

In 1893, Chree was elected Superintendent of Kew Observatory, and until he retired from this post in 1925, he devoted himself to the study of terrestrial magnetism, atmospheric electricity, and allied subjects. Under his direction Kew attained the leading position amongst the magnetic observatories of the world. Until the National Physical Laboratory took over the work, Chree was responsible for the testing of thousands of chronometers, watches, clinical thermometers, and similar instruments.

During recent years Chree was president of the Section for Terrestrial Magnetism and Atmospheric Electricity of the International Commission for Geodesy and Geophysics. The immense amount of work involved in studying the vast records of observations made for more than a hundred years can only be appreciated by few. Yet Chree never spared himself in his unflinching and unflinching search for truth. He always weighed evidence fairly, and never attempted to neglect those portions of it which failed to support the current theory. No one appreciated more than he did the vital importance of the researches now being made into the constitution of matter, and no one recognised more fully the futility of hoping ever to attain finality.

In his presidential address to the Physical Society in 1908, Chree mentioned the great practical utility of eminent men of science formulating theories on matters of general interest. For example, he mentioned Kelvin's theories of the internal heat of the earth and the age of the sun's heat. But he regarded these theories as scientific poetry, just as, in a somewhat similar way, Kelvin himself regarded Fourier's 'Theory of Heat' as a mathematical poem. It is the privilege of the young to dream dreams, and Lord Kelvin and many other scientists were always young.

In 1916, Chree gave the seventh Kelvin Lecture to the Institution of Electrical Engineers, taking as his subject "Terrestrial Magnetism"; atmospheric electricity had been discussed fully by Lodge in a preceding Kelvin lecture. Amongst other matters he discussed Maunder's recently enunciated 27-day period. He came to the conclusion that we are justified in saying that if a certain day is disturbed, then the days from 25 to 30 days later have more than the usual chance of being disturbed. The 27th day is that one on which the probability of disturbance is a maximum. A great deal has yet to be done in unravelling the exact nature of the relation between sunspots and magnetic phenomena; as he says in his monograph on "Terrestrial Magnetism" (1912): "We may perhaps at present be in the same position as medical science would be in if no distinction were recognised between small-pox, chicken-pox, and measles. In such circumstances the death-rate from eruptive diseases might well appear arbitrary. Astronomers presently may find it possible to recognise different types of sun-spots, and a magnetic relationship may then become conspicuous."

Chree was elected a fellow of the Royal Society in

1897. He received the degree of Sc.D. from Cambridge in 1895 and the Hon. LL.D. of Aberdeen in 1898. He was awarded the Hughes Medal of the Royal Society and a Watt Medal by the Institution of Civil Engineers. He was a past president of the Royal Meteorological Society and devoted a great amount of time to the various scientific societies to which he belonged. He was by far the most conscientious referee the present writer ever knew; no matter how long or how difficult the paper, he would referee it thoroughly.

To the staff at Kew Chree was *persona grata*; one of them, R. S. Whipple, who was with him for twelve years, was the son of Chree's predecessor, as was also his successor, F. J. W. Whipple. It would take many pages to make even a brief résumé of Chree's scientific work, which includes about a hundred and fifty valuable papers communicated to the *Philosophical Transactions* and *Proceedings of the Royal Society*, the *Philosophical Magazine*, the journals of many societies, etc.

In his domestic life Chree was happy, his sister presiding over his house in Richmond, and his brother, Dr. William Chree, K.C., a well-known member of the Scottish bar, accompanying them on holidays. At Cambridge Chree was a good tennis player, and he was fond of cycling and golf. He and his brother were trout fishers from their earliest days and had spent holidays fishing in Norway. When the last summons came early this year, Chree was in full bodily and mental vigour, and after finishing so far as possible the work on which he was engaged, he patiently and most bravely waited for the end, which came on Aug. 12. His work lives and will continue to live, and will make the path easier for coming generations. A. R.

BARON ANATOLE VON HÜGEL.

BARON ANATOLE VON HÜGEL was born at Florence on Sept. 29, 1854; he was the second son of Charles, Baron von Hügel, his mother being the daughter of General Farquharson. His father was a distinguished soldier, diplomat, and man of science, who was awarded the Patron's Medal of the Royal Geographical Society in 1849 for his travels in Kashmir; he was also a horticulturalist of European fame. Thus inheritance, example, and environment shaped Anatole's future life.

In 1874 Anatole von Hügel was sent by his doctor on a voyage to Australia, and while in Australia, New Zealand, and other islands he collected natural history specimens, and in 1875 went to Fiji to collect birds. Against advice he penetrated into the interior of Viti Levu, and though the natives were in a state of great unrest, he made friends with them and became much interested in what they did and made, winning their confidence and affection by his sweet, simple disposition. Sir Arthur Gordon (later Lord Stanmore) had just been appointed the first Governor of Fiji, and Alfred Maudslay was also there at that time. All three

began enthusiastically to make ethnographical collections, which later were united to form the unrivalled collection now displayed in the Museum of Archæology and Ethnology at Cambridge. Von Hügel wrote voluminous notes on the natives, and he soon came to be an acknowledged authority on Fiji. For this reason he was appointed at the end of 1883 the curator of the newly established Museum of General and Local Archæology, which then consisted of the collections given to the University by the Cambridge Antiquarian Society. The collections were greatly increased in all departments of archæology, and particularly by local Saxon grave-finds, in the excavating of which the curator took an active part.

Under the fostering care and through the discriminating knowledge of von Hügel, the ethnographical collections became of such importance that the title of the museum was changed to that it now bears. The collections were greatly enriched by numerous valuable gifts from the curator, the Baroness, their family, and personal friends. For many years von Hügel worked unremittingly and single-handed for a pittance under most cramped and unhealthy conditions, which must have weakened a constitution that was never robust. It fell to him to undertake the arduous and repellent duty of collecting money for a new museum. He was himself repeatedly a generous donor, as were various members of his family. In time, sufficient money was raised to begin the new building, the details of which involved von Hügel in much work and worry. The foundation stone of the first block was laid by Eliza Margaret, Baroness Anatole von Hügel, on May 14, 1910. The weary work of raising new funds for the erection of the other blocks had to be renewed. The removal of the specimens from the old to the new building was an arduous and anxious task, as was their installation in their new quarters.

His sensitive temperament, conscientiousness, and continual ill-health made life very hard for von Hügel. In the autumn of 1920 he quite broke down, and in June 1921 he felt obliged to send in his resignation as from Dec. 31, 1921. As health permitted he continued to work in the Museum, and had the satisfaction of completing the installation of the Fijian collections. The end came after a long illness on Aug. 15 last.

The above-mentioned circumstances, combined with a difficulty in expressing himself in writing, and a natural diffidence, were the probable reasons why von Hügel has little published work to his credit, and helps to explain why his long-projected and much-looked-for monograph on Fiji has never been finished. After being appointed curator he was made an honorary M.A. of the University, and then he joined Trinity College. In May 1922 he was given the degree of Sc.D. *honoris causa* for his distinction as an ethnologist and for the great work he had done for the University.

No account of von Hügel can be complete without reference to the devotion of the Baroness, his happy home life, and his love for his garden. He and the Baroness were always unobtrusively doing kind

actions. He was a sincerely religious man, and he exerted a profound influence on Roman Catholicism in Cambridge. A. C. HADDON.

PROF. F. S. CAREY.

THE sudden death on July 26 of Prof. Frank Stanton Carey, who for thirty-seven years was professor of mathematics at Liverpool, first in University College and then in the University, removes one who did much valuable pioneer-work in the building up of a new university.

Born in Somersetshire in 1860, F. S. Carey received his early education at Bristol Grammar School, and then proceeded to Trinity College, Cambridge. He was third wrangler in 1882, placed in Div. 1 of Part II. of the Math. Tripos in the same year, and elected to a fellowship of Trinity in 1884.

In 1886, Carey was appointed to the chair of mathematics at Liverpool, which had been founded three years earlier, and already occupied by A. R. Forsyth and R. A. Herman. In this chair his life's work was carried out. A born teacher, he was exceptionally able to impart knowledge to the dullest of his pupils, and at the same time to inspire the most brilliant of them. Both types of men continuously sought his advice long after they had left the University, and they were always amply rewarded. He himself never ceased to be an enthusiastic student of pure mathematics, always keeping a youthful outlook and fully appreciating the modern ideas in that subject, vastly different as they are from all that he was taught at Cambridge.

Carey's original contributions to mathematics are not large; they consist of isolated papers on geometry, theory of numbers and groups. His textbooks are better known, and have been used by a large number of students; they are "Solid Geometry," "Infinitesimal Calculus," and "The Elements of Mechanics" (of which he was joint author). His latest publication (also a joint one) was "Four-place Tables with Forced Decimals." But of his writings perhaps that which shows him at his best is his chapter on mathematics in the volume on "Modern France" published in 1922 by the Cambridge University Press. In this there occurs a sentence which reveals an admirable spirit for a university teacher: "Perhaps the new ways were invisible except to the eyes of youth." His culture was a wide one, and he appears to have been able to enter intimately into the spirit of the scientific pioneers of the seventeenth and eighteenth centuries.

In the administration of his University, Carey took a prominent part, and on council, senate, and faculties he always judiciously upheld the claims of science and scholarship. He rendered vital help in the establishment of the Tidal Institute. The library, Teachers' Training College, finance committee, and athletic club all benefited by his active sympathy and sound judgment. His death will be deeply regretted by a wide circle of friends and former pupils, many of the latter being teachers and engineers. J. P.