

THE UNIVERSITY OF SOUTHAMPTON

By PROF. N. K. ADAM, F.R.S.

THE grant of a Charter to the University of Southampton has given very great satisfaction to the Council, staff and many friends of the Hartley University College, who have worked long and hard to lay the foundations of a University in mid-southern England. The new University had its origin just over a century ago, when Henry Robinson Hartley, a wine merchant of Southampton, left about £100,000 to found an institution with a library, museum, and botanic garden, in which natural history, antiquities, classical and oriental literature, etc., could be studied. Unfortunately, the founder's will was far from making his intentions clear, and prolonged litigation reduced the value of the bequest to about £40,000. Out of this the Hartley Institution, opened in 1862, was built and equipped; it contained a large and imposing hall often used for major public occasions, a museum, and some class rooms, the latter forming the nucleus of a teaching institution. Day and evening students attended the Institution; but for some decades the number of full-time students was small. Prof. Hewitt records that, in 1881, he entered the Institution at the age of thirteen, being the youngest of about twenty students, in science and literary subjects; these included F. W. Lanchester, the pioneer of motor-car and aeroplane design. Chemistry was then taught by the principal, T. W. Shore, and the borough analyst. There was also an art school.

Towards the close of the century, serious attempts were made to develop teaching of university standard; in 1893, Mr. William Garton left money to build an engineering laboratory, staff of university calibre were recruited as the very meagre funds permitted, and in 1902 the Institution was incorporated as the Hartley University College. From that time the growth of the College was steady, if slow; the abler students took degrees of the University of London, there was a steady output of trained teachers, and the College also acted as the technical college for Southampton, with some hundreds of part-time students.

The original site in the High Street was clearly inadequate for a university institution, and by 1914 the College had acquired land in Highfield, and erected a substantial building. This was taken over by the War Office as a hospital, and the move to the new site was not made until 1919. With the rush of post-war students, problems of accommodation were severe, and much use was made of the wooden huts which had formed most of the hospital; a few of these are still in use.

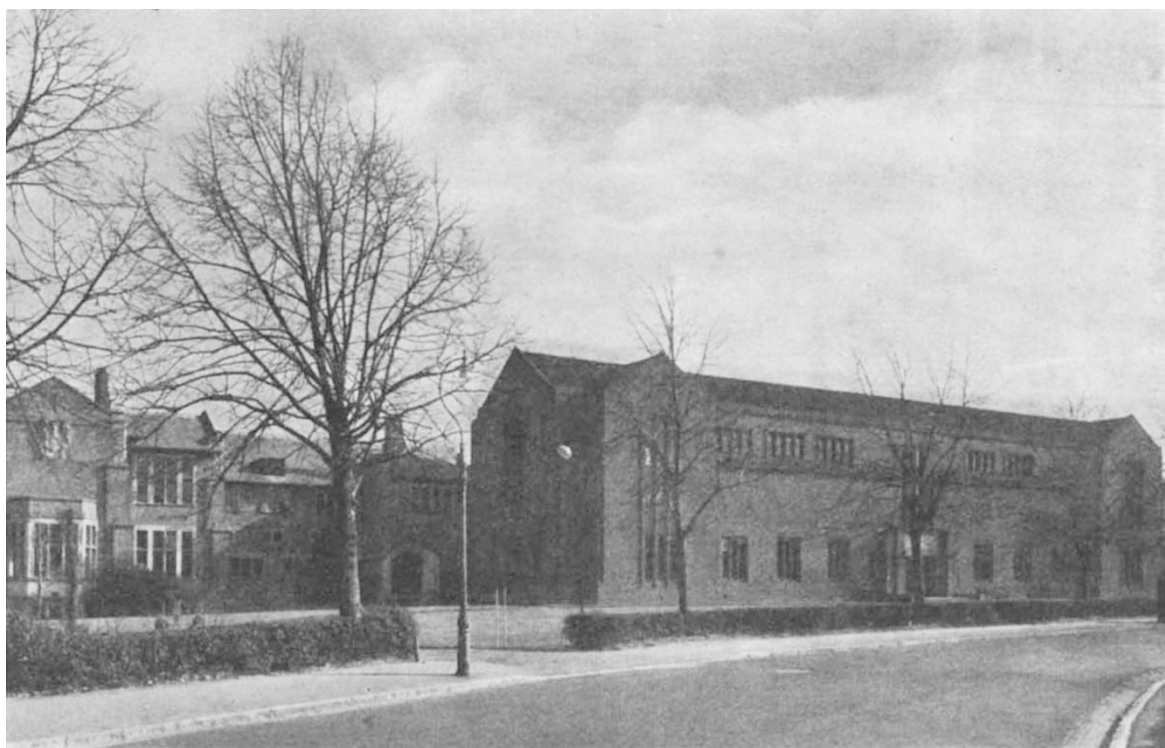
The principalship of Mr. Kenneth Vickers, from 1922 until 1946, was the period during which the foundations of university status were solidly laid. Numbers of students fluctuated, but did not show any steady increase between the two World Wars. The University owes an incalculable debt to Mr. Vickers and a small band of devoted staff, who cheerfully gave almost their whole working lives, with small salaries and a load of undergraduate teaching far greater, and facilities far less, than the normal for university work. Two of these may perhaps be mentioned. Prof. D. R. Boyd, who in 1896 was appointed lecturer in chemistry with some teaching

duties in elementary physics, and was vice-principal and dean of the Faculty of Science for many years, maintained a very high standard of teaching until his retirement in 1937. With his research students, he made substantial contributions to organic chemistry. Some of his pupils are well-known chemists, among them Prof. C. K. Ingold, now president of the Chemical Society. Prof. J. Eustice, appointed "Geometrical and Engineering Teacher" in 1895, founded and inspired a School of Engineering which grew steadily until his retirement in 1931. Past students still speak with great affection of these and others among their teachers. Between the Wars, the College had on its staff several young men who have since risen to high academic positions elsewhere.

During the past thirty years, continuous progress has been made in acquiring land and erecting permanent buildings, both for academic and residential purposes. In 1927, botanical laboratories were provided out of a bequest by Mr. George Moore; in 1929, Highfield Hall, for women, built on the site of a house previously used for the same purpose, was given anonymously; in 1931 Connaught Hall for men was opened; the permanent engineering workshops were begun in 1932, and have since been extended. In 1935, a fine library was provided out of a bequest by Mr. Edward Turner Sims. 1938 saw the opening of the physics laboratory; in 1940 the refectory and students' union was completed and a block of lecture rooms for the Department of Engineering built.

Under the energetic administration of Sir Robert Wood, principal since 1946 and now the first vice-chancellor, building has been accelerated; and despite post-war difficulties, nearly all the new buildings are permanent and designed to harmonize with the rest of the University. A large site at Glen Eyre, half a mile from the University and large enough for several halls, was purchased in 1947; on this a hall for men has been built and occupied in stages. An assembly hall, which can also be used as a gymnasium and a theatre, and the Institute of Education, were built in 1949; the new zoological laboratories were opened in 1951 (a photograph of the new Zoological Museum appeared in *Nature* of December 29, 1951); part of a new chemistry building was finished in 1948 and a large further instalment is expected to be ready for next session. A disused brickfield, abutting on Southampton Common, now belongs to the University and provides generous space for future academic extensions; a small part of it is now being developed as a botanic garden for experimental plants.

The University will have six faculties: Arts, Economics, Education, Engineering, Science, and Law; the last will commence next session. There are professors of mechanical and aeronautical engineering; senior lecturers have charge of civil and electrical engineering. Besides the usual three-year undergraduate courses, it is intended to operate a 'sandwich' scheme, under which young engineers will spend alternate periods in whole-time study and working in industry, eight terms in four years being spent at the University. This scheme is being well supported by local firms, especially in the aircraft



University of Southampton: Main Building and Library

industry. In science, there are professors of botany, chemistry, electronics, pure mathematics, applied mathematics, physics, and zoology; geography and geology are in charge of a senior lecturer and a lecturer. Electronics is a postgraduate subject, for which the University confers a diploma.

The number of students has grown very rapidly since the War. In 1939, there were fewer than three hundred University students; there are now 980, including 350 in the Faculty of Science and 130 in the Faculty of Engineering. About half the students live in University halls; in addition to the three modern halls, two large houses—one very large—have been converted into students' residences. As further building at Glen Eyre becomes possible, it is intended to provide further halls, so that all students can spend some of their time in residence in hall, and as many as possible all their time.

The University will, probably for many years to come, continue to undertake the more advanced teaching usually done in technical colleges. There are about 1,300 'technical' students, a few whole-time taking courses in marine or radio engineering; and many part-time, mostly engineers, but including about 150 in various branches of science. Many of these are preparing for Higher National Certificates and various professional qualifications.

Research is active in all departments. In mathematics, differential geometry, the theory of numbers, and the theory of nuclear energy-levels are the principal topics. In engineering, the causes of noise from jets are being studied by photographing sound waves and eddies; work is also proceeding on trans-sonic wind tunnels, directional grain effects in light alloys, railway bogies, and web stiffening of plate girders. Among the researches in physics and electronics are micro-wave spectroscopy, the growth

of single metallic crystals, acoustics of organ pipes, optical properties of metallic films, streaming double refraction and anomalous viscosity, and susceptibilities in intense magnetic fields. A team of chemists is studying the kinetics of halogen replacement in organic compounds, and work is in progress also on the synthesis of substances with anti-histaminic activity, stereochemistry, inorganic co-ordination compounds, and other topics. In co-operation with the British Launderers' Research Association, some aspects of detergent action have been studied recently; and work is commencing on heterogeneous reactions in which the rate of diffusion to a surface is a major controlling factor.

The famous fishing rivers, Itchen, Test, and Avon, and the numerous creeks and harbours of the Solent and Southampton Water, make the University an excellent centre for studying the biology of fresh and brackish waters; and the variety of soils and conditions in the district favours studies on the physiological aspects of ecology. At present special attention is being paid to copepods and the larvæ of midges, behaviour in the field being correlated with experimental studies in the laboratory. A beginning is being made with physiology, which at first will be an undergraduate subject up to general B.Sc. level; research is active on the relation of the pituitary gland to carbohydrate metabolism and colour change. In botany, the main lines are: physiology of stomata, metabolism of organic acids in plants, the effect of X-rays on chromosomes; and, with support from the Forestry Commission, plant diseases with special reference to larch canker.

Finally, lest we forget, the founder's name is perpetuated in the Hartley Society, to which past and present members of the University and the University College may belong.