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OBITUARY

DR FRANCIS GEOFFREY HUGH LUPTON

16 July 1921–23 May 2006

Dr Lupton, a distinguished plant breeder, was editor of Experimental Agriculture for 11 years from 1984 to 1995

A personal recollection

My first encounter with Francis Lupton was as one of a group of students from Aberystwyth visiting the Plant Breeding Institute (PBI) at Cambridge, UK, as part of an Easter vacation tour in 1954. We were given a presentation, delivered with military precision, on wheat breeding by a tall, rather thin young man with a distinctly authoritative voice. Lupton had returned to Cambridge after the war to complete his interrupted studies, after seeing active service in the Middle East, Italy and Greece where he took part in some of the bitterest fighting, about which he characteristically said little. After graduating, he joined the PBI, under the directorship of G. D. H. Bell, in 1948. The Institute, which had previously been part of Cambridge University, had been hived off after the war to come under the aegis of the Agricultural Research Council. Lupton was assigned to the wheat breeding programme, thereby inheriting the mantle of Biffen and Engledow.

In the autumn of 1954, I returned to the PBI as one of a now extinct breed of Colonial Probation Officers, recruitment in those days requiring completion of one year of post-graduate studies at Cambridge followed by another at the Imperial College of Tropical Agriculture in Trinidad. Numerous generations of such beings were to pass through the guidance of Francis Lupton and his colleagues at the PBI. The more irreverent referred to this experience as being a 'Luptonian slave'. Several decades later (by which time I had joined the staff of the PBI), during a discussion, Francis was able to go to his filing cabinet and extract from his immaculate system a folder in which he had kept the results of the Zeleny tests performed by myself with a couple of fellow students. These tests provided the principal means at that time for screening wheat lines under selection in a preliminary assessment of bread-making quality.

In the post-war period and for a couple of decades following, wheat breeding in Britain did not achieve great commercial success and the PBI became better known for its barley breeding. The dominant variety of wheat in cultivation in

the UK for many years was the French variety Cappelle Desprez and in 1955 Lupton and Macer confirmed the genetic resistance of this variety to eyespot. Cereal breeding in the private sector in the UK at this time had not yet developed significantly before the introduction of Plant Variety Rights and the PBI, from its foundation, had had a dual role of conducting research in the related sciences and in plant breeding methodology, while at the same time seeking to produce varieties for commercial release. Lupton's first research interests were in disease resistance, particularly with yellow rust of wheat. As the Institute moved from an era in which a plant breeder was expected to be a jack-of-all-trades, a Plant Pathology Department was established under Richard Macer and Lupton shifted his research interests to the physiology of wheat. This led to fruitful collaboration with other institutes such as the Amersham Laboratory, which provided radioactive carbon (C^{14}) for studies on translocation patterns between tillers of wheat. Later collaboration with the Letcombe Laboratory and Rothamsted Experimental Station involved using radioactive isotopes of phosphorus and rubidium to study varietal differences in root development and efficiency – a notoriously difficult area in which to work. He also collaborated with the Weed Research Organisation in studying varietal differences in susceptibility to herbicides. A number of scientific papers resulted from this work.

His most notable contribution to wheat breeding in the UK was probably in laying the foundations for the development of adapted semi-dwarf varieties. Vogel in Washington State in the USA had started breeding material which derived its dwarfing habit from the Japanese variety Norin 10. He generously made his lines available to other breeders, but they were quite unadapted to UK conditions. From these, after solving various problems, Lupton created the basis for breeding semi-dwarf varieties of wheat in the UK. Such varieties of wheat were more resistant to lodging than the traditional types and were more efficient because they produced more fertile tillers and a higher grain to straw ratio. In 1977, the variety Hobbit was released (Francis was a great fan of Tolkien) followed by Bilbo and Durin. Although these varieties themselves did not achieve huge commercial success, they formed the basis of the programme from which Lupton's younger colleague John Bingham revolutionized the status of wheat breeding in the UK and abroad. Amongst varieties of a more traditional type Lupton also made a useful contribution to breeding for improved bread-making quality with the variety Maris Widgeon, and it was a matter of considerable satisfaction to him that this variety also became the preferred variety for the renovation of thatch-roofed cottages because of its straw qualities, thereby occupying a niche market.

Francis Lupton played a very active role in the international plant breeding community, most notably within Eucarpia (The European Association for Research in Plant Breeding). He was the country representative for the UK from 1965 to 1968, becoming Vice-President from 1968 to 1971 and finally its President from 1971 to 1974. In 1971, he organized a major conference in Cambridge and I vividly recall him addressing this group of distinguished European scientists as if

they were a party of rather unruly schoolchildren, threatening them with the dire consequences that would follow from any failure to be at the designated 'bus stops' at the appointed time. He travelled extensively, especially in the latter part of his career and one sabbatical involved a stay in New Delhi in 1976 as a guest of the Indian Agricultural Research Council. It was characteristic of Francis that he sent regular letters of considerable length back to the Institute, all in beautifully clear handwriting, detailing his work and cultural experiences without a single correction.

Within the UK he was active in the Association of Applied Biologists and following his election to the Council he later became Programme Secretary and for a number of years, served as General Secretary. When he eventually resigned from this post he was asked to become the President of the Association and on his retirement he was elected an Honorary Life Member. After his retirement, he was invited by Cambridge University Press to edit Experimental Agriculture, a job requiring him to master the alien technology of word-processing. He edited this journal with distinction for 11 years from 1984 to 1995. Shortly before his retirement Lupton undertook the major task of partly writing and editing the definitive, collaborative book "Wheat Breeding: its Scientific Basis" which was published in 1987. A revised edition was under preparation at the time of his death.

Within the PBI, Lupton had progressed to be Head of the Cereals Department and from 1978, combined this role with being Deputy Director. He believed in leading from the front and would not expect his staff to do anything that he would not do himself. Fortunately, he retired before political dogma led to the privatization of the Institute and set it on the road which, after a promising start, resulted in its eventual destruction. He left before 'agriculture' became a tarnished word amongst politicians, administrators and scientist-politicians so that it no longer appears in the name of the relevant research council or in that of the controlling government department in the UK;

'. . . O brave new world,

That has such people in't'

Francis Lupton was an engaging colleague with a great sense of humour that was often directed against himself. His parsimony was legendary but appropriate in the early days when the PBI budget operated on a shoestring. It was an image which he carefully fostered. The recycling of laboratory and field materials was elevated to an art-form and on tour abroad he probably achieved the world record for the extended use of a tea bag. We would have discussions about the relative cost of a telephone call as opposed to a postcard and, on field expeditions, any stop for refreshments would result in a meticulous apportionment of costs. Behind this façade lay a gentle understanding of his colleagues' personal problems and unobtrusive help was always on hand to those who needed it.

In his domestic life and in retirement Francis was very active in supporting his local community wherever that happened to be, whether as a dedicated member of his church or as an organizer of the Boy Scouts or as a member of the Wild Flower Society. He was totally uninterested in any form of sport and one of his more unusual interests was in tapestry, a skill which he acquired while hospitalized during the war in Italy. This considerate and caring man is sadly missed by colleagues and friends alike.

Graham Jenkins

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