

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-

pressure steam engines. In 1804 the authorities at Philadelphia commissioned him to construct a steam dredging machine which, because it could propel itself on land and in the water, Evans called the *Orukter Amphibolos*. Evans died, a disappointed man, in 1819. Before his death he destroyed a lot of drawings, and with them probably was lost the sketches of his dredger, the details of which to-day are very imperfectly known.

A Vitamin A Concentrate of High Blue Value

IN *Science* of March 16, p. 255, Prof. H. N. Holmes, in association with H. Cassidy, E. Hartzler and R. Manly, reports the preparation of a concentrate of vitamin A having a blue value of 144,000, that is, 14,400 times greater than the blue value of an average good medicinal cod liver oil. The starting material was the non-saponifiable fraction of halibut liver oil. This was chilled in methyl alcohol solution, to freeze out cholesterol, etc., filtered cold under nitrogen, transferred to pentane by addition of water, dried over anhydrous sodium sulphate and then, in pentane solution, cooled to about -70°C . with the aid of carbon dioxide snow mixed with alcohol and again filtered, with careful exclusion of oxygen. The cold pentane solution was next filtered through a Tswett column of very specially prepared carbon and washed completely through with pure pentane. The product obtained was a pale yellow viscous oil; different preparations showed blue values ranging from 105,000 to 144,000. The authors have not yet had time to analyse their concentrate or determine its molecular weight, spectral absorption bands, extinction coefficient or biological potency. Further reports of their work will be awaited with interest.

Recent Acquisitions at the Natural History Museum

AMONGST recent accessions to the Zoological Department of the British Museum (Natural History) is a valuable collection of mammals, including a large series of duikers and some specimens of the giant forest hog, which has been received from Mr. G. Foster, assistant game warden of Uganda. A small collection of important Russian mammals, which has been received in exchange from the Moscow Museum, contains specimens of *Dipus*, *Spalax*, *Citellus*, *Ochotona*, *Alactagulus*, and *Cricetulus*. As a gift from the trustees of the estate of the late Mrs. Mary Joicey, the Department of Entomology has received the most valuable present of butterflies and moths to reach it since the War. The collection comprises more than 300,000 specimens and includes the types of 3,000, descriptions of which were published in the main in the *Bulletin of the Hill Museum*. During his life-time, the late J. J. Joicey probably did more to stimulate the study of butterflies and moths, especially those of Africa, than any other private individual in Great Britain. The Department of Geology has received the skull of a child, about six years old, of the extinct Neanderthal race, discovered by Miss Garrod in 1926 in a cave near the Devil's Tower, Gibraltar.

In the Department of Mineralogy 474 individual masses of meteoric iron with a total weight of $165\frac{1}{2}$ lb.,

from the meteorite craters at Henbury, Central Australia, have been received by exchange from the Kyancutta Museum, South Australia. The larger masses weigh $46\frac{1}{2}$ lb., $25\frac{1}{2}$ lb. and $24\frac{1}{2}$ lb., the majority are small twisted pieces (meteoric shrapnel) torn from the main masses by the force of the explosions that made the craters. This completes a unique display of 1,000 lb. of material collected from the Henbury craters. Large blocks of long-fibre satin-spar (gypsum) from East Bridgford, Nottinghamshire, have been presented by Mrs. A. Coville. This material is exported to the United States for the fashioning of small fancy articles, which are sold at Niagara Falls, the material being stated to come from under the Falls. This export resulted from an inquiry from the United States made to the Museum about twenty years ago. Mr. W. C. Barton has presented to the Department of Botany about 8,500 sheets of flowering plants. The remainder of his herbarium will be handed over shortly. The present instalment includes the genus *Hieracium* and the families Ranunculaceæ to Rosaceæ with the exception of the genus *Rosa*, which was presented some years ago, and the genus *Rubus*, on which the donor is specialising in collaboration with the Rev. H. J. Riddesell. The herbarium includes those of H. J. Riddesell and Mrs. Foord Kelsey; the first, which is large, is particularly rich in Gloucestershire and South Wales, and the second in Berkshire, plants. The first portion of the lichen herbarium of Mr. D. A. Jones has been purchased. This includes nine hundred British specimens and five hundred European. Many of the British specimens are those on which records are based, and the collection supplements the very extensive Museum collections. Among the purchases is a set of 149 flowering plants from Galapagos Islands collected by H. J. F. Schimpff.

British Polar Year Expedition, 1932-33

THE Symons Lecture of the Royal Meteorological Society was given on March 21 by Mr. J. M. Stagg, who spoke on "The British Polar Year Expedition, Fort Rae, Canada, 1932-33". The activities during the International Polar Year 1932-33 really constituted a jubilee repetition on a more extensive and intensive basis of a co-operative scheme of observational work in meteorological and allied sciences so fruitfully carried out by fifteen countries during the First Polar Year. As in that year, 1882-83, part of Britain's share in the new international effort consisted in equipping and maintaining a station at Fort Rae, a trading outpost of the Hudson's Bay Company on the Great Slave Lake, north-west Canada. The programme of work of the party of six, who remained at Rae from July 1932 until September 1933, consisted primarily in obtaining as complete records as possible of the main elements in meteorology, terrestrial magnetism, aurora and atmospheric electricity; and the proximity of Fort Rae to the zone of maximum auroral frequency around the polar cap made the auroral investigations specially important. Methods of parallax photography were employed to determine the precise position of the aurora in space. The information brought back will be studied