Ernest Thomas Sinton Walton

1903 - 1995

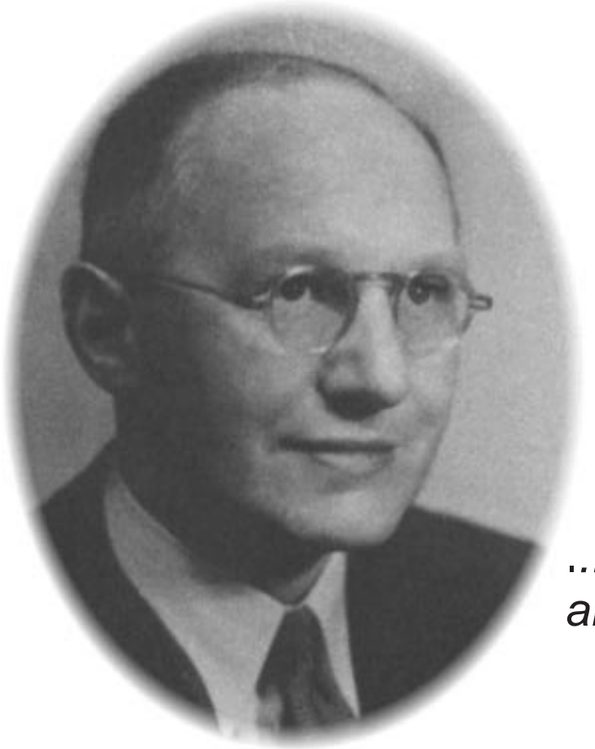
Awarded the Nobel Prize for Physics in 1951

"Ernest has split the atom!" was the exclamation of a young schoolteacher on entering her classroom in 1932. The pupils applauded politely, but had little idea of the significance of the achievement of Miss Wilson's fiancé. The newspapers picked up the same theme, and for a while John Cockcroft and Ernest Walton were national celebrities. But they had to wait until 1951 for the award of the Nobel Prize.

In fact this catchphrase is a bit misleading. Atomic nuclei had been split before, using natural alpha particles. The task set to these two young research students by Rutherford in Cambridge was to use artificially accelerated protons instead, in a much more controlled experiment. This required a lot of new technology. It may be regarded as the birth of the age of accelerator physics, which today has reached such an extraordinary stage of development in the giant machines of CERN in Geneva.

Walton, as a patient and meticulous experimenter, was ideal for this challenge. In later years he reminisced about his awe of Rutherford, which drove him to great efforts to fulfil his commands. The young researchers were under orders to let nothing go to waste: after every experiment, pieces of wood and even nails were to be retrieved and stored for further use.

When they finally emerged in high spirits from the makeshift hut in which they stared at a scintillation screen, looking for signs of a nuclear decay, Rutherford was in no doubt about the implications. They had succeeded in splitting Lithium atoms. An analysis of the results also provided the first test of Einstein's $E=mc^2$ as it applied to nuclear reactions.



...he was quiet and religious man who enjoyed gardening

CERN accelerator, 2001

Cockcroft and Walton made his first accelerator in Cambridge in 1932

Walton had come to Cambridge from Trinity College Dublin. Born in County Waterford, he had gone to Methodist College Belfast for his secondary education. He and his future wife were Head Boy and Head Girl of the school, and he was just as distinguished in his university career. Ever since JJ Thomson had introduced the first official research students in the Cavendish, star students like Walton had been attracted from far and wide, so a transfer to Cambridge was the obvious course.

In later years Walton and Cockcroft went very different ways. Cockcroft, the more worldly of the two, was destined for the higher echelons of the scientific establishment, including the UK Atomic Energy Authority. Walton, a quiet and religious man, was content to return to the totally inadequate facilities of his college in Dublin; he very much enjoyed gardening. His later years were devoted to the education of successive generations of undergraduates, and such causes as the Pugwash project, in which physicists concerned themselves with the terrible possibilities of nuclear war. His legacy is to be found not only in his pupils, but also in his family. All four of his children , two sons and two daughters, chose a career in science, three of them in physics.

D.W.