

year for capital in addition to a recurring grant of five lakhs. The total annual income and expenditure of the University are now about seven and a half lakhs of rupees (about 50,000*l.*).

In spite of the shortage of funds, however, the University came into being in 1921 with nearly a thousand students and every year the numbers have steadily increased. At the present time nearly 1400 students are in residence divided among the three faculties of Arts, Science and Law. The students, other than those who stay with relatives in the town, live in three residential colleges—known as the Dacca Hall, Muslim Hall and Jagannath Hall—round which the social and athletic life of the University mainly centres. Recently, a new and interesting development has taken place as a result of the residential system. Social service organisations, designed for the uplift of the degraded and the enlightenment of the ignorant, have taken firm root in the University and are doing good work.

On the teaching side, Dacca has broken new ground in several directions. A tutorial system has been established, and the students are taught how to use a library. The tutorial class, as designed at Dacca, is intended to counteract the inevitable evils of the examination room. Examination tends to discourage originality. The tutorial system is designed to foster individual effort, to ensure that each student shall be enabled to learn something of intellectual production as well as of reproduction, so that when he enters the world

he will not find himself for the first time confronted with problems to which he had not been taught the answers beforehand. Besides the institution of the tutorial system, the University possesses a good library, the use of which forms an important part of the training of the students. The Sadler Commission in its report stated that in the colleges of some Indian universities, students of university courses read little more than their text-books. This cannot be said of Dacca. The last report shows that 33,982 books were borrowed from the University library during the year. These reforms in the teaching have had their inevitable result. Many of the advanced students have taken up research, and every year a growing number of original papers in languages, history, philosophy, economics, chemistry and physics are being published.

At the Convocation of the University of Dacca on March 6 last, His Excellency Lord Lytton, the Governor of Bengal, in conferring the degree of Doctor of Laws on the vice-chancellor, referred to Dr. Hartog's great services in having successfully established a modern university at Dacca, which though only four years old had already made a name for itself in the world. Lord Lytton stated that the establishment of the tutorial system was largely due to Dr. Hartog, who had worked with patience, with courage, and with industry, and their reward was the appreciation of all his colleagues. They greatly regretted that that would be the last Convocation at which they would see him as their vice-chancellor.

Obituary.

PROF. ALBIN HALLER, FOR. MEM. R.S.

ALBIN HALLER was born on March 7, 1849, the eldest of a family of eleven children, at Felleringen, a small village in the Vosges, near Mulhouse. His father was a master carpenter and cabinet-maker, and his mother carried on a small hardware business. In due course he entered his father's workshop as an apprentice, but two years later, and as the result of a conference between his father and a pharmacist of the neighbourhood, young Haller left his native village and became a student in a pharmacy at Münster; his new master, Achille Gault, undertook the literary as well as the scientific education of his pupil, and later installed him with his brother, Léon Gault, a pharmacist at Colmar.

Thanks to the wise counsels and benevolent interest of these two pharmacists, Haller was able to pass his bachelor of science examinations at Strassburg in May 1870. He volunteered at the outbreak of the war of 1870, was assigned to the army medical service, and was drafted to a hospital at Lyons. The close of hostilities found Haller in a difficult position; his father died, and his mother, left with a large family, decided to open a small hotel in order to set her eldest son free to continue his training; whilst the mother thus became a German subject, the son remained a Frenchman, and rejoined his first teacher, Achille Gault, in a pharmacy at Nancy. When the staff of the University of Strassburg was transferred to Nancy in 1872, he became a student in the School of Pharmacy,

and was awarded his diploma as a pharmacist in 1873.

The training of a pharmacist in France often led, and still often leads, to a career in pure chemistry; this arises from the excellent chemical education given to the French pharmacist. Further, the fact that Alsace was the seat of many flourishing chemical industries had already attracted to chemistry many young Alsacians such as Wurtz, Friedel, Schutzenberger and Ch. Lauth. Haller's tastes and his many talents impelled him to forsake pharmacy and to devote himself to chemical science; he soon became well known as a chemical investigator, and took his degree of doctor of science at Paris in 1879. He was appointed professor of chemistry at Nancy in 1885, and professor of organic chemistry in 1898; in 1899 he succeeded Friedel in the chair of organic chemistry at the Sorbonne, a position which he retained until his retirement last year under the age limit.

During the 'seventies of last century our chemical knowledge of camphor was but slight, partly because of the comparatively small number of camphor derivatives known; Haller attached himself particularly to the problems relating to this ketone and prepared large numbers of new derivatives. His first work related to the behaviour of sodiocamphor, and he was the first to prepare iodocamphor and cyanocamphor; the latter compound led to many new derivatives, such as homocamphoric acid, the study of which threw light on the constitution of camphor itself. He made an exhaustive

study of the condensation products of camphor with aldehydes and ketones, and gave an elegant method of preparing sodiocamphor by the aid of sodamide; he effected the partial synthesis of camphor from camphoric acid, and characterised the isomeric borneols. His study of cyanocamphor led him to investigate the remarkable behaviour of the cyano-derivatives of carboxylic esters and ketones in general, and enabled him to provide a new synthesis of acetonedicarboxylic ester and of citric acid. He published important series of papers on the phthaleins, the anthrones, the indanones and the synthesis of anthracene derivatives; he introduced the idea that the alcohols could act upon esters in the presence of hydrogen chloride in the same way that water acts, and showed that the reaction leads to an exchange of the hydrocarbon radicle in the ester. He carried out a large amount of work on optical rotatory power and refraction constants of organic compounds.

Whilst Haller was a prolific contributor to organic chemistry, he was also an ardent worker in the cause of technical education in France; he recognised both the necessity for stimulating the scientific industries of his country and the hindrance to progress imposed by the tendency towards centralising higher scientific effort in Paris. Thanks largely to his efforts, the Chemical Institute at Nancy was founded, and in due course chairs in industrial chemistry and in tinctorial chemistry were instituted; this was the first of many similar institutions in France. During the war of 1914-1918 Haller acted as president of the French Explosives Committee, and, in this office and in many other directions, his incessant activity and his wide experience rendered invaluable service.

Haller was possessed of great charm of manner; his kindly courtesy, his modest bearing and his fine presence, coupled with the keen interest which he took in the work of his junior colleagues, endeared him to all who had the honour of his friendship. Like so many men of the same age and from the same province, his life had been saddened; he was an Alsatian who felt keenly the loss of his native land in 1870, and he had suffered family losses in the last war. The many honours which came to him could not obliterate these sad remembrances. He died on May 1 from influenza, following upon an accident in the laboratory.

Haller was a Grand Officer of the Legion of Honour; in 1900 he was elected a member of the French Academy of Sciences, and in 1923 became its president. He was well known in England, and had received honorary doctorates in the Universities of Leeds and Cambridge; he was awarded the Davy Medal of the Royal Society in 1917, and was elected a foreign member in 1921. He served several periods as president of the French Chemical Society, and was elected an honorary member of the English Chemical Society in 1908.

WM. J. POPE.

MR. H. LING ROTH.

MR. H. LING ROTH, whose death on May 12 will be widely regretted, was born on February 3, 1855, and was a son of Dr. Mathias Roth, of Harley Street, London. He was educated at University College School and studied natural science and philosophy in Germany. Prior to going to Halifax in 1888, he had travelled extensively. He was engaged in business, but

devoted the whole of his spare time to his studies. About twenty-four years ago he voluntarily undertook the work of superintending the Bankfield Museum, Halifax; about twelve years later he was appointed as half-time Keeper, and afterwards he gave his whole time to the Museum. When he first undertook the superintendence of the Museum, it, like other local museums of that time, was in a chaotic condition, but any one who has visited the Museum from time to time cannot but have been struck by the improvements which he made. It is now a model local museum. In particular it illustrates the growth of Halifax and possesses a remarkable series of appliances illustrating the development of the textile industries. The specimens are carefully chosen, well arranged, and most admirably labelled, so that the Museum is a teaching institution of prime importance. Not only has Mr. Ling Roth given time, knowledge, and skill to the Museum, but he has also enriched it with many donations.

By the death of Mr. Ling Roth the science of ethnography loses a student who has not received the recognition that was due to him. This was mainly owing to his quiet, unassuming disposition, and to the fact that he was not connected with a university or large public institution. His work was characterised by painstaking accuracy, and he had a *flair* for collecting specimens to illustrate the particular subject he had in hand. He was a master of the art of collating information and of presenting scattered records in a readable form, which has been of great use to his fellow-students, but in addition, by his own investigations, he has added considerably to ethnographical knowledge. Most of his memoirs and papers have been enriched by his clever draughtsmanship; his drawings bring out just those details which are essential, and thus really illustrate his theme.

The range of Mr. Ling Roth's interests is shown by the following imperfect list of some of his writings: "Crozet's Voyage to Tasmania, New Zealand, etc.," 1891; "The Natives of Sarawak and British North Borneo," 2 vols., 1896; "The Aborigines of Tasmania," London, 1890, 2nd ed. Halifax, 1899; "Great Benin: its Customs, Art and Horrors," Halifax, 1903; "The Genesis of Banking in Halifax," Halifax, 1914; "The Discovery and Settlement of Port Mackay, Queensland," Halifax, 1908; "Oriental Silverwork: Malay and Chinese," 1910; "The Yorkshire Coiners, 1767-1783, with Notes on Old and Prehistoric Halifax," Halifax, 1906; "Sketches and Reminiscences from Queensland, Russia and elsewhere," 1916; "The Maori Mantle," 1923.

Among numerous papers published by the Royal Anthropological Institute may be noted those on the origin of agriculture, salutations, the significance of the couvade, various memoirs on tattooing in Polynesia, Tierra del Fuego, and Tunis, and American quillwork. The series of articles in the Bankfield Museum Notes is of particular interest, among which may be noted the Fijian and Burmese collections; trading in early days; hand wool combing; hand card making; oriental steelyards and bismars; Bishop Blaise, saint, martyr, and woolcombers' patron; and the very valuable series on primitive looms from all parts of the world, which has been reprinted in a separate volume.

A. C. HADDON.