

professor until 1924. Early in 1925 he was appointed to assist in research upon foot and mouth disease, later taking charge of the investigations, and he has since joined the staff of the Lister Institute.

Dr. A. J. Bradley has been elected to an honorary research fellowship in physics.

At the annual Commencement Exercises held at Yale University, Newhaven, U.S.A., on June 22, among those upon whom the honorary degree of Doctor of Science was conferred was Sir James Colquhoun Irvine, Principal and Vice-Chancellor of the University of St. Andrews.

ANOTHER series (the sixth) of "Methods and Problems of Vocational Education" has been issued by the Rockefeller Foundation. Twenty-eight institutions or special departments of institutions are dealt with in this series; it includes medical libraries and departments of anatomy, physiology, pathology, embryology, neurology, tropical medicine, physiotherapeutics, and others. An interesting article on the value of visual methods in education and methods of projection is contributed by Prof. Jacoby of Tübingen. Details of the staffs, salaries, wages, and cost of upkeep, and methods of instruction are given in most instances, together with plans and illustrations of the institutions and laboratories.

THE first report of the English committee dealing with the same portion of the terms of reference as are dealt with in its first report by the Committee on Education and Industry in Scotland, namely, "Particular reference to the adequacy of the arrangements for enabling young persons to enter into and retain suitable employment," was published at the end of last year (see NATURE, Jan. 8, p. 69). Necessarily, and obviously, the two committees have been closely in touch with each other. Among the recommendations common to both are: closer co-operation between juvenile employment committees and juvenile advisory committees; the appointment of qualified officers and the provision of suitable premises for choice of employment; a national advisory council for juvenile employment; the increase of information as to industrial conditions available to juveniles and parents; provision of public money for the purpose of a scheme of juvenile unemployment centres; legislation to cover the provision of working certificates. Both committees have seen quite clearly that between the ages of fourteen and sixteen years, "boys and girls are most impressionable, and irretrievable damage can be effected by enforced idleness." Yet during this very period there is a gap in public supervision, since the age of entry into unemployment insurance is sixteen years. Two remedies present themselves immediately: the raising of the school leaving age, and the lowering of the age of entry into unemployment insurance. With regard to the first, the English committee appeared overwhelmed by the evidence against raising the school leaving age, and became correspondingly vague: "the change, *if made* [our italics], should be made for educational and social rather than industrial reasons." The Scottish committee is much more vigorous. "Due notice should be given by the Scottish Education Department, as soon as it may be found financially practicable, of the appointed day for the raising of the school leaving age to 15 years. . . . When, but not before, the school leaving age is raised to 15 years, the age of entry into unemployment insurance should be lowered to 15 years."

Calendar of Discovery and Invention.

July 17, 1850.—The earliest photographs of stars were those of Castor and Vega obtained on July 17, 1850, with the refractor at Cambridge, Mass., by Whipple under the direction of W. C. Bond.

July 8, 1774.—The first experiments in Great Britain for determining the mean density of the earth were made by Maskelyne in Perthshire, who on July 18, 1774, wrote to Dr. Hutton: "From the observatory on the south side of Schiehallien . . . I am now ready to begin making observations . . . whenever the weather will permit." The results of Maskelyne's observations worked out by Hutton gave the value 4.481. The experiment cost the Royal Society £597. 16s.

July 19, 1846.—One of the many students of Liebig at Giessen was Frank Buckland, who, writing on July 19, 1846, gave his routine thus: "7.30-8.30, chemistry; 9-10, German with Dr. Adrian; 10-11, laboratory; 11-1, Liebig's lecture; 1-2.30, dinner. After dinner I occupy myself with chemistry in the laboratory, or German, as the case may be, till about 6 or 7. If ever there was a place to work in it is Giessen. The people never think of leaving off work till 6 or 7; whereas at Oxford the books are shut up at the latest at 2 o'clock."

July 20, 1854.—Liebig retired from Giessen in 1854. The English chemists, headed by Graham, sent him a testimonial "Commemorative of their profound and unalterable regard." Acknowledging the gift from Munich on July 20, 1854, Liebig began his letter: "The man of science generally knows of no other reward for the time he has devoted to the discovery of truth and to the investigation of the laws of Nature's powers, than the mental satisfaction which springs from the consciousness of having, to the best of his ability, contributed his part towards the advancement of human happiness and human welfare; for toils like this, attended as they are with so many difficulties and sacrifices, and with such mental effort and fatigue, cannot be priced in the market or sold—cannot be performed to order or turned into money. . . . If I have laboured for the period of almost a human life in promoting the progress of chemistry . . . I gratefully acknowledge that I have received in return all that a man could justly aim at."

July 21, 1820.—It was between July 15 and July 20, 1820, that Oersted made his remarkable discovery of electro-magnetism, the results being made known to the world in a circular letter in Latin, dated July 21, 1820: "Experimenta circa effectum conflictus electrici in acum magneticam." Oersted's discovery was the result of a long search for a connexion between electricity and magnetism.

July 21, 1914.—Working at Lick Observatory, Nicholson, on July 21, 1914, discovered photographically the ninth satellite of Jupiter, which, like the eighth satellite, revolves around the planet in an opposite direction to the other seven.

July 23, 1849.—On this day Fizeau communicated to the Paris Academy of Sciences the results of his determination of the velocity of light by measuring the time taken for light to travel between Suresnes and Montmartre, a distance of 28,334 feet.

July 23, 1847.—Among the important contributions to the early work on the new theories of the conservation of energy and the mechanical equivalent of heat was the memoir of Helmholtz, "Über die Erhaltung der Kraft," read to the Physical Society of Berlin on July 23, 1847. The paper was, however, refused admission to Poggendorf's *Annalen*, and among the older members of the Physical Society, Karl Jacobi was the only supporter of the views of Helmholtz.

E. C. S.