

and *Br. melitensis* (Bruce), as they show distinct differences from one another. Some 6-9 per cent of samples of English milk contain *Br. abortus*, yet undulant fever from this source is a rarity. The explanation of this apparent anomaly may be that this organism is of low virulence for man. Thus, it is difficult to infect monkeys with *Br. abortus*, whereas both *Br. melitensis* and *suis* are highly infective for this animal. The Americans are, therefore, disposed to attach more importance to the porcine than to the cattle strain of *Brucella* as a source of undulant fever in man derived from animals other than the goat.

University and Educational Intelligence.

CAMBRIDGE.—The Vice-Chancellor has announced that he has appointed Prof. Hermann Weyl, professor of higher mathematics in the Technical High School, Zurich, to be lecturer on Mr. Rouse Ball's foundation for the present academical year.

EDINBURGH.—At the meeting of the University Court on Monday, Nov. 25, on the recommendation of the Senatus, Dr. J. E. Mackenzie, reader in chemistry, was appointed to membership of the Senatus, and Dr. C. H. O'Donoghue, lecturer in zoology, was appointed reader with a seat on the Faculty of Science.

MANCHESTER.—The following honorary research fellows have been appointed: Dr. W. L. Dulière (Louvain), in physiology; Mrs. Wright Baker (Manchester), in botany; Miss Isabel Cookson (Melbourne), in botany; Dr. Stephen Náráy-Szabó (Budapest), in physics; Prof. Linus Pauling (Pasadena, California), in physics; Mr. Joseph West (Manchester), in physics.

Mr. Harold Walkden has been elected to a Research Studentship in Botany.

At the annual meeting of the court of governors of the London School of Hygiene and Tropical Medicine, held on Nov. 27, the board of management of the School presented its fifth annual report. In the year under review, ended July 31, 1929, the new home of the School, its equipment, and the development of its organisation advanced steadily towards completion, and on July 18 the Prince of Wales formally opened the new building. Special reference is made in the report to the new course of study designed to prepare candidates for the examination for the diplomas in public health, and especially the new academic diploma instituted this year by the University of London. This course is planned in a broad, practical spirit, and gives promise of a great advance on anything which has hitherto been systematically attempted with regard to public health teaching. Two large centres of public health administration have been secured as demonstration areas, an advisory committee of experts of the first standing in the public health service appointed, and a scheme of special lectures arranged. The courses of study in tropical medicine and hygiene are maintained at a high level, and include a special short course in hygiene for business or professional men and women proceeding to the tropics. The University Grants Committee has intimated that the Treasury has sanctioned a recurrent grant-in-aid at the rate of £40,000 a year, but impresses upon the School the necessity for taking all possible steps to secure an increased private income from the Colonies, from public or private subscriptions, and in other ways.

Calendar of Patent Records.

December 8, 1823.—The waterproofing industry dates from the patent granted to Charles MacIntosh for his "process and manufacture whereby the texture of hemp, flax, wool, cotton, and silk, and also leather, paper, and other substances, may be rendered impervious to water and air", the specification of which was enrolled on Dec. 8, 1823. The process, which consisted in placing a sheet of rubber (formed by dissolving small pieces of rubber in naphtha and allowing the solvent to evaporate) between two layers of fabric, was very successful, and MacIntosh's goods quickly attained a high reputation.

December 9, 1815.—The original gas-meter of Samuel Clegg was patented on Dec. 9, 1815. The apparatus consisted of a rotating wheel with a hollow rim connected by hollow arms with inlet and outlet passages for the gas in the axle, and provided with a water seal which closed the inlet and opened the outlet at the proper moment so that the number of revolutions of the wheel was a measure of the quantity of gas passing through. It was greatly improved later, but did not become commercially successful until towards the end of the patent term. The validity of the patent was established in the courts in an action for infringement.

December 10, 1779.—James Keir, F.R.S., doctor, soldier, manufacturer, and chemist, was granted a patent on Dec. 10, 1779, for "a compound metal capable of being forged, more fit for the making of bolts, nails, and sheathing for ships than any metal heretofore used for those purposes". The new alloy—which contained 54 per cent copper, 40.5 per cent zinc, and 5.5 per cent iron—was brought to the attention of the Admiralty by Mathew Boulton (who called himself the joint inventor), and a ship—the *Juno* frigate—was placed at Keir's disposal for a trial. The requisite number of plates and bolts were made, but there is no further record of the experiment. Keir's metal does not appear to have been referred to in the litigation on the Muntz metal patent sixty or so years later.

December 10, 1782.—The "new invented method of making small shot solid throughout and perfectly globular in form" by pouring the melted metal from a height into water was patented by William Watts, a plumber of Bristol, on Dec. 10, 1782. The process was adopted with success and was in general use by the end of the century.

December 10, 1845.—The first pneumatic tyre was patented by Robert William Thomson on Dec. 10, 1845, and consisted of a hollow belt composed of several thicknesses of canvas saturated with rubber solution and cemented together, the whole being then vulcanised. The cover was of leather. A set of the tyres is said to have run for 1200 miles without deterioration. Dunlop's patent, on which the present industry is based, was not granted until 43 years later.

December 11, 1863.—The ammonia-soda method of making sodium carbonate was made commercially successful by the process invented by Ernest Solvay and patented by him in Great Britain on Dec. 11, 1863. A factory was opened at Charleroi in 1865, and the industry quickly became established and finally ousted the Leblanc process. Brunner, Mond and Co., at their works at Northwick, were the first in England to adopt the new process.

December 12, 1885.—The incandescent gas mantle was patented in Great Britain by the late Karl Auer von Welsbach of Vienna, the inventor, on Dec. 12, 1885. The first mantle to reach England was brought over in a bird-cage by a woman, who refused to let the cage go out of her hands during the journey.