SIR JOHN CURRIE GUNN

John Currie Gunn was born in Glasgow on 13 September 1916 into a well-known Glasgow family. After being an outstanding student at Glasgow University and Cambridge University followed by wartime scientific research and early academic posts, he was appointed to the Cargill Chair of Natural Philosophy in Glasgow University in 1949. He held that post until his retirement in September 1982 and thereafter continued to live in Glasgow until his death on 26 July 2002.

His early education was at Glasgow Academy and Glasgow University, graduating in 1937 in Mathematics and Natural Philosophy and winning the Logan Prize as the best Arts student of the year. Wishing to enter research in theoretical physics he went to Cambridge, then an outstanding world leader in physics. From 1937 to 1939 he took parts II and III of the Mathematics Tripos as a Scholar of St. Johns College, graduating and being awarded the Mayhew Prize. In autumn 1939 he started a brief three months as a research student of the thermodynamicist R.H.Fowler before the war supervened. He worked in the Admiralty scientific service from January 1940 to September 1945, first at Teddington and then at the Mine Research Department attached to HMS Vernon, Portsmouth. At both Laboratories Gunn worked in a group led by Harrie Massey first on counter measures to magnetic mines and later on design and development of a series of British non-contact mines. Massey first developed a high regard for Gunn's abilities at this time; it may be remarked that this group included a number of young physicists who later contributed significantly to pure science, the most notable in that respect being Francis Crick. Apart from the operational research aspects, Gunn's work involved much classical applied mathematics.

This latter experience was one of the influences in him accepting a Lectureship in Applied Mathematics at Manchester University with Professor S, Goldstein, rather than taking up the Research Fellowship at St. Johns College, Cambridge to which he had been elected in 1943. After one year at Manchester, giving ten lectures a week in term time and producing two papers on supersonic flow and turbulence, he moved to University College London in 1946. There he was a Lecturer in Professor Massey's Department for three years and moved his research interests from classical applied mathematics to the quantum mechanical subjects of nuclear and particle physics.

Meanwhile, at Glasgow University, with the advent of Philip Dee to the Chair of Natural Philosophy, the Department was undergoing a transforming expansion into nuclear physics - later branching also into particle physics. The Cargill Chair in Applied Physics falling vacant, Dee was able to transform its subject into theoretical physics. Here an opportunity, very much in conformity with his new interests in nuclear and particle physics, presented itself to Gunn and he was successful in being appointed to the Chair in 1949.

When the new Professor Gunn arrived in Glasgow the other active researchers in theoretical physics were few but able. One was his then research student, Edwin Power, coming with him from University College; another was Bruno Touschek, who having miraculously survived through the war as a young scientist in Nazi Germany, had been recruited by Dee in 1946. Gunn collaborated with these two on the production of mesons in proton-proton collisions, one of the new found phenomena signalling nuclear physics generating the subject now known as particle physics. In 1953 Touschek went permanently to Rome where he notably became the originator of electron storage rings. Derek Pursey was also a Glasgow research student until 1951 and John Irving was a research fellow. Irving and Gunn collaborated on the photo-disintegration of light nuclei, postulating configurations for deuterium, tritium and helium nuclei, which were known as Gunn-Irving wave functions.

With the natural departure of all these people to pursue successful academic careers action was necessary. As a Professor - a post then carrying great weight - Gunn was able to recruit research fellows and lecturers to form what resembled a sub-department (though never so called) of theoretical teaching and research, seamlessly integrated into the Natural Philosophy Department. Besides teaching and administration Gunn pursued research and supervision of research students until the mid 1950s. But then came a change which was to set the rest of his academic life.

Through Dee's initiative, Glasgow then had a 300 MeV electron accelerator for particle physics. There were three particle accelerators in the UK, but a need for more advanced particle accelerators became apparent leading to the construction of a proton accelerator at the Rutherford-Appleton Laboratory near Harwell and somewhat later to an electron accelerator at Daresbury in the north of England. Gunn took a notable part in the country wide planning which led to these developments and especially to that of the Daresbury machine. (Serendipitously the radiation coming from the accelerating electrons at Daresbury and later similar circular electron accelerators proved to have practical applications in many areas of science.) It was perhaps a second best for Gunn that the electron accelerator was sited in the north of England rather than Scotland, but he and Dee obtained finance to build a linear, rather than circular, electron accelerator for nuclear physics research sited near Glasgow; this had a long and successful research life.

Gunn's influence increased with his appointment to the Science Research Council (SRC) from 1968 to 1972. At that time the question of building a much bigger European proton accelerator at the CERN Laboratory in Geneva had arisen. The Nuclear Physics Board of the SRC oversaw both nuclear physics and particle physics, and advice

to the Government on CERN came mainly via that Board and the SRC. Gunn was Board Chairman (1970-72) at the time the Government took the positive decision that Britain should join in the new CERN project. That project was an enormous success for European particle physics, putting it for the first time on a level with American accelerator efforts in that field. Eventually in 1983 it led to the discovery of the W particle, which finally verified the great 1960s theory unifying the weak interaction with the electromagnetic interaction.

Gunn was a member of the University Grants Committee from 1973 to 1981. From 1973 to 1976 he was Chairman of its Equipment Sub-committee which dealt with all University requests for equipment money, both in science and arts subjects; demands from the latter were increasing with the rise of computing. In that role he gained and organised information which persuaded the Government to increase the grant to something like a proper level using a model devised to reduce the subjective element in the assessment of need. He was awarded a CBE in 1976.

He then became Chairman of the Physical Sciences (physics, chemistry and geology) sub-committee of the UGC from 1976 to the end of 1981. He obtained a strong impression of the increasing problem set by the skewed academic staff age distribution in these subjects, to become evident later in other subjects. So his sub-committee put a proposal to the UGC for so-called 'new blood' appointments to alleviate the situation. Its development and implementation became a matter involving the dual support system for University research (support both by the UGC and the Research Councils) of which he was a strong proponent. John Gunn was knighted in early 1982, nine months before his retirement.

All through his professorship he played a significant role both in the University and in the Department and was regarded as a mentor by a number of experienced people both within and without Glasgow. Gunn was elected FRSE in 1959. He was member of the University Court from 1969 to 1977, and was one of the first two Vice-Principals (1972-1977). In the Department he gave very strong support to the continuing Glasgow project to detect gravity waves coming from the cosmos when it was initiated by Ronald Drever in the 1960s, providing much of the early impulsion to the present international work. And at about that time Gunn was able to recruit additional academic staff to help form three distinct self-managing theoretical research groups. One of these, appropriately that in particle theory, naturally with some changes of personnel, continues very actively today.

In personal interaction, alertly clever, he had a comprehension of others; often people who only met him once or twice commented on this feeling that he gave. It showed itself in the clarity and interest of his undergraduate lectures; in fact he always did everything thoroughly and well, beyond the call of duty. Mingling in the Department and University he had humour and lively and persistent conversation. From 1972 to 1982 he was the benevolent Head of a remarkably happy Department.

A cello player, he had strong musical interests; chess and particularly golf (naturally) were other recreations. In 1944 he and Betty (Russum) were married, she predeceasing him by only six months, after many active years in public life. Their son is a theoretical physicist, a professor at Birmingham University. John Gunn was a man of outstanding talent, which for most of his academic life he devoted to the cause of science in British Universities, and many remember affectionately the pleasure of his company.

Gordon Moorhouse

Sir John Currie Gunn CBE, MA (Glasgow, Cambridge); Hon.DSc (Heriot-Watt, Loughborough, Glasgow); Hon.DUniv (OU): born 13 September 1916; elected FRSE 2 March 1959; died 26 July 2002.