

Among the publications summarised are two of special importance by outside experts, who were called in by the Egyptian Government to report on their cotton problems within the last few years, namely, Mr. H. A. Ballou, a West Indian entomologist, and Mr. H. Martin Leake, a botanist in the service of the Indian Government. These independent reports have been of great value to those who are following the development of the cotton position in Egypt. The appendices contain some rather disconcerting statistics of the crop, an account of cotton legislation in Egypt during 1920, and a very useful summary of botanical research on cotton carried out in Egypt up to 1918, along with a bibliography of the chief cotton pests of Egypt.

There is always room for difference of opinion as to the scientific value of the results achieved by research work, and no one who knows the difficulties under which scientific workers in Egypt have laboured in the past would expect any very large results in the short time in which the Cotton Research Board has been in existence. These two years have, in fact, been largely spent in preliminary work, and indeed the new research laboratory at Giza was scarcely finished when the report was written. But no one can question the value of such a compendium of a great deal of the work that has been done in the past. The report will form a useful summary for those interested in all the various lines of activity regarding Egyptian cotton.

### University and Educational Intelligence.

THE Merchant Venturers' Technical College, which provides and maintains the faculty of engineering in the University of Bristol, has issued a prospectus for the academic year 1921-22. A prominent feature is the "sandwich" scheme, which engineering students have the option of adopting. By this arrangement the course of five years is divided into three periods of ten months each, which are spent at the University, and three periods of fourteen, two, and fourteen months respectively, spent in engineering works. More than twenty well-known engineering firms in Great Britain co-operate with the University for this course, in many cases offering to receive students with reduced, or even without, premium. The scheme provides an opportunity for a thoroughly well-balanced training for the profession.

THE Edinburgh and East of Scotland College of Agriculture has issued a calendar for the year 1921-22, in which a full account of the courses available at the college will be found. The classes are arranged in conjunction with the science faculty of Edinburgh University, and two courses are open to students: (a) for the degree in agriculture conferred by Edinburgh University, and (b) for the college diploma in agriculture. Part of the course required for the University degree in forestry is also provided, and there are, in addition, a number of classes devoted to horticulture. A novel feature is the five weeks' course provided in January and February of each year for the benefit of farmers and others who cannot attend a full diploma course. The course extends over two years, the first being devoted chiefly to soils, manures, and farm crops, and the second to feeding-stuffs and the management of livestock; in the coming winter the second part of the course will be given. Local farmers co-operate with the staff of the college in investigating new conditions or special problems arising out of their farming operations, and a number of useful papers have already been published dealing with the results obtained.

NO. 2705, VOL. 108]

### Calendar of Scientific Pioneers.

**September 1, 1648. Marin Mersenne died.**—A schoolfellow and friend of Descartes, Mersenne occupied various ecclesiastical appointments, translated Galileo's "Mechanics," experimented on sound, and was one of the group of eminent men whose meetings led to the founding of the Paris Academy of Sciences.

**September 2, 1832. Franz Xavier, Baron von Zach, died.**—Retiring from the Austrian Army as a colonel, Zach became the first director of the observatory at Seeberg, Gotha. His *Monatliche Correspondenz*, founded in 1800, was the forerunner of Schumacher's *Astronomische Nachrichten*.

**September 2, 1836. William Henry died.**—Awarded the Copley medal in 1809 for his contributions to chemical literature, Henry experimented on gases and enunciated the law connecting the pressure with the solubility of a gas.

**September 2, 1865. Sir William Rowan Hamilton died.**—After a remarkable career as a student, during which he wrote mathematical papers of a high order, Hamilton in 1827, at the age of twenty-two, became Andrews professor of astronomy at Dublin. For many years a correspondent of De Morgan, he was, like him, of a speculative mind. He is best known for his "Theory of Systems of Rays," his prediction of conical refraction, his "General Method of Dynamics," and his discovery of quaternions.

**September 2, 1883. Cromwell Fleetwood Varley died.**—One of three brothers who were all concerned with the early telegraphs, Varley did valuable work in connection with the Atlantic cables. His brother, Samuel Varley, was a pioneer worker on the dynamo.

**September 4, 1784. César François Cassini de Thury died.**—The third of the five members of the Cassini family who became members of the Paris Academy of Sciences, César Cassini is best known for his trigonometrical survey of France.

**September 4, 1852. William Macgillivray died.**—Macgillivray in 1841 became professor of natural history at Aberdeen. His "History of Birds" was published in 1837-52.

**September 5, 1902. Rudolf Virchow died.**—Placed in the foremost rank of pathologists by the publication of his "Cellular Pathology" in 1856, Virchow for many years was director of the Pathological Institute at Berlin. In later life he rendered important services to ethnology, anthropology, and archaeology, and as a public man he was instrumental in transforming Berlin from one of the most unwholesome of cities to one of the most healthy. The centenary of his birth occurs on October 13, 1921.

**September 5, 1906. Ludwig Boltzmann died.**—A distinguished worker in mathematical physics, Boltzmann studied the work of Clausius and Maxwell, and became an authority on the kinetic theory of gases and on thermodynamics. He held chairs at Gratz, Munich, Leipzig, and Vienna.

**September 6, 1902. Sir Frederick Augustus Abel, Bart., died.**—One of the first pupils of Hofmann at the Royal College of Chemistry, Abel in 1854 became chemist to the War Office, a post he held for thirty-four years. He made valuable researches on gun-cotton, with Dewar invented cordite, and was an authority on petroleum and coal-mine explosions. He served as president of various institutions, and in 1893 was made a baronet.

**September 7, 1882. Joseph Liouville died.**—An engineer in the Ponts et Chaussées, Liouville resigned his position, devoted himself to the study of mechanics and pure mathematics, and from 1836 to 1874 edited the *Journal de Mathématique*. To Liouville and Regnault Kelvin was much indebted as a student.

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