

and are designed to bring London teachers into touch with the latest developments in educational methods and to enable them to hear leading authorities on current questions of importance. The recently published Handbook to the Lectures for 1927-28 contains details of arrangements made to cover a vast number of subjects. In the science section are courses of lectures and lecture demonstrations on the application of physics to everyday life; light, with special reference to artificial light and its measurement; the Science Museum (intended to give a fuller acquaintance with the contents of certain of the Museum's engineering collections); science for elementary schools and for girls' schools; nature study, with special reference to the open spaces in and near London; nature study in infants' schools. By the courtesy of certain scientific societies, provision is also made for the disposal by the L.C.C. of a number of tickets of admission to their ordinary meetings. Domestic and health subjects include a single lecture on sunlight and health, and ten lectures on dietaries in relation to health. The geography section includes a course dealing with the relation between geography and agriculture. Experimental psychology and its bearing on education is to occupy five lectures. Particularly important is a course on modern thought and education, the purpose of which will be to consider the background of instructive ideas which controls the activities of this generation and is expressed in the contemporary attitude towards education. In most cases the Handbook gives, in connexion with the courses, lists of books recommended for study.

EDUCATIONAL BOARDS and Foundations in the United States are described in Bulletin, 1927, No. 10 of the Bureau of Education. The General Education Board since its foundation in 1902, appropriated 137 million dollars for the promotion of education in the United States. For the year 1925-26 appropriations amounted to 15 million dollars, half from principal and half from income. The Rockefeller Foundation spent 9 million dollars on health projects and medical education, including expenditure through its International Health Board and China Medical Board. The Laura Spelman Rockefeller Memorial appropriated for educational, charitable, and scientific purposes nearly 8 million dollars, including nearly one million dollars for the promotion of child study and parental education. The Carnegie Corporation of New York made grants amounting to 6 million dollars, of which more than 4½ million dollars went to library service, 600,000 dollars to activities in the fine arts, and 300,000 dollars to the newly formed movement for adult education. The Carnegie Foundation for the Advancement of Teaching disposed of an income of 1½ million dollars, devoted mainly to retiring allowances and pensions. Other important foundations described are the John F. Slater Fund for teacher training and other schools in the Southern States; the Jeanes Fund for the improvement of negro rural schools; the Phelps-Stokes Fund for improving New York slums and the education of negroes, Indians, and needy whites; the American Field Service Fellowships for French Universities; the Belgian Fondation Universitaire; the Julius Rosenwald Fund for charitable, scientific, educational, and religious purposes; the Baron de Hirsch Fund for aiding Jewish immigrants; the Kahn Foundation for foreign travel of teachers; the Commonwealth Fund for child welfare, rural hospitals, and education; and the Engineering Economics Foundation. The Commonwealth Fund maintains 23 fellowships, amounting to 125,000 dollars, for graduates of British universities for two years' study in American universities. Three are earmarked for British overseas dominions students.

### Calendar of Discovery and Invention.

**September 11, 1822.**—Copernicus asserted the daily rotation of the earth on its axis, and showed that it accounted for the apparent diurnal revolution of the stars. He also showed that most of the known motions of the planets could be explained by assuming them to revolve round the sun, with the earth as one of them. The teaching of the Copernican theory was forbidden by the Church in 1615. On Sept. 11, 1822, the Pope repealed this decree, and permitted the Copernican views to be taught—nearly three hundred years after they were first published.

**September 12, 1891.**—A scheme for the electrical transmission of power on the three-phase system from Lauffen to Frankfurt a.M. in Germany was prepared by Michael von Dolivo-Dobrowolsky; the system was erected and put into operation on Sept. 12, 1891. The distance covered was 175 km., three copper wires of 4 mm. diameter being used. The alternator voltage was 55, and this was raised by transformers to 8500. The efficiency of transmission was 74 per cent.

**September 13, 1850.**—After years of labour, the engineers lowered the last of the tubes of the Britannia Bridge, over the Menai Straits, to its permanent resting-place on Sept. 13, 1850. The bridge has two spans of 460 ft., and two of 230 ft., at 104 ft. above high water. The official return of the cost was £601,865.

**September 14, 1899.**—The *Times* of this date reports that "for some weeks past experiments of great interest in wireless telephony, as distinguished from Signor Marconi's wireless telegraphy, have been carried on by Sir William Preece near Carnarvon. . . . Sir William has succeeded, without any intermediary other than the ether, in transmitting the sound of a series of taps. . . . They were distinctly heard at the receiving station by placing the newly invented ethereal telephone to the ear. . . . So far, it is stated, the system yields much more rapid results than Marconi's, although the sounds are not quite so distinct as desirable."

**September 15, 1830.**—A number of routes for a railway between Liverpool and Manchester had been proposed and surveyed before a final scheme was authorised in 1826. George Stevenson was the engineer, and the line, which was 31 miles in length, was opened for public traffic on Sept. 15, 1830. In 1845 it was amalgamated with the Grand Junction Railway, and in the following year these became part of the London and North-Western system. The gauge was 4 ft. 8.5 in., and the ruling gradient 1 in 89. There were 63 bridges on the line.

**September 16, 1911.**—Edward Whymper is most popularly associated with the tragic first ascent of the Matterhorn in 1865. He was the pioneer climber of many other peaks of the Alps, the Andes, and the Rockies. More than a successful mountaineer, he was a keen observer of geological phenomena, a student of glaciers, a first-rate collector, and a good wood-engraver. He died suddenly at Chamonix on Sept. 16, 1911. A plaque to his memory was unveiled at Zermatt in 1925.

**September 17, 1607.**—Thomas Harriott first saw the comet of 1607 (Halley's) from Ilfracombe on Sept. 17. He made observations upon it with a 'cross-staff,' giving the distances of the nucleus from the various stars. Harriott had been to Virginia as a surveyor with Sir Richard Grenville's expedition in 1585. He virtually gave to algebra its modern form, and applied the telescope to celestial purposes almost simultaneously with Galileo. With its help he studied the moon, "the new-found planets about Jupiter," and sunspots.

W. C.