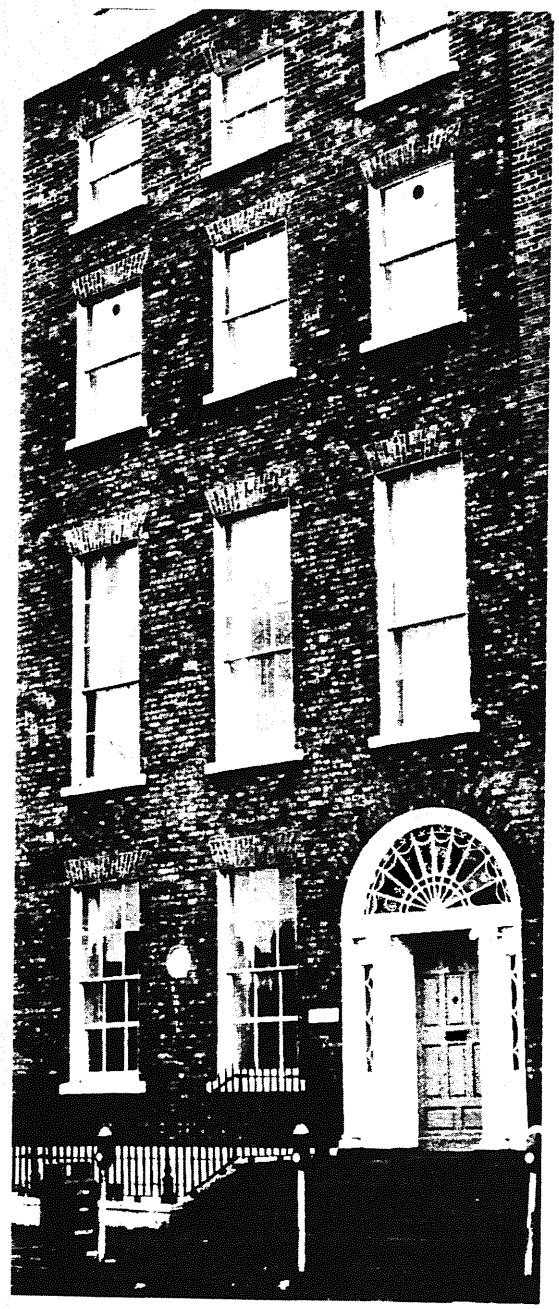
J. McConnell, More People and Places in Irish Science and Technology
ed. C. Mollan, W. Davis and B. Finucane,
Royal Irish Academy, 1990

90-37

42 THE SCHOOL OF THEORETICAL PHYSICS *Dublin*



65 Merrion Square, site of the School of Theoretical Physics, 1940-71

The Dublin Institute for Advanced Studies was created by an Act of the Irish Parliament signed by President Douglas Hyde on 19 June 1940. The Act enabled the government to set up constituent schools in the Institute by Establishment Orders, and such orders were immediately made to establish the School of Celtic Studies and the School of Theoretical Physics. The choice of these two schools reflected the personal interests in mathematics and the Irish language of Eamon de Valera, who was then taoiseach.

Erwin Schrödinger was appointed senior professor in the School of Theoretical Physics and he moved into his office at 65 Merrion Square in February 1941. In June of the same year he was joined by Walter Heitler, who had been appointed assistant professor. Schrödinger and Heitler set about providing, for the benefit of university staff members and senior students, introductory courses on quantum mechanics, which at the time was little known in Ireland. They also conducted seminars on their own current researches. Initially Schrödinger's seminars were devoted largely to his attempts to construct within the framework of general relativity a theory which united gravitational and electromagnetic phenomena. Heitler spoke about his radiation damping theory and its applications to the study of cosmic rays. These seminars of Heitler were responsible for the introduction of cosmic ray research to University College Dublin and for the inclusion of a cosmic ray section in the School of Cosmic physics when it was established in 1947.

During the early years of the Institute, communications with Great Britain and North America were difficult and communications with continental Europe were well nigh impossible. Schrödinger made a major attempt to combat the isolation of the School by holding a colloquium which lasted from 16 to 29 July 1942. The speakers from abroad were P.A.M. Dirac, who delivered five lectures on quantum electrodynamics, and A.S. Eddington, who gave the same number of lectures on unification of relativity theory and quantum theory. These two sets of lectures were published as numbers 1 and 2 of *Communications of the Dublin Institute for Advanced Studies,* Series A.

In the following year a colloquium on crystals was held, the chief speakers being Max Born, P.P. Ewald and Kathleen Lonsdale, and in 1945 a colloquium on topics ranging from quantum electrodynamics to the theory of solids was held with Dirac, Born and L. Jánossy as the main speakers. Thus already during World War Two Irish scientists were able to establish personal contact with some of the leading figures of twentieth-century physics. Then in March 1946 W. Pauli visited the School for two weeks and normal contacts were gradually resumed, but the summer colloquia were still frequently held.

In the establishment order of the School of Theoretical Physics it is laid down that one or more public lectures on subjects or branches of knowledge in respect of which study or research is being carried on in

the School shall be provided for delivery in alternate years at University College Dublin and Trinity College Dublin. When this regulation was being drafted, A.W. Conway expressed the view that the preparation of a public lecture by a research scientist could be very time consuming. Fortunately Schrödinger and Heitler were not narrow specialists and so could draw on their reading to present, in an intelligible form, results of modern science.

Of the statutory lectures given in the early 1940s, those that made the greatest impression on the public were the series of four lectures given by Schrödinger at Trinity College Dublin in 1943 entitled 'What is life?' These dealt with the physical aspect of the living cell and especially with the bearing of the quantum theory on the structure of chromosomes and on the nature of mutation. The audience totalled nearly four hundred, and to accommodate them each lecture had to be repeated. The lectures were published and were subsequently translated into German, French, Swedish, Japanese, Italian and Russian. Some of the other lectures formed a basis for books published by Schrödinger and by Heitler on the relations between science, philosophy and humanism.

10 Burlington Road, site of the School of Theoretical Physics since 1971.

While the number of senior professors provided for in the establishment of the School was three, this number was not attained until 1948 with the appointment of J.L Synge. Already in 1945 Heitler had been raised to the rank of senior professor. The advent of Synge imported a more mathematical orientation to the research of the School and a massive development of research in relativity theory.

Further reading:

Institute for Advanced Studies Act 1940 (Dublin, 1940).
Institute for Advanced Studies (School of Theoretical Physics) Establishment Order 1940 (Dublin,1940).
J. McConnell, *Erwin Schrödinger (1887–1961). Austro-Irish Nobel Laureate* (Dublin,1988). Royal Dublin Society Occasional Papers in Irish Science and Technology no. 5.