in the minds of oil technologists in Great Britain, and no Government bill, reports of foreign enterprise, secret explorations in Derbyshire or elsewhere, animates us from resignation to facts which one-time emergency and progressive geological knowledge have taught.

OIL pools of commercial magnitude (*pace* natural gas, shale oil and allied indications and potentialities) cannot reasonably be anticipated in any known area in Great Britain. Many years of official geological survey—a centenary in 1935 in point of fact—together with much independent work, leave few spots unknown, if not in detail, at least in sufficient outline to preclude even faint hope. The Government measure is discreetly, if not satirically, worded: it refers to oil which *might* be discovered or *may* exist; it excludes Northern Ireland from the Bill, presumably on political grounds; in this, as with the rest of Great Britain, it has the silent approbation of British geology, though it is in the public interest that that silence should be officially broken if the present bill is in any way interpreted as supporting authoritative views that oil does indeed exist in Great Britain and only awaits public money for its development.

Royal Botanic Gardens, Regent's Park

WHEN the lease of the Royal Botanic Society, Regent's Park, terminated in 1931, the grounds were thrown open to the public, but arrangements were made with the Office of Works for continuing the investigations in genetics which had been carried on there since the War. This arrangement has now been placed on a permanent basis, a portion of the original Gardens, including a quadrangle of buildings and the adjacent grounds, having been set aside for this work on rental from the Office of Works. Through the action of Prof. R. Ruggles Gates, the Courtauld research fund of £5,000 has been obtained as an endowment for this work, which is an important extension of the research facilities of the Department of Botany, King's College. The facilities include two greenhouses with boilers for heating, a potting shed, tool house, cold frames and a laboratory of four rooms. The latter is being fitted up for the examination of genetical material and the collection and treatment of cytological material from plants grown in the Gardens, as well as for photographic work. The Empire Cotton Growing Corporation is also making a grant for three years in aid of further researches on cotton and its relatives. Various other temperate and tropical economic plants are being investigated. The fundamental researches in cytogenetics, with which the name of Prof. Gates has been connected for many years, have now been extended to include a study of the native species of *Œnothera* in eastern Canada. The phenomena of distribution, relationships and hybridisation of the native species and varieties (many of them undescribed) found in this area constitute a genetic survey which throws light on many phases of the complicated evolutionary problems in this genus.

Sir Charles Parsons Memorial

THE Sir Charles Parsons Memorial Executive Committee, composed of the presidents of thirteen scientific and technical societies, with the Engineer-in-Chief of the Fleet, and presided over by Sir Frederick Gowland Hopkins, has just issued a statement of its aims and an appeal for subscriptions. Observing that the name of Parsons will ever be remembered with those of Newcomen, Watt, Trevithick and Stephenson, and that his fame was due not only to his work in marine and electrical engineering, but also to his investigations in various branches of physics, the statement says that it has been decided that the memorial shall take several forms. It is proposed, first, to place a memorial to him in Westminster Abbey; secondly, to found an annual lecture to be given by a distinguished man of any nationality, who will be chosen in turn by the various scientific and technical societies; and thirdly, it is proposed to arrange with the governors of London House that the library in that House shall be called the "Parsons Research Library". A bronze medal will be established in connexion with the annual lecture and a bust of Sir Charles Parsons will be placed in the library. London House was founded in 1931 as a hall of residence for Dominion and Colonial men students of white parentage, from the Empire overseas. The property, now under development, covers an area of about 1½ acres in the Bloomsbury district close to the University of London, and the proposed library will contain scientific and technical works. To carry out the whole scheme, it has been estimated that a sum of at least £12,000 is required. Copies of the appeal are being sent to members of the societies concerned, and the Executive Committee suggests that in general the maximum subscription should be two guineas. Donations should be sent to the Royal Society, Burlington House, W.1, and cheques made payable to the "Sir Charles Parsons Memorial Fund".

The New Hydrogen

IN the course of Lord Rutherford's Friday evening discourse on March 23 at the Royal Institution (see p. 481), experiments were shown to illustrate the differences in freezing point and in vapour pressure between ordinary and heavy water, and the differences in heat conductivity between ordinary and heavy hydrogen. For the first time, experiments were made to show the artificial transformation of lithium by protons and diplons of energy corresponding to about 100,000 volts. The enormous emission of fast protons when ammonium sulphate containing heavy hydrogen was bombarded by diplons was clearly shown by counting methods. The transformation apparatus was designed and operated by Dr. Oliphant, while Messrs. Watson and Sons (Electro-Medical) Ltd. loaned an installation to provide a steady potential of 100,000 volts to accelerate the ions.

Developments of Television

AN application of science has enabled a chairman of a company to become a historic figure. At the

annual general meeting of Baird Television, Ltd., held in a theatre in the west end of London on March 20, the shareholders heard and saw distinctly the chairman address them from a studio at the Crystal Palace, nearly eight miles distant. To the shareholders, and afterwards to representatives of the Press, the Baird Company arranged a programme of transmissions by radio from the Crystal Palace to enable the audience to see persons talking on various subjects, a cartoonist sketching at his easel, excerpts from popular films and 'still' pictures. All these items were reproduced in the receiver with sufficient detail for an audience of more than a hundred persons to 'look in', although the receiver was devised for use in the home rather than a theatre. The success of these demonstrations is attributed to the state of perfection of the large cathode ray oscillographs made exclusively for the Baird Co. by the research staff of a British industrial concern, the excellence of the photoelectric cells in use at the transmitting end, and the construction of amplifiers which are capable of dealing without phase distortion with a range of frequencies from 25 to 1,000,000 cycles per second. The subject matter to be televised is divided up into 180 lines (or strips) corresponding to 24 times the definition obtainable with the old 30-line apparatus. Vision is being transmitted from a dipole aerial on a wave-length of 6·0 metres, and sound on 6·25 metres.

JUDGING from the demonstrations given last week, the Baird Company's engineers have successfully overcome interference effects due to motors, lifts and other electro-magnetic disturbances met with at these short wave-lengths. A series of experiments have been carried out to ascertain the effective range of reception, as a result of which it is claimed that the Crystal Palace transmitting station can provide an ultra-short wave high definition television service for the whole of the Greater London area, which includes a population of about eight millions. Capt. A. G. D. West, who joined the board of the Baird Company last June to direct its technical development, is to be warmly congratulated on his achievement; and the Company on the first public demonstration of the broadcasting possibilities of high-definition television. We understand that a demonstration will shortly be given of the intermediate film-method, described by Major A. G. Church in NATURE of September 30, 1933, by means of which televised images of topical events will be thrown on screens in cinema theatres as well as on home-receivers within a few seconds of their occurrence. Another series of experiments on a new system of 'scanning' invented by Mr. Baird is nearing completion. These experiments aim at securing sufficient illumination in a studio to enable 'crowd' scenes to be televised directly with detailed fidelity.

Statistics in India

IN a paper on "India's Trade and Industrial Statistics", read before the Royal Statistical Society on March 20, Sir H. A. F. Lindsay, the Government of India Trade Commissioner in London, pointed out that progress in the compilation and preparation of official statistics in India has been from departmental to expert control. In 1871, when Sir William Hunter was appointed as the first Director-General of Statistics, the local authorities submitted their statistics to the appropriate Government department, which was responsible for tabulating and publishing them. Afterwards, expert control was gradually introduced, and now the Director-General is directly responsible for compilation and review. A new series of monthly statistics recently introduced relates to the output of the more important Indian industries and includes jute manufacture, paper, cement, matches, sugar, iron and steel, kerosene, petrol, sulphuric acid and sulphate of ammonia. In addition, cotton spinning and weaving statistics have been collected and published for many years past. The main difficulty has been to obtain statistics of the output of the numerous cottage industries which exist alongside modern large-scale factories, sometimes in active competition with these factories and sometimes catering for quite a different class of consumer. The Indian factory, however, provides a useful unit for the collection, compilation and publication of statistics of industrial output, and India has made a good start in this direction. There are many countries of no little industrial importance which have not yet made comparable efforts in the sphere of industrial statistics.

Origin of Bronze

AT a meeting of the Newcomen Society held on March 21, three short papers were read. The first of these, entitled "The Origin of Bronze", was by Prof. C. H. Desch, who gave an account of the results of the inquiries made for the committee of the British Association appointed to investigate the sources of the copper used by the Sumerians. Many specimens of objects found recently at Ur, Kish, Tell Asmar and other places have been analysed, and earlier analyses have been critically examined. A striking discovery is that true bronzes were made at a very early date and some of these contain certain 'key' elements, such as nickel and arsenic. So many of the early Mesopotamian objects examined contained small quantities of nickel that a search was made for copper ores containing nickel. One ore was found, accompanied by slag, at Jabal al Ma 'adan, in the State of Oman, and there are reasons for supposing this was a source from which the Sumerian cities drew their copper. Bronze, said Prof. Desch, must have originated in the East, and for further light on its origin an examination of ores from such places as Anatolia, northern Persia and Baluchistan must be made.

Early Dredging Machine

ANOTHER paper read at the meeting of the Newcomen Society on March 21 was by Mr. G. Bathe and dealt with the dredging machine of Oliver Evans. Oliver Evans was one of the outstanding pioneers of American engineering, constructing machinery for flour mills and introducing high-