

up in which for a certain number of hours a day they will learn the rudiments of the many branches of the industry. During the remaining portion of the day they will be employed in making themselves useful in one or other of the many departments of the firm. The speed at which they will learn their business will depend upon their own efforts, aided by all the assistance that can be given to them in the way of instruction.

AN interesting pamphlet has been published by the Universities Bureau of the British Empire, 50 Russell Square, London, W.C.1, containing lists of the students and teachers from our Colonies and from foreign countries who are studying in or attached to the universities of Great Britain. It is a record of the large-scale hospitality which is extended by our centres of learning to students of all nationalities. India sends us by far the largest number of students; including those from Burma and Ceylon, there are as many as 665 Indian students at present being educated in this country, of whom 292 are at London University and 125 and 67 respectively at Cambridge and Oxford. South Africa sends a large contingent, which is divided among the same universities roughly in equal numbers. Canada and Australia also have students in Great Britain, of whom the greater number are at Oxford; the totals for these Dominions are 123 and 121 respectively. Of foreign countries the United States is the largest contributor; 329 students in all are over here, of which 193 are at Oxford, 68 at London, and the remainder are distributed between Cambridge and the provincial universities. The subjects which have the greatest attraction for both Colonial and foreign students appear to be economics and medicine. It is also interesting to note that there are 56 Serbian and 66 Russian students studying in our universities at the present time.

At a recent meeting of the trustees of the General Education Board of the Rockefeller Foundation grants amounting to 20,251,000 dollars were made to ninety-eight colleges and universities for general education and for the development of medical schools. Of this sum 12,851,666 dollars will be given as an endowment to provide increases in teachers' salaries, provided that the institutions themselves succeed in raising for the same purpose a sum of 30,613,334 dollars. Medical schools will benefit to the following extent:—1,250,000 dollars for endowment and 70,000 dollars for additional laboratory facilities to Washington University Medical School, St. Louis; 1,000,000 dollars for the endowment funds of Yale Medical School; 300,000 dollars for improving the facilities in obstetrics and 350,000 dollars for the development of the teaching of psychiatry in Harvard Medical School; and 400,000 dollars for the development of a new department of pathology in the Johns Hopkins Medical School. For the furtherance of general medical research 1,000,000 dollars has been allotted to the Medical Research Foundation of Elizabeth, Queen of the Belgians, Brussels. Other grants were made for a number of educational purposes, 287,350 dollars for co-operation between State universities and State Departments of Education in the Southern States of America in the fields of secondary and rural education, and 500,000 dollars for endowment and 443,500 dollars for current expenses and equipment of negro schools. A grant of 15,000 dollars has also been made to the American Conference on Hospital Service for the purpose of establishing a library and a service bureau, and one of 25,000 dollars to the National Committee for Mental Hygiene (U.S.) to enable it to carry out surveys on the care and treatment of mental diseases during the year 1920.

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Calendar of Scientific Pioneers.

January 1, 1748. John Bernoulli died.—Born at Basle in 1667, he shares with his brother James the credit of developing the infinitesimal calculus, their mastery of which was acknowledged by Leibniz.

January 1, 1817. Martin Heinrich Klaproth died.—The first chemist in Germany to adopt Lavoisier's views, he became in 1809 the first professor of chemistry in the newly created University of Berlin.

January 1, 1894. Heinrich Rudolf Hertz died.—Hertz, who was born in Hamburg, February 22, 1857, went to Berlin in 1878, and later became an assistant to Helmholtz. At Kiel in 1883 he studied Maxwell's work, and afterwards at Karlsruhe gave the first experimental verification of Maxwell's electromagnetic theory of light. The Hertzian waves used in wireless communication are of the same nature as those of light, but of much greater wave-length and with a wider range. Hertz died at the age of thirty-seven, soon after he had discovered how to produce and detect these waves, but the later development of wireless signalling is based upon his fundamental work.

January 2, 1816. Louis Bernard Guyton de Morveau died.—By profession a lawyer, Morveau devoted his leisure to chemistry, and in 1787, with Fourcroy, Berthollet, and Lavoisier, published the important work "Méthode de Nomenclature Chimique."

January 3, 1640/41. Jeremiah Horrocks died.—While a curate at Hoole, in Lancashire, Horrocks at the age of twenty-two calculated and observed for the first time a transit of Venus. This he saw on November 24, 1639. Within fourteen months of his great achievement he died suddenly at Toxteth. The interest aroused by the transit of 1874 led to a memorial to Horrocks being placed in Westminster Abbey in 1879.

January 3, 1908. Charles Augustus Young died.—One of the most energetic of American astronomers, especially in spectroscopic work.

January 4, 1882. John William Draper died.—Chemist, physiologist, and historical and philosophical writer, Draper obtained in 1839 the first portrait by the daguerreotype process, and in 1840 the first photograph of the moon. Born near Liverpool on May 5, 1811, he emigrated to America, and assisted to found, and served as president of, the New York Medical School. His "History of the Intellectual Development of Europe" appeared in 1862. Henry Draper (1837–82), the astronomer, was his son.

January 4, 1906. Charles Jasper Joly died.—Born at Tullamore in 1864, Joly in 1897 became Astronomer-Royal of Ireland.

January 5, 1904. Karl Alfred von Zittel died.—Educated at Heidelberg, Paris, and Vienna, in 1863, when twenty-four, Zittel became professor of mineralogy at Karlsruhe, and three years later succeeded Oppel at Munich. Widely known for his writings, such as his "Handbook of Palæontology" and his "History of Geology and Palæontology to the End of the Nineteenth Century," he was president of the Royal Bavarian Academy of Sciences and a Wollaston medallist of the Geological Society.

January 5, 1913. Louis Paul Cailletet died.—A student at the Paris School of Mines, Cailletet's first researches related to metallurgy. Later work led him to study gases under pressure, and in 1877 he succeeded in liquefying oxygen. A like result was obtained at about the same time by Pictet at Geneva. Cailletet, who was a member of the Paris Academy of Sciences, was in 1910, at his academic jubilee, referred to as "the father of modern cryogenics."

E. C. S.