JUBILEE OF THE UNIVERSITY OF SHEFFIELD

By DR. D. H. PEACOCK

ON June 3, 1905, Mr. (later Sir) George Franklin, chairman of the Council of University College, Sheffield, brought to Sheffield the Royal Charter constituting the University. He was met at the Victoria Station by the officers of the new University and some thirty carriages filled with students and decorated in the College colours. This procession, led by the band of the Hallamshire Rifles, moved off to the old University College building, where an enthusiastic meeting was held to receive the Charter.

The College which was raised then to the status of an independent University had been formed in 1897 by the union of three institutions: Firth College, the Sheffield Technical School and the Sheffield School of Medicine.

Firth College enrolled its first students in 1880 for courses in mathematics, classics, ancient history, modern history, chemistry, physics, mechanics and the theory of music. This forerunner of the University had been founded at his own charge by Mark Firth, head of the firm of Thomas Firth and Sons and lately mayor of Sheffield, whose enthusiasm had been stimulated by the extension lectures conducted in Sheffield in the preceding few years. The eventual provision of technological courses had been envisaged from the beginning, and in 1886, largely as the result of the activity of Sir Frederick Mappin, then representative of Sheffield Corporation on the College Council, the Sheffield Technical School was opened as a branch of the College, though under separate management, and in separate buildings which have ever since remained the centre around which the University's technological departments have grown.

The Medical School had been opened by members of the profession in 1828. For a few years there were indeed two rival medical schools; but one disappeared after its buildings had been sacked by a mob. The early history of the survivor was chequered, and once at least a decision was taken to close it. Its survival was due to the devotion and self-sacrifice of a group of medical practitioners in the town, who, with the help of public subscriptions, raised the money to erect a new building, opened in 1888 opposite Firth College. Thereafter there was a close association between the two institutions, and in 1891 Firth College took over all the teaching of the preliminary sciences. When a charter for a University College was granted in 1897 the Medical School joined Firth College and the Sheffield Technical School to become the new University College's faculty of medicine.

University College, Sheffield, was constituted with the view of admission to the federal Victoria University, but in 1897 that University was already suffering from internal strain. The Sheffield College applied for admission and was refused. Soon after, the Victoria University split up, and in these circumstances Sheffield decided to apply for a university charter—a project which had never been far from the minds of the Trustees of Firth College. New buildings, designed for an extended University College, had just been completed when the charter was granted, and were opened on July 12, 1905, by King Edward VII. Around these buildings in Western Bank (about a quarter of a mile from the applied science buildings

in St. George's Square) the subsequent expansion of the faculties of arts, law, pure science and medicine has taken place.

The University of 1905 owed much to the scholarship, zeal and organizing ability of the staff of University College and its predecessors. They had remained undaunted by the difficulties and delays attendant upon inadequate financial resources, and had pressed forward determinedly towards standards then not commonly accepted. In some cases the influence of what was accomplished extended well beyond Sheffield. In particular, W. M. Hicks, professor of physics (1883–1917), principal of Firth College and later of University College, and charter vice-chancellor of the University, had played an important part as the initiator, with Sir William Ramsay (then principal of University College, Bristol), of the campaign for government grants for the English university colleges, the successful outcome of which had saved some of the colleges—Firth College almost certainly—from extinction. In the arrangements made for the administration of these early—and tiny—grants may be traced the outline of the future University Grants Committee and the beginning of a movement which is transforming the civic universities into national institutions.

In the early days, of course, only a very small proportion of students were university students as we know them now. The session 1905–6 began, in fact, with 585 day students of whom only 114 were reading for degrees and diplomas. The teaching staff of the faculties of arts and science also catered for a large proportion of the 250 occasional students, some 200 evening students, and students of the Sheffield Teachers' Training College who came to the University for courses which the Local Education Authority could not then provide. One of the earliest steps taken, under the energetic leadership of J. A. Green (appointed professor of education in 1906), was the establishment of a University Training Department for Teachers, in which, by 1910–11, there were a hundred students. Degree courses in law were made available with the creation of a separate faculty in 1908. In the same year, with R. N. Rudmose Brown (professor of geography, 1931–45) as lecturer, geography was introduced into the curriculum for ordinary degrees in the faculty of pure science. Degree and diploma courses in architecture were instituted in 1913 (though it is only recently that the department has grown into one of the largest in the faculty of arts). Music, though taught since the days of Firth College (during 1890–1920 under the well-known chorus master, Sir Henry Coward), did not become a subject for degrees until 1928, when, the nucleus of a department having been built up under the influence of Sir Henry Hadow (vice-chancellor, 1919–30), F. H. Spera was appointed to a full-time chair.

On the technological side the young University was in a strong position. The equipment and facilities of the applied science buildings were among the best then available. Associateships in engineering and metallurgy, already established by Prof. W. Ripper (professor of engineering, 1889–1923; principal of the Sheffield Technical School, 1889–97; vice-chancellor of the University, 1917–19) and Prof. J. O. Arnold (professor of metallurgy, 1889–1919), were of a high standard, and were held (and have remained to this day, although superseded by degree courses) in great esteem by local industrialists. The degree and diploma courses in engineering and metallurgy

could be completed by either full-time or part-time study combined with practical experience. The early courses for the diploma in mining followed a similar pattern, as did the degree courses instituted in 1913 under F. E. Armstrong (professor of mining, 1913–21). Since then the necessary practical experience has been gained largely by vacation work. The Department of Glass Technology was instituted as the result of experience gained during the First World War. In October 1914 the University set up a Scientific Advisory Committee with W. E. S. Turner (professor of glass technology, 1920–45), then lecturer in physical chemistry, as its secretary. Turner soon realized the need for the application of scientific methods to the manufacture of glass, and a full-time course for a diploma in glass technology was established in 1916, and a degree course in 1919. Fuel technology, which had been unequally yoked with applied chemistry, was made a separate chair in 1920 (R. V. Wheeler, professor of fuel technology, 1920–39) and degree and diploma courses instituted in 1921.

The growth of the medical faculty between 1905 and 1945 owed much to the pioneer work of earlier teachers in the Medical School. Arthur Hall (professor of physiology, 1897–98, of pathology, 1899–1906, and of medicine, 1915–31) joined the Medical School as an assistant demonstrator in physiology in 1889 and strove successfully to establish full-time teaching departments in the subjects involving laboratory work. His work on behalf of the school was helped by Christopher Addison (Viscount Addison of Stallingborough, first Arthur Jackson professor of anatomy, 1897–1901). J. B. Leathes (professor of physiology, 1914–33) reorganized the courses, and did much to effect a revolution in the linking of laboratory work with clinical teaching not only in Sheffield but also throughout the country. The first full-time clinical chair was established in 1920 when Edward Mellanby was appointed professor of pharmacology, and with the chair was associated an appointment as physician at the Sheffield Royal Infirmary. When H. W. Florey was appointed to the chair of pathology in 1932, J. W. Edington became the first full-time professor of bacteriology, after having been for more than ten years responsible for both departments. A full-time professor of dental surgery (G. L. Roberts) was appointed in 1935 and a chair of biochemistry (H. A. Krebs) created in 1945. Since 1945, clinical chairs have been instituted in medicine, surgery, child health, obstetrics and gynaecology and social medicine.

The expansion in the range of studies offered at the University was accompanied by an increase in the number of students and a corresponding demand for increased teaching and residential accommodation. The natural expansion in buildings was, however, checked by the First World War and the subsequent depression. Extensions to the technological departments were completed in 1913; but further expansion had to wait until after 1930. Then, under the direction of A. W. Pickard-Cambridge (vice-chancellor, 1930–38) a new wing for the departments of pure science and extensions to the Departments of Mining and of Metallurgy were completed. In 1939 the Department of Glass Technology moved into its new building for which funds had been raised by the glass industry. The Second World War interrupted the building programme. During the War, under the leadership of Sir Irvine Masson (vice-chancellor, 1939–52), the University had made notable contributions to the

war effort both in research and in production. As soon as the War ended, plans were drawn up to serve the increased number of students which the University was called upon to train. Extensions to the Department of Mining were opened in 1953, and a large new building to provide expanded facilities in teaching and research in the Departments of Civil, Mechanical and Electrical Engineering was opened by the Minister of Defence in April this year. Post-graduate schools in physical metallurgy were opened in 1950, in applied mechanics in 1951 and in mining in 1952. This expansion in applied science naturally requires expanded provision for teaching and research in the fundamental pure sciences. A new building for chemistry was opened in 1954, and the accommodation vacated has been altered for the use of departments in the faculties of pure science and of medicine. The necessary sites in the neighbourhood of Western Bank have been acquired for a complete University Quarter, and plans for new buildings for the library, arts, law, physics, the Medical School and administration have been drawn up.

All this expansion has provided, and is providing, domestic problems of considerable magnitude. The public spirit of Sheffield ladies was soon stirred to arrange halls of residence for women students. Soon after 1930 three of these small halls were united in one larger hall. At about the same time the first hall of residence for men was built and a Students Union provided by the generosity of J. G. Graves. Additional halls of residence for men were opened in 1947 and in 1952. A full-time warden of lodgings was appointed in 1947, and the student health service set up in 1948 now has three full-time medical officers. Extensions to the halls of residence are planned, as are new buildings for the Students Union, refectories and a staff house. A new playing field near the University has been opened, and the site for another acquired. The material resources planned are impressive; their use will depend on character and ideals.

Universities exist to extend knowledge, to conserve knowledge and to hand on knowledge. Sheffield can claim that it has performed all these functions in the past and can, with some degree of confidence, hope to continue to perform them in the future.

COLOUR SPECIFICATION

POSSIBLE REVISION OF THE C.I.E. SYSTEM

ALTHOUGH the principles of colour-matching with mixtures of three coloured lights were worked out in the latter half of the nineteenth century—notably by Helmholtz, Maxwell, König and Abney—it was not until 1931 that an agreed system of colour specification based on these principles was adopted. The essential preliminary was an adequate knowledge of the colour-matching properties of the average colour-normal eye. During 1927–30 excellent investigations of colour-matching by Guild and Wright respectively, using different groups of subjects, gave closely concordant results for a vital part of the information required, namely, the quantities, two positive and one negative, of the three component lights in a mixture to match an unspecified amount of each of the spectral colours. (The negative sign means that in the match the component light has to be mixed with the spectral stimulus.) The Commission Internationale de l'Éclairage had