his simple but elegant method of determining them using a few drops of his own blood demonstrated the essential simplicity of approach which characterized his whole attitude to scientific research. During his retirement he published a series of significant papers on the taxonomy and tannin content of plants. His Swan Song appeared in the journal *Phytochemistry* in 1984 in Vol. 23, No. 5, pp. 945–950. The title of this research review, 'Age and distribution of galloyl esters, iridoids and certain other repellents in plants' is indicative of his key interests throughout his life in tannin biochemistry, in chemotaxonomy and in the ecological function of secondary plant metabolites.

To have achieved fame in the separate research fields of food science and phytochemistry would seem to be enough for most men, but E.C. had many other interests as well. He was a dedicated plantsman, with a large garden full of interesting and unusual plants. He was also an expert botaniser and an artist. A very keen traveller, I remember standing on the pier in Stockholm waving goodbye to him as he joined the ferry to Helsinki, in order to visit a former Finnish student who had been at the LTRS. He was a strong supporter on the one hand of the Cambridge Philosophical Society, of which he was President from 1953–1955, and on the other of the Cambridge University Cricket Club at Fenners. An inveterate smoker, he never bought less than 25 or 50 at a time. The flat boxes were put to good advantage in the laboratory for research notes and I occasionally received letters written on these discarded packets.

Above all, E.C. was a most delightful and entertaining companion with an erudite knowledge of the world of art and science, who continued to throw out new thought provoking ideas whenever we met. He was an unusually kind, courteous and thoughtful man who was always ready to help and guide young researchers. He was an ideal collaborator and indeed his research partnership with Tony Swain at the LTRS, which was most fruitful in producing a series of important reviews, articles and research notes, lasted for well over 30 years. I was eventually privileged to join in this phytochemical confederation and remember with much pleasure chasing up some of E.C.'s discoveries of oddities, as he continued to survey the plant kingdom for their phenolic constituents.

His wise and inspiring leadership in particular of the Phytochemical Society, or the Plant Phenolics Group as it was then known, will always be remembered and he also provided much valuable guidance in the setting up and development of this Journal. Few phytochemists of the present generation will be aware of the very considerable debt we owe to E.C. in these respects. His death is a real loss to us all. His wife died in 1982, but he leaves a son to whom we now express our deepest sympathy.

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E.C. sniffing the flask surrounded by Prof. Bert Wagner, Ludwig Hörhammer and myself.



E.C. drinking Munich beer after eating liverwurst.